

PANHANDLE HEALTH

A QUARTERLY PUBLICATION OF THE POTTER-RANDALL COUNTY MEDICAL SOCIETY

SUMMER 2024 | VOL 34 | NO.3



Medicine and the Visual Arts

Rattle & Shake by Joshua Sorenson

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On The Cover: "Rattle & Shake" by Joshua Sorenson

PANHANDLE HEALTH is published quarterly by the Potter-Randall County Medical Society, (806) 355-6854. Subscription price is \$12.00 per year.

POSTMAN: Send address changes to PANHANDLE HEALTH, 1721 Hagy, Amarillo, Texas 79106. ISSN 2162-7142

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President's Message

by Nicole Lopez, MD, FAAFP

Spring has been busy for our Potter-Randall County Medical Society. In April, we hosted our first Women's Physicians Section Luncheon at the home of Dr. Lisa Veggeberg, thanks to a grant from the May Owen Outreach Program. It was wonderful to meet and connect with so many women physicians in Amarillo. We plan to continue to grow our membership and opportunities to engage with women physicians in the future by hosting regular events throughout the year.

As president of the PRCMS, I had the opportunity to attend Tex Med in Dallas this May. I reconnected with past residents I have instructed and met many new physicians who feel passionately about the future of medicine in Texas. Most importantly, I was there as one of our past presidents of the PRCMS and Chair of the Lonestar

Caucus. Dr. Rodney Young, was elected to serve on the TMA Board of Trustees. We are very honored to have him represent the Panhandle and the Lone Star Caucus in this capacity, as he is the first person from our Chapter to be elected to this position. He brings many years of service and dedication to the Board and will no doubt be a strong voice for the Panhandle.

Art in Medicine is the focus of this issue of Panhandle Health. Art is found in all aspects of life, and medicine is no exception. Art takes many forms, from poetry to writing for medical journals, from Netter's drawings of anatomy, to drawing a picture on a piece of exam paper to explain a concept to a patient. Many physicians in our community have been blessed with artistic gifts - I personally know artists, musicians and singers at our medical school and am

amazed by their talent. I vividly remember my days in anatomy lab as a first-year medical student with amazement at just how the human body is intricately designed and how one part of our body cannot function without the other. Just like a successful clinic practice, we need every member of our team to function effectively and efficiently. I am very thankful to our nurses, front desk staff and administration who work so hard to help us take care of our patients, as well as our patients who put their trust in us and allow us to take care of them. Practicing the art of medicine is a privilege and an honor, and I would not be where I am today without the support of so many people and of my community. In honor of Nurses Week, don't forget to tell your staff just how much you appreciate them.

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Our Next Issue Of *Panhandle Health*

Features:

**One Health:
The Intersection of
Human & Veterinary
Medicine**



Executive Director's Message

by *Cindy Barnard, Executive Director*

WHAT WE'VE BEEN UP TO AT **PRCMS**

The PRCMS Annual Meeting was sponsored by Amarillo National Bank and held in their executive dining room. About 30 members of the society were in attendance. Guest speakers included TMA President Rick Snyder, MD, and TMA CEO Michael Darrouzet. Dr Snyder also oversaw the installation of the incoming PRCMS and Alliance officers.



The PRCMS Women Physician's group held a luncheon at the home of Lisa Veggeberg, MD. About two dozen women physicians from the area met to connect with both longtime and newer members of the society. The group plans to continue and expand this connection with continued events in the future.

The Retired Doctors Group met for lunch at the society office, with colleagues and friends reconnecting and discussing the interests and challenges of practicing medicine in past and current years.



A special thank you to our friends and sponsors who helped to make these events possible.



Message from the Potter-Randall County Medical Alliance

by Alena Martin & Madeline Lennard, Co-Presidents



The alliance is busy and back in action! We had a wonderful turnout for the Match Day happy hour we co-hosted with CCA and Lorraine and David Wilhelm. Huge, huge thank you to all the physicians and spouses who came and supported the fourth-year medical students. On May 3rd, we continued our medical school outreach, partnering with the Medical Society and Amarillo National Bank to provide lunch to the incoming third years during their orientation. The Alliance would like to start a mentoring program for these and future medical students. We collected the specialties the future physicians are interested in and will be looking for host families/mentors to not only help them feel welcome in Amarillo but also help them reach their career goals. If you are interested in being involved, send us an email at potterrandallalliance@yahoo.com.

Fourteen members attended Bunco de Mayo and it was so much fun. Lots of good food, laughs, and connections were made. We asked all guests to bring a gift card to help with teacher appreciation week at Hamlet Elementary. Join our Facebook group; Potter Randall Medical Alliance, for invites to and updates for future events.

Summer is supposed to be fun, and the Alliance is excited about resident happy hour on June 12th as well as the family potluck and BBQ competition on July 13th, both hosted by Madeline and Luke Lennard. We are looking for physicians and spouses who would like to cook brisket or ribs for this event. Facebook invites have been sent! Please respond, or send an email, and let us know if you want to participate. Event goers will vote for their favorite meat with cash. All money raised will go towards purchasing helmets for the Northside Toy Drive.

The perennial favorite, Fall Couples Social, is on the calendar for September 14th. Make plans to join us at the Schneiderjon's home at Lake Tanglewood. We have drinks by Sips and Giggles as well as food and boat cruises planned. It will be a great time to reconnect!

Thank you to everyone who responded to our call for membership. Our membership has increased 42% since January, and we were acknowledged by TMAA for having a 97% renewal rate for current members. Both county and state leadership were thrilled to find that Amarillo Family Physicians Clinic contacted the TMA knowledge center and added Alliance membership for all their partners! PRCMA has a long history of active membership by both physicians and spouses. We would love to have more practice-wide physician membership to help further our mission of outreach, advocacy, and community. Practice managers can easily add alliance membership for their partners by calling the TMA Knowledge Center at 1-800-880-7955. Thank you again to AFPC for getting this ball rolling.





Guest Editorial: The Art of Perception: Exploring the Relationship Between Vision, Art, & Medicine

by Joshua Sorenson, MD

As an artist turned medical doctor, my journey began with a fascination for the complex relationship between the eye and the brain. To have become a hospitalist at BSA—starting from a studio artist selling artwork in Sante Fe, NM--was, to say the least, an unexpected journey. From the strokes of my paintbrush to my clinical Gestalt, I have come to appreciate how our perception of the world around us is deeply intertwined with the complex workings of our visual system. In this article, I will delve into the marvelous realm of vision and art, exploring how the eye and brain collaborate to detect three-dimensional shapes on flat two-dimensional surfaces.

My journey into the world of medicine was an unconventional one, shaped by my background as an oil painter and my insatiable curiosity for the biologi-

cal underpinnings of vision. It all began with a simple realization – that to create the illusion of depth and dimension on a flat canvas, I should first attempt to grasp the way the human eye and brain work together to perceive shapes and forms.

To understand this, it seems logical to ask, “What we are seeing when we look around in the first place?” Or put more specifically, “What is light?”

It is hard for most of us to conceptualize that the entirety of what is visible to the naked eye is roughly 0.0035% of the entire electromagnetic spectrum. This is according to US Department of Energy and the National Nuclear Security Administration.

One pivotal moment in my journey from art toward medicine was my

discovery of Harvard Medical School Neurobiology Professor Margaret Livingstone’s groundbreaking book, “Vision and Art: The Biology of Seeing” (1). In its pages, I found a wealth of knowledge about the intricate interplay between vision, perception, and art. Livingstone’s work shed light on the remarkable capabilities of the human visual system and its ability to decipher three-dimensional information from two-dimensional stimuli.

UNRAVELING THE MYSTERIES OF VISION

By looking into the fundamental principles of vision, I will attempt to elucidate how our eyes capture that visible light referenced above and transmit signals to the brain for interpretation. One of the most intriguing revelations, for me, was learning of the presence of the two dis-

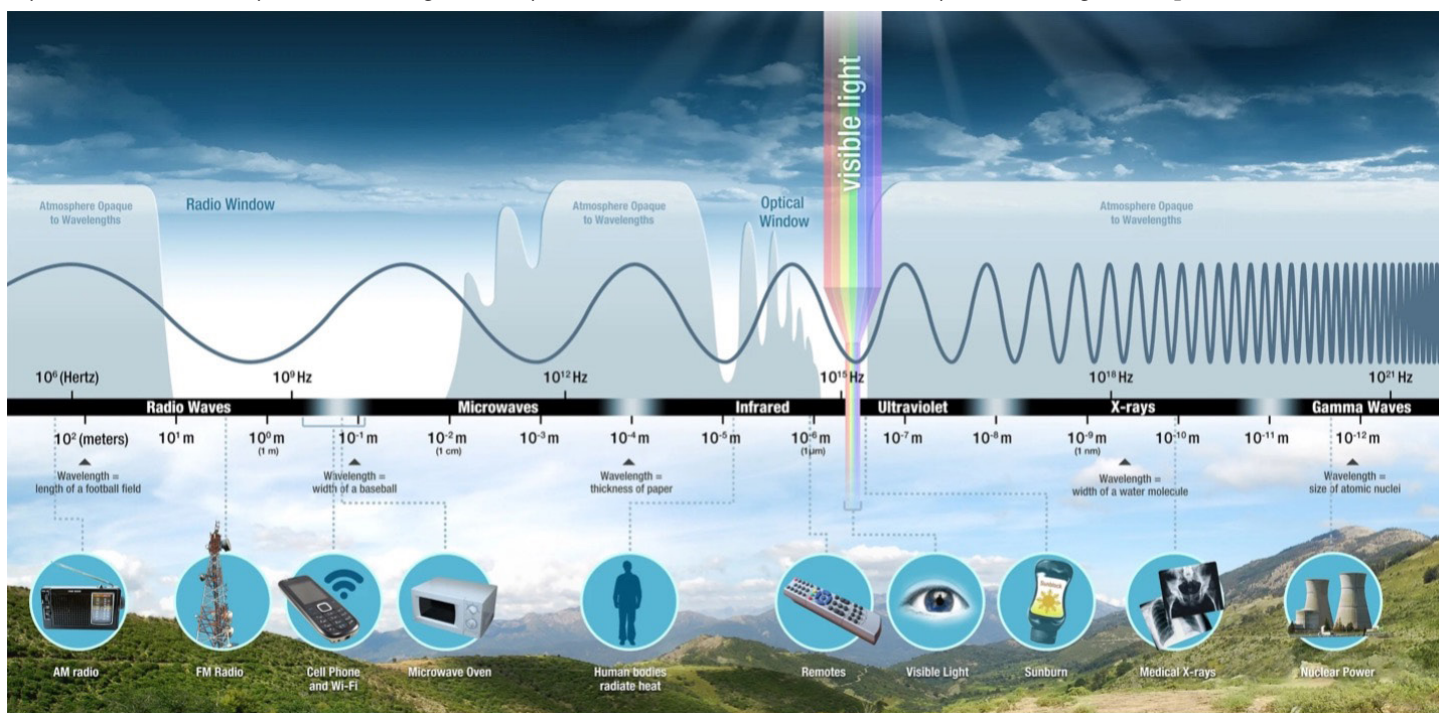


Image: The electromagnetic spectrum is the full range of electromagnetic radiation, organized by frequency or wavelength. The spectrum is divided into separate bands, with different names for the electromagnetic waves within each band (i.e., radio waves, microwaves, infrared radiation, visible light, etc.). (1)

tinct types of photoreceptor cells in the retina – rods and cones. Rods are responsible for detecting low levels of light and are essential for black-and-white vision, while cones enable us to perceive color in vibrant detail.

What fascinated me most was the staggering difference in numbers – with approximately 120 million rods dedicated to black-and-white vision and a mere 6 million cones responsible for color perception (3).

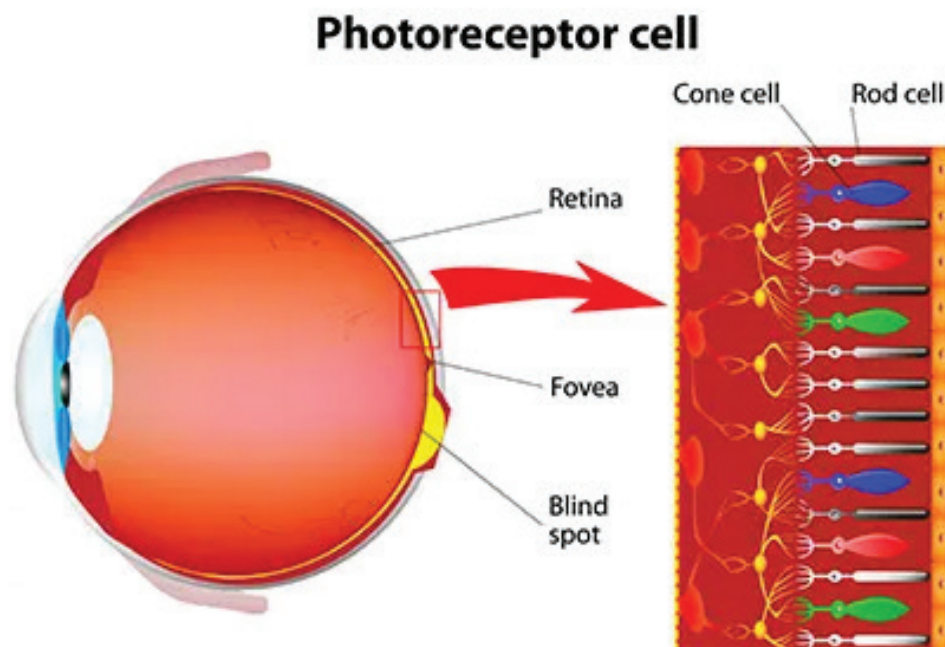
This disparity underscores the importance of value and contrast in art, as the manipulation of light and shadow is crucial for creating the illusion of depth and dimension.

Livingstone’s exploration of the visual cortex further deepened my understanding of how the brain processes visual information.

Through elaborate neural pathways, the brain seamlessly integrates inputs from the eyes, allowing us to perceive the world in all its complexity. This interplay between sensory input and cognitive processing forms the foundation of our visual experience and shapes our perception of reality. I applied this knowledge to painting, bearing in mind that, biologically, color (while it may have helped our ancestors find the ripest berries) does not have much bearing on survival or functionality. This was very freeing for me as an artist, signaling that I could be more liberal in my approach to color variation/usage. However, it simultaneously taught me that if I wanted a “true feel” or likeness from the perspective of representational art, the value of my subjects (relative light/dark, i.e., rods) needed to be as close to what our brains perceive as possible.

ONE STEP FURTHER.

The brain’s perception of visual stimuli is shaped by the way neurons in the visual system respond to light and patterns. How the brain processes informa-



tion from the eyes and organizes it into meaningful representations of the external world involves complex interactions between different regions of the brain, each specialized for detecting specific visual features such as edges, colors, and motion.

I grew up in an era when those “Magic Eye” images were everywhere. I would stare cross-eyed, seemingly for hours, in the hopes of a revelation, eventually learning that, to trick my brain, I had to look through the image and diverge my eyes. This is quite difficult, as it is an unnatural way of seeing. It involves “pointing” your eyes beyond where you are focusing. Difficult indeed. This is what really drew me to art as a child, these tricks of the eye and brain.

These popular images were developed in the early 90s by an engineer and artist team who discovered that, by the manipulation of repeating patterns to control the brain’s depth perception, three-dimensional images could be “hidden” in a two-dimensional pattern.

What this taught me, though, was that the position of our eyes apart from each other, and the different signals coming into the brain, when combined, help guide the brain in appreciating depth.

You may be wondering how an artist would use this knowledge to better his craft. For me, the answer is in undoing the natural “assistance of the brain” and allowing oneself to visualize without depth to better assess the other fundamentals of the subject you desire paint-



Above: “Do You Want to Build a Snowman?” is an example of an oil painting I created using this knowledge. Note that without color, the subject’s representational quality is largely unchanged.

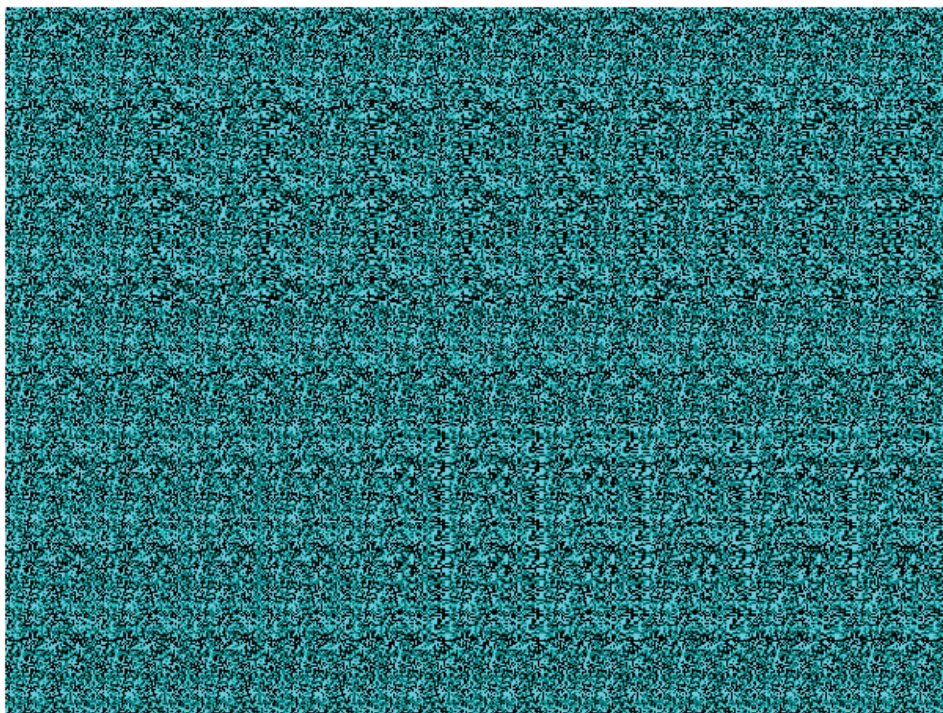


Image: Can you see the sailboat? It's a schooner actually, but don't beat yourself up for not seeing it (4).

ing--namely, value, scale, edges, color, and general composition. It is commonly taught in the relatively small circle of artists who paint professionally that Da Vinci himself initiated the practice of judging his artwork with one eye closed, to eliminate the disparity that arises when viewing objects with binocular vision.

Livingstone's book goes on to highlight the role of visual illusions in elucidating the mechanisms underlying visual perception. She discusses how illusions, such as the "Kanizsa Triangle" or the "Hermann Grid" reveal the brain's tendency to fill in missing information and make assumptions based on context. Artists often exploit these perceptual quirks to create illusions of depth, movement, or ambiguity in their works.

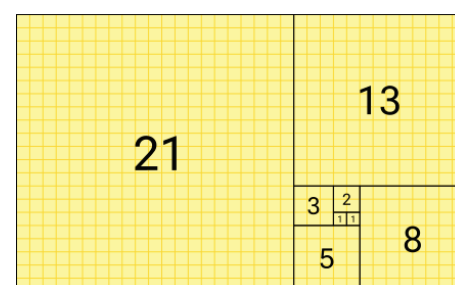
The Kanizsa Triangle (left) (5) is an illustration of the brain's ability to quickly fill in gaps and interpret shapes as they relate to one another. As you may see, there are no circles or triangles in the image. However, you may perceive there to be two triangles overlapping, with the edges of one superimposed above three circles. The Hermann Grid (right) (6)

is another example, where viewers often report seeing gray or black spots at the intersections of the grid lines, despite there being no such spots present in the actual image.

Furthermore, the concept of "perceptual constancy" attempts to explain the brain's ability to perceive objects consistently despite changes in lighting or viewing conditions. Again, artists use techniques such as shading, perspective, and color to create realistic depictions of three-dimensional space and to evoke a sense of depth and form by understanding this. Livingstone also delves into the phenomenon of "figure-ground segregation," the brain's ability to distinguish between objects and their background. She discusses how artists manipulate contrast, contour, and composition to direct the viewer's attention and create dynamic visual compositions.



Composition, or the technique of organizing your subject(s) within the dimensions of an artwork, is one of my favorite elements of art. It involves planning your painting in its very earliest stages. It is a way of foreseeing how the viewer's eye will be working its way around your image. There are countless methods for this, and each artist has their favorites. One of mine is the "Fibonacci sequence." The Fibonacci sequence has numerous fascinating properties and applications in various fields, including mathematics, computer science, art, and nature. It appears in many natural phenomena, such as the spiral shapes of shells and galaxies, and in the growth patterns of plants, including the arrangement of leaves on a stem, and the branching of trees.



In addition to the Fibonacci composition, other elements of the art are on display below in my painting "Sunning." (on the following page) Note that the focal point of the painting (the place I want the viewer to key in on most of all) is the area at the end of the Fibonacci sequence. It is also the area of greatest contrast between light and dark and includes the sharpest/hardest edges within the painting. As I proceeded out from the focal point, I loosened my brush strokes, including softer edges--mimicking the way the eye perceives less focus or detail in its periphery.

By drawing parallels between the workings of the neuroscience of vision and its implications on art, we can gain a deeper understanding of how we perceive the world and how those visual stimuli can profoundly affect our aesthetic experiences.



FROM CANVAS TO CLINIC: BRIDGING THE GAP

Armed with newfound knowledge and inspired by the intersection of art and science, I embarked on a journey that would ultimately lead me to the field of medicine. My transition from the world of art to the realm of biology and medicine was a testament to the power of interdisciplinary exploration and the boundless potential of curiosity-driven learning.

As a medical doctor, I continue to draw upon my background as an artist, recognizing the parallels between the creative process of painting and the analytical approach to medical diagnosis and treatment. Both endeavors require keen observation, attention to detail, and a deep appreciation for the intricacies of the human experience.

In conclusion, the relationship between vision, art, and medicine is a tribute to the profound interconnectedness of human perception and creativity. As we continue to unravel the mysteries of the eye-brain relationship, we gain deeper insights into the nature of perception and the ways in which art and science converge to shape our understanding of the world.

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Dr. Joshua Sorenson, M.D. is a dedicated hospitalist at BSA whose passion for healing extends from the canvas to the wards. By transitioning from a career as a full-time oil painter to medicine, he brings a unique blend of creativity and empathy to his practice. Balancing his roles as a devoted husband and father of two, he finds inspiration in both the art of medicine and the art of life.

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Blurry Visions: Exploring Visual Challenges in the Brushstrokes of Impressionist Masters

by Robert Gerald, MD & Kaitlyn Moseley MD, PGY2 Family Medicine, TTUHSC
Amarillo



Art is a special human endeavor that elevates the spirit and generates satisfaction. Great art transcends the ordinary and the expected, and yet the appreciation of art is rooted in our life experiences. In the definition of art, there is one underlying common core: vision. To the extent that art is a visual medium and that vision neither defines nor explains art, visual mechanisms can set a limit for what an artist can do and for what a viewer of art can appreciate.

Great artists have an internal image of what they want to produce, so their vision serves as a tool but not as a determinant of their style. However, an artist or a viewer of art can only see with the vision they have, and a distorted view of the world will influence how art is interpreted, if not how it is created. The question of artists' eyesight is fascinating and has generated extremes of erroneous speculation (1). The problem is exacerbated by the separation of the world of art from that of science. Edgar Degas himself had little belief in the influence of sight on a work of art and thought the creative spirit of the artist allowed him to overcome problems of this sort with ease, as long as the artist was able to assess his work visually. However, it should be stressed that failing sight and its repercussions for the painted work do not necessarily imply artistic deterioration. August Renoir pronounced that "Degas painted his best things when he could no longer see." The fact that in his case the cause was pathological does not hinder the aesthetic quality of his images. Richard Liebreich, chair of ophthalmology at St. Thomas Hospital in London, who himself had a keen interest in art, said a hundred and thirty years ago, "to be physiologically normal is in no way a prerequisite for art" (2).

THE COMPLEXITY OF VISUAL PERCEPTION

The retina codes for contrast, and the impact of contrast is evident throughout art history. Color processing is complex, and artists have exploited it to disconnect color from form. It is hazardous to diagnose eye disease from an artist's work, because artists have license to create as they wish. When eye disease is documented, though, the effects can be analyzed. We can barely touch upon the complexity of either vision or art; their interaction, however, demonstrates some of the ways in which understanding vision and eye disease can give insight into art.

The basic aspect of retinal coding is recognition of contrast through the development of receptive fields of cells, which link the photoreceptors to the ganglion cells of the retina, with the help of horizontal and bipolar cells. The interaction of these cells is complex--with central excitatory and surrounding inhibitory input from groups of photoreceptors asymmetrically cancelling each other when activated by contrast in ambient light. This drives our recognition of form and our perception of brightness. Contrast is very much a part of art. Many artists have used subtle shading to great effect, such as the 20th century painter Georgia O'Keeffe.

Outdoor sunlight may be a million times brighter than the light in a dim gallery where we view art. The cone photoreceptors, which provide our vision in all but the dimmest of light, have a very limited range of brightness sensitivity. There is only a 100-fold spread of energy between a stimulus that fails to activate a cone, and one that maxes out the cone response. With this 100-fold range of white-to-black discrimination, whether

indoors or outdoors, a painting with this range will appear realistic in either location. We judge the location of a scene by its content, which accounts for the fascination of Magritte's famous painting that shows a bright sunny sky above a darkened row of houses illuminated by street lamps: our sense of light and dark is in conflict with different portions of the same scene.

We recognize a wide array of colors, but color perception is processed in terms of contrast rather than absolute wavelength. We have red-, green-, and blue-sensitive cone pigments, but the bipolar cells have center-surround receptive fields that contrast red vs green, and blue vs yellow. Artists perceive colors in this same way, and both color contrast and color constancy will affect scenes painted under different conditions. For example, look at the paintings of Monet, who often painted the same subject at different times of day or in different seasons. He shows a variety of colors that he could apply to the same lily pads in his garden in Giverny. We know that he was an extraordinarily sensitive observer of light and color.

EYE DISEASE

The complexities of normal vision influence the way we see contrast, form, and color, and are a part of the artist's toolbox. As ophthalmologists, we deal with dysfunction of these visual tools caused by age and disease, and it is reasonable to ask when and how this may affect how an artist works or an artist's style. There must be some point at which visual disability will put constraints on what an artist can do. Yet artists with excellent vision may choose a style for their own aesthetics and paint realistically or abstractly, in grays or in color, with

precision or with freedom. So, it is very difficult to look at a work of art and make judgements about an artist's visual disability or eye disease.

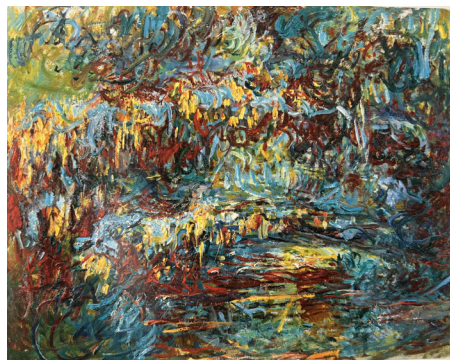
Monet (1840-1926) is best remembered for the paintings of his garden and water lily pond in Giverny. In his 60's, Monet started to develop age-related nuclear sclerotic cataract lens opacities that would eventually affect his work dramatically. By 1915 he began to struggle with a loss of color discrimination that would be devastating to any artist whose work depended upon subtle color variations.



Color chart as it would appear through a dense brunescent cataract. Note the loss of color distinctions, disappearance of white, and darkening of blue.

Despite progression of his cataracts and declining vision, he was adamant to avoid surgery at all costs. As the cataracts progressed, his view of the garden became more yellowish and murkier, and his blues became darker and indistinct; by 1922, colors were barely recognizable. In remembering the colors of the sky and water and the world and how they used to look, his efforts to paint them led

paradoxically to the use of brighter and stronger blues and colors of orange. These colors may have been purposeful or may reflect an attempt to get some feedback through the brunescent lens opacities of nuclear sclerosis. These late paintings dramatically demonstrate the struggles of a great painter to continue working despite significant visual impairment. He finally agreed to have surgery on his right eye in 1923 in a three-stage procedure. It was two years after surgery before his color vision felt normal and he was able to return to work on his large canvases. It is doubtful that Monet's abstract and strongly colored paintings, done through dense cataracts, were designed by aes-



The Japanese Bridge in Giverny(c. 1922) by Claude Monet, Painted during his eighties, which necessitated cataract surgery in 1923

thetic choice alone. We do not know whether he was trying to paint a memory, to paint what he saw, or to paint what he wanted us to see. We do know that his options were limited by failing vision (3).

Another impressionist suffering from cataracts was Mary Cassatt, who lost detail with impairment of vision and stopped painting in 1913--but there were no obvious changes in color as with Monet. Because of other ocular disease associated with diabetes, uveitis and glaucoma, cataract surgery was not successful in improving her vision.

El Greco, of the 16th and 17th centuries, is noted for his paintings with elongated figures. Some have ascribed the elongated figures in his art to an astig-

matic error. This is known as "the El Greco Fallacy" (4), since astigmatism is a refractive error, rather than a distortion, that creates two blur circles on the retina, correctable with astigmatic lenses at that time.

MACULAR DISEASE

With most macular disease, the predominant symptom is a loss of visual acuity and contrast. There is usually no strong deficit in color perception. When an artist's style becomes broader and less precise, it is easy to suspect macular disease as the etiology. But because stylistic changes can be multifactorial, it is only meaningful to discuss the effects of maculopathy in art where failing vision can be historically documented.

Paul Cézanne's paintings of familiar scenes maintain a steady focus on artistic experimentation despite his deteriorating vision. Similarly, other aged artists, from Titian to Picasso, suffered visual loss while maintaining a consistent style.

Georgia O'Keeffe, the great American painter of landscapes and nature, was diagnosed with macular degeneration at the age of 77. In her early 90s, her vision had declined to the point that she gave up painting altogether. Prior to her macular degeneration, her paintings were known for their exquisite shading and shadows, and fine details. In her later years, she did not lose ability to see the natural shapes of the land but did lose the ability to paint them with subtlety. Some of her last works were watercolors of simple lines and dots as a new innovation to explore abstract images, returning to the style of her twenties that she could manage despite her reduced acuity.

Edgar Degas (1834-1917) suffered from a loss of central vision of the macula, without the peripheral loss or color impairment of cataracts. Changes in Degas' style correlated rather closely with his progressive loss of vision (2). In the 1870s, his drawings were precise with facial detail and careful shading. By the late 1890s, his works became pro-

gressively less refined. After 1900, these effects became extreme, and paintings seemed mere shadows of his customary style, with irregular outlines of bodies and images marred by blotches of color without details of faces. We may ask if these images are as he intended them to appear to us, when these later works were out of line with his traditional style. Degas' blurred vision smoothed out some of the graphic coarseness of his shading and outlines. These works may have appeared better through his abnormal vision than through our normal vision. Degas' main concern was the shape and posture of his subjects and their setting in space, and these are easily discernible even with poor vision. With respect to seeing subjects and scenes, Degas had fewer problems even with lower levels of vision in planning and organizing his painting. His use of bright colors was not impeded by his macular disease. But his macular disease did blur his own view of his later works; making them appear more normal to him than to us, accounting for his acceptance of his works, even though they may seem crude to our normal vision.

MONET'S CATARACTS VS. DEGAS' MACULAR DISEASE: A COMPARISON

Both Monet and Degas struggled when their visual acuity fell to levels at which it was difficult to paint details, but the situation was more complicated for Monet with his loss of color perception.

This affected his style of showing variations of seasons, times of the day, lighting, and subtle shadows for several years prior to his cataract surgery. He had to use his memory from 50 years of experience as a painter to choose colors to create an impressionistic aura.

Degas had for many years used a limited palette of colors in his works (these were often rather bright), so that, although his color perception was not entirely normal with his maculopathy, this was not a major impediment to his technique. Monet in contrast struggled as he looked out onto a murky yellow-brown garden and tried to decide what subtle impression to create on the canvas. He realized he could not see colors well on his palette. He tried to compensate for this with curiously intense colors in his late works. In regard to interpretation of his late work, the effects of blur on Monet's art are quite different than with Degas. Monet's images are intended to convey effects of color and form without a great deal of detail. Monet may not have been able to discriminate between the effects of applications of paint at the time his vision was poor, but the blur hardly altered the Impressionistic effect. We do not know if he achieved his goals, since he could not judge for himself what he created. If he was pleased with what he saw, then we with normal vision are not seeing what he intended.

We can emphasize the effect of cataracts and retinal damage on Monet and Degas, because we have good historical documentation of the visual loss that affected these two great artists. Without such medical records, it would be inappropriate to try to recreate their diagnoses from the art itself. Art is created for many different reasons, and artists may choose various colors, styles, and degrees of representation. It would be presumptuous to assume that nonrepresentational painting implies poor visual acuity or that painting with strong colors (or lack of color) implies that the artist has cataracts or color vision disturbances. These observations do, however, describe how known visual disability altered the perceptions of Degas and Monet. By recognizing how the world appeared to them, we can better appreciate their struggles and their accomplishments, allowing us to place their late art in its proper context.

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Dr. Bob Gerald was born and grew up in Amarillo, Texas. He obtained his undergraduate degree from Texas A&M University and graduated from medical school at The University of Texas Southwestern Medical School at Dallas in 1974. He completed an internship in internal medicine at the University of South Carolina in Charleston in 1975, followed by residency in ophthalmology at Louisiana State University Medical Center in New Orleans in 1978. He has practiced general ophthalmology in Amarillo since 1978.



Degas' painting of nude bathers show less refinement from 1886. A through D (vision 20/50) through F (vision 20/300). Note that the shading appears more graded and natural in the later blurred works.

I appreciate being offered these therapy sessions. I would not have thought about taking care of my own mental health in this way.

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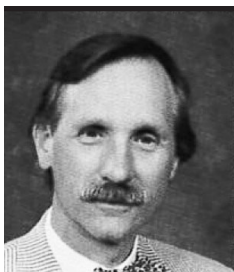
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Seeing the World: What Paul Cézanne Gave to Modern Art and Modern Medicine

by Phillip Periman, MD, FACP

The screen saver on my laptop (the computer I travel with and use as a back-up for most of my off-the-wall concepts concerning the meaning of life and medicine) shows a photograph of an oil painting by Paul Cézanne. I made this photograph in 2002 at an exhibition of the collection of Ivan Morozov at Paris's Louis Vuitton Foundation. The work, painted by Cézanne between 1898 and 1902 and entitled "Route de la Montagne Sainte Victoire" (78cm x 99cm), now hangs in the Hermitage in Saint Petersburg, Russia. Its central motif depicts a craggy, eccentric peak in various shades of blue and grey that sometimes make it hard to tell the sky from the cliffs that loom mysteriously over the greenery of the country foreground. The blues and greys are interrupted by the yellow and orange tones that the artist uses for a house on the left side of the painting and a road coming down the right side of the mountain. The road disappears into

darkness at the bottom of the frame, leaving the viewer wondering if he could find his way in the hot Provencal summer or would instead collapse of heat exhaustion. If so, he would be carried by ambulance to a hospital in nearby Aix-en-Provence, Cézanne's birthplace and the city where the reclusive artist would spend the most productive years of his life. There he made thirty-six paintings and forty-five watercolors of the limestone peak of Mt. Sainte Victoire. The peak was visible with just a fifteen-minute walk up Chemin de la Marguerite from Cézanne's atelier to the top of Lauves' hill, where the artist went regularly to satisfy his obsession to capture the rough mountain that dominated his city, much the way Pike's Peak looms over Colorado Springs.

CEZANNE AND PERCEPTION: TAKING TIME TO SEE

In 1981 Roger W. Sperry received the Nobel Prize in Medicine and Physiology.

His studies of patients whose corpus callosum had been severed led him to propose that the right side of the brain managed visual perceptions, while the left brain specialized in verbal expression. Betty Edwards used his ideas in her book, "Drawing on the Right Side of the Brain" to teach thousands of people to draw. I was one of those folks.

Drawing taught me to slow down. Do not rush observation. Do not put pencil to paper with preconceived notions, but only with the visual input directly available. It also led me to Aix-en-Provence and Lauves' Hill.

I tried to draw a picture of Mount Sainte Victoire in the style of Cézanne; the effort humbled me.

Sperry's insights probably oversimplify how the brain works. Modern neuroscientific studies suggest that the two sides of the brain work together for both visual and verbal perception and activity. Nevertheless, I had learned a valuable lesson—not to rush visual observation.

What has this to do with the practice of medicine? In the simplest terms, it means not to listen to the lungs or heart with a stethoscope placed on top of a shirt or blouse. Ask the patient to disrobe. Look at the skin, the joints, the blood vessels. Do you see evidence liver dysfunction (spider angiomas?), or drug use (multiple venipunctures?), or abuse (ecchymoses?)--a patch of psoriasis in someone with unexplained arthritis, or even an unnoticed melanoma under the fingernail?

Recognizing patients' diversity means that the physician should develop both verbal and visual ways of communication. Betty Edwards gives drawing classes



to corporations as a way of teaching their employees new ways of sharing, communicating, and solving problems. Imagine what might have happened at Boeing if the manufacturing and administrative teams had collaborated on drawings of the door panel that blew off their aircraft!

MODERN ART, MODERN POETRY, MODERN MEDICINE

Paul Cézanne changed the way we look at the world. T. J. Clark, in his book “If These Apples Should Fall”, explained his own transformation in seeing thusly: “What I can remember is the feeling that came over me when I first looked at the painting ... ‘The Basket of Apples.’ I think I can retrieve the feeling even sixty years later...If I hadn’t had the feeling back then...and cultivated it through the years...I wouldn’t fully have known what it is to be modern.” (1).

Put simplistically, Cézanne gave up using perspective, light, and shadow (as every artist had done since the Renaissance) and used geometric brushstrokes, volumes of color, and blank canvas to create a new kind of representation. He reveled in the two dimensionality of his paintings and, in doing so, altered the viewers’ preconceptions of what a painting should look like. He disclosed, to anyone taking the time to look, a new way of seeing the world--a modern way that led to cubism, fauvism, and abstract expressionism. In much the same way, the pediatrician (and greatest American poet of the twentieth century) Willian Carlos Williams wrote that there are “no ideas except in things”--whether his imagery was a red wheelbarrow, a brown sweater, or chilled plums in the fridge. Williams’ imagism helped create modernism in poetry. So too Cézanne’s paintings of jugs, apples, and flowers--paintings that defied classic tenets but uncovered a new reality--helped give rise to modernism in art.

Beyond the purely utilitarian value of making a diagnosis of a disease in a patient, why should a physician care

about any of this--modern art, or modern poetry? I would say: because medicine continually changes. Medicine dramatically changed from September 1961 when I entered medical school until today and is clearly continuing to change as artificial intelligence enters the clinic tomorrow (if not yesterday).

MODERN MEDICINE: THE GROUND SHIFTING BENEATH OUR FEET

In the 1960s, interns worked up to 120 hours a week in the hospital (and at Johns Hopkins never left the hospital for the entire year!). The leading chairman of a department of medicine, Dr. Eugene Stead of Duke, wrote a letter to the New England Journal of Medicine, contending that house staff were still students and should not be paid (2). There were no three-dimensional images: no CAT scans, no MRIs, and no PET scans. Curative chemotherapy was widely believed to be a fantasy: one could not possibly “dissolve the right ear without also destroying the left.” Medical students were ninety percent male, and most did not marry until they had finished their training. Supported generously by state and federal funding, medical education was inexpensive. In some situations, it was possible to make enough money with a good summer job to pay for a semester of medical school. I graduated from Washington University School of Medicine in St. Louis with no debt. We young doctors thought of ourselves as having a calling to service and sacrifice. Our sense of meaning and purpose drove us to ignore the long hours, low pay and difficult conditions of our work environment.

This has all changed. Doctors are no longer independent solo practitioners running small businesses dedicated to their patients. Instead, many doctors think of their work as just another well-paying job in the increasingly for-profit world of healthcare. (I predict it won’t be long before doctors’ unions will commonplace, much like college athletes.)

Many argue these changes are clearly for the better. Certainly, medicine in 2024 can do things that change the natural course of illness and benefit patients in ways undreamed of in 1961. One small example: since my cataract surgery, my eyesight has been 20/25. I don’t wear glasses except to read. This has caused some people to remark that they did not recognize me without them.

Many patients, however, are unhappy. They complain that their doctors not only don’t listen to them, but they also never examine them (in 2023 I had physical exams in two medical institutions ranked in the top five in their specialties, and I would have flunked every person examining me if they had been in my second-year physical diagnosis class!). Is this change because, as Lisa Rosenbaum recently asked, physicians no longer see themselves as privileged professionals, but as “cogs of capitalism” (2)?

Maybe there is another lesson to learn from Cézanne. Not only is it important to look without preconception and to look completely and slowly if one wishes to make a new way of seeing and painting. But it is also important to look and to paint with a sense of purpose, an obsession to get it correct even if one must repeat the process over eighty times and even if one must climb to the top of Lauves’ Hill in the rain to see one last time the complexities and beauties of Mount Sainte Victoire.

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Medicine and Art in Alice and Wonderland

by Sheryl Williams, MD

INTRODUCTION: CHARLES LUTWIDGE DODGSON (AKA LEWIS CARROLL)

Lewis Carroll, beloved by many, questioned by others, was a man of many talents. Creator of “Alice’s Adventures in Wonderland” (1865) and “Through the Looking Glass” (1871), he was a favorite 19th century English author. What many people don’t realize is that Lewis Carroll was the pseudonym for Charles Lutwidge Dodgson (1832-1898). This pseudonym was not chosen at random but was a complicated play on words. “Lewis” was the anglicised form of Ludovicus, which was the Latin for Lutwidge, and Carroll an Irish surname similar to the Latin name Carolus, from which comes the name Charles(1). The transition went as follows: “Charles Lutwidge” translated into Latin as “Carolus Ludovicus”. This was then translated back into English as “Carroll Lewis” and then reversed to make “Lewis Carroll” (1).

Dodgson was not only an author, but also a poet, mathematician, and photographer. He wrote his famous works about Alice and her misadventures in Wonderland and penned the nonsense poems “The Jabberwocky” (1871) and “The Hunting of the Snark” (1876). He published multiple mathematical treatises under his real name such as “The Fifth Book of Euclid Treated Algebraically” and “An Elementary Treatise on Determinants, With Their Application to Simultaneous Linear Equations and Algebraic Equations” (certainly best-sellers of the time!) as well as books on cyphers and logic. For two years, he wrote a weekly column for Vanity Fair that featured mathematical word games and puzzles. He served as a Lecturer at Christ Church College in Oxford until 1881,



“It would be so nice if something would make sense for a change!”

where he remained in residence until his death from post-influenza pneumonia in 1889 at the age of 65.

The photography of Charles Dodgson is still controversial. He became a well-known amateur photographer and made portraits of such celebrities as Alfred, Lord Tennyson. But his favorite subjects were landscapes and nude studies of children. This has generated a great deal of discussion in scholarly circles and was even the subject of a BBC documentary, “The Secret World of Lewis Carroll” in 2015.

THE ARTIST BEHIND ALICE IN WONDERLAND: JOHN TENNIEL

The artist behind the illustrations in the original Alice books was John Tenniel, an English illustrator popular in the late 1800’s. He created drawings that were then turned into wood block prints. His 92 black and white drawings published in the Alice books are considered the defining depiction of the Alice charac-

ters, despite multiple movies and Disney remakes. He was trained at the Royal Academy of Arts in London in classical methods but found his calling in drawing. He was also the principal political cartoonist for Punch Magazine for over fifty years. While at Punch, he provided more than 2000 cartoons and minor drawings--this despite losing the sight in his right eye from a fencing accident at age twenty. Tenniel’s style was considered “grotesque,” which is why scholars believe Carroll chose him as the illustrator. “Tenniel’s style was characteristically grotesque through his dark, atmospheric compositions of exaggerated fantasy creatures carefully drawn in outline” (2). The images are not pure fantasy, combining touches of reality and following the text closely. Dodgson asked Tenniel for other projects after the Alice books, but he had given up literary illustrations, focusing entirely on his cartoons. Tenniel received his highest accolade when Queen Victoria bestowed knighthood for public service to him in 1893.

THE ALICE IN WONDERLAND SYNDROME

Medical accounts of Dodgson stem from his diaries. Scholars who studied and published his diaries show that he recorded the first episode of migraine with aura in 1880. He described the experience as “moving fortifications” (3). Later episodes, where Dodgson fully lost consciousness, have raised the issue of possible temporal lobe epilepsy rather than migraines. Either way, he suffered from some sort of neurologic disorder that possibly involved micropsia (objects too small) and macropsia (objects too big). Characters in Alice have episodes of changing size, and original illustrations show the Red Queen to have an oversized head. This has led to the naming of a particular type of migraine aura, The Alice in Wonderland Syndrome (AIWS). A popular theory is that Dodgson had AIWS. The visual manifestations that he suffered might be the inspiration for the characters in the Alice stories.



Mastria, et al, published a clinical and pathophysiological review in 2016 that defines AIWS as “a perceptual disorder, principally involving visual and somesthetic integration, firstly reported by Todd, on the literary suggestion of the strange experiences described by Lewis Carroll in Alice in Wonderland books....



This syndrome has many different etiologies; however EBV infection is the most common cause in children, while migraine affects adults more commonly. Many data support a strict relationship between migraine and AIWS, which could be considered in many patients as an aura or a migraine equivalent, particularly in children. Nevertheless, AIWS seems to have anatomical correlates.” (4)

Several researchers have published case series of patients with AIWS in different populations. Lui, et al published a series of cases in 2014 in young children. The common visual symptoms involved micropsia, macropsia, metamorphopsia (distorted shapes), and teleopsia (objects appear farther away than they are). One third of the patients had infection, but over 50% had no associated conditions. Most resolved, but one third of the children had persistent symptoms (5).

Beh, et al has published an excellent retrospective chart review of AIWS in patients with vestibular migraine. His patients ranged from 17-63 years of age, more women than men. The most common symptoms were visual distortions (47%), then extra-personal misperceptions (41%)--but over a quarter of the patients also had physical sensory distortions (6).

Because of the rarity of the Alice in Wonderland Syndrome, there are no

large clinical randomized controlled trials. Treatment depends on etiology. Patients with migraine appear to respond to migraine preventative therapy. Patients with infectious causes may resolve after the infection clears. Temporal lobe epilepsy can be treated with specific medications, which also decrease the symptoms of AIWS. Patients with symptoms suggesting AIWS are strongly advised to seek the care of a physician with referral to neurology. The Alice in Wonderland Syndrome is best described by Alice herself: “Curiouser and curiouser!”

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Art and Medicine

by Douglas Hyde, MD

Without realizing it, my first exposure to art and medicine was through my wife, Alice. She is an artist, and her studies have included the works of, among others, Michelangelo and Leonardo da Vinci. Michelangelo Buonarroti studied anatomy at the Florentine Academy of Art (1). There, students studied drawings of cadavers and skeletons and watched public dissections by local physicians. At that time, the Church regarded dissection as desecration of the dead, only allowing the dissection of condemned criminals. Michelangelo dissected innumerable cadavers of both human and animal specimens. He developed an intimate knowledge of the human musculoskeletal system. At one point, he was accused of altering and inventing muscles for artistic purposes (2). Other successful Renaissance artists were equally intent on learning detailed proportions of the human body. Michelangelo's contemporary, Leonardo da Vinci, had comparable anatomical expertise. da Vinci studied with the anatomist Marcantonio della Torre at the University of Pavia. Da Vinci achieved great acclaim as an artist and sculptor but excelled in many fields, including engineering and architecture. He designed a 32 mile-long waterway linking Milan and Lake Corus. His drawing and ideas about helicopters, parachutes and tanks were strikingly prescient. These two great artists left us with detailed knowledge of the human body.

ORTHOPAEDIC SURGERY: CRAFT AND ART

Any artistic abilities that I possess come from my father and mother and are augmented by my wife (the true artist of the family). My father, Dr. Bob Hyde, was a man of many talents. He grew up in Waco, Texas and worked making cabinets in a lumberyard. His interests included woodworking, metal work-

ing, electronics and auto repair. Using his hands and mechanical skills, he was a respected orthopaedic surgeon, practicing in Amarillo for over 30 years. He put the manual skills that he developed in the operating room to work in his artistic pursuits. He made exterior stained-glass lighting, metal sculptures, and interior metal art.

Before we had digital x-ray machines, chemical labs in "darkrooms" were needed to develop the x-ray films. This process involved multiple tanks of chemicals such as emulsions and fixers. Silver was a prime component of the process, and the extra silver would precipitate to the bottom of the tank. The sludge collecting in the bottom of the tank was refined into pure silver. Using the technique of sand casting, my father made silver birds from this salvaged silver. Sand molds are a millennia-old process used by artists for casting sculptures of gold, silver, brass and bronze. The models for the castings were Lalique art glass birds collected by my mother. I think it is important to note that my father was first an orthopaedic surgeon and secondly an artist or craftsman (the difference between an artist and a craftsman is a subject of much debate) (3). In any case, my father always had projects in various stages of completion sitting on his work bench. My first stop at home, on returning from vacation or school, was to go to his shop to inspect the progress on his latest project. From him I learned about hand tools and their use. This was before the ready availability of electric power hand tools and, now, battery-operated hand tools.

ARTISTIC COLLABORATION: ALICE AND I FASHION OUR FIRST PIECES

My interest in art began with my father but flourished with the inspiration of my wife, Alice. Alice has a B.A. degree

in Art Education from the University of Texas in Austin, Texas, and a M.A. degree in Sculpture from West Texas A&M University in Canyon, Texas. Several years ago, Alice was approached by the Potter-Randall County Medical Alliance to design and create a sculpture to be donated to MediPark honoring physicians for Doctor's Day. Alice, having an interest in functional art, proposed a sculptural bench for the park. The Alliance agreed and thus began a ten-year (2004-2013) collaboration of art benches donated annually to commemorate Doctor's Day by the Alliance to the park and the surrounding hospitals, non-profit organizations, the TTUHSC medical school and the Potter Randall Medical Society office, all in the Harrington Regional Medical Center. Alice did what I consider to be the hard work of design and planning. Initially, using skill and knowledge garnered from my father, I did the mechanical construction of the sculptures. As the number of commissioned pieces increased, Alice did more of the construction, and I advised her on the mechanical stability of the project (see accompanying photograph). Also, Alice designed and painted four of the Quarter horses displayed throughout Amarillo. Dr. Richard McKay approached her to create a horse for his office. They collaborated on the design, with Dr. McKay placing a fiberglass cast on one of the legs. This horse, named "OrthoTex," is currently displayed in front of the Potter-Randall County Medical Society office (see accompanying illustration).

THE ARTIST BLACKSMITH

Prior to the Industrial Revolution, anything—ANYTHING—made of metal was made by a "smith;" a blacksmith (for iron), a goldsmith (for gold), a silversmith (for silver) or a whitesmith (for tin). If you were a cobbler, a seamstress, a woodsman, a farmer, a stonemason, or



anyone needing a sturdier implement, then you went to the village smithy, the blacksmith, and he made it for you. With the advent of the Industrial Revolution, the need for the tool-making skills of the blacksmith evaporated, and the number of smiths decreased. Throughout history, various grandiose people have wanted to leave a mark on the world. They have done this with huge buildings, works of art, sculpture and monuments. Artisans, including blacksmiths, were commissioned for these works. While the tool-making blacksmith has gone, the artist blacksmith remains. There is no need for metal armor, swords or straightening plow blades. But the artist blacksmith is still in demand (viz., Albert Paley, Nol Putnam, Samuel Yeltsin). The artist blacksmith still uses the old skills of heating a piece of iron (now steel) to the point that, using a hammer and anvil, he can mold it into a work of art. A knife show will present you with many beautiful pattern-welded (damascus) knives, none of which will ever whittle wood, cut up chicken, carve a steak or be used for anything other than display. They are works of art, or, if you wish, craftsmanship. They use centuries-old techniques to create unique patterns in the steel. A visit to the National Cathedral in Washington, DC. will expose you to the metal work of many great artist blacksmiths.

Picking up where my father left off, I developed an interest in working with my hands. Growing up in Amarillo with

an orthopaedic surgeon for a father, I followed him to the hospital. When I was old enough, I trained to become a surgical technician, passing instruments to the surgeons of different specialties. I remember working with Dr. Pat Oles and Dr. Bill Klingensmith as they were doing abdominal cases, distressed that I could not anticipate which instrument they would need. I told them that they would have to tell me what instrument they would be need to proceed with the case! This experience is to be contrasted with orthopaedic cases, where, from working in my father's shop, I understood what the surgeons were doing and could anticipate their needs. Thus, I went into orthopaedic surgery and continued to use my hands to repair and build.

Enjoying working with my hands, building and repairing odds and ends, I developed my hobbies. I first tried carpentry. (Why do they call orthopaedic surgeons "bone carpenters"?) I moved on to metal working using metal cutting lathes, vertical mills, shapers and other shop tools. I made functioning model steam engines and air motors. In early 2000, Alice, as a present, suggested I take a sports car driving course with my new car. I wasn't interested. Later, she saw an advertisement for a blacksmith course in one of her jewelry magazines, and I jumped at the opportunity. I chose a blacksmith school in Moriarty, New Mexico, and this opened up a new world for me.

CREATIVITY & ORTHOPAEDIC SURGERY: FROM THE HUMAN SKELETON TO ART NOUVEAU

As an orthopaedic surgeon, I can study an x-ray of a fracture repair done by another surgeon. If it is a simple fracture and a simple repair, I move on. If it is a complex fracture requiring a complex repair, I stop and study it to learn. Good surgeons are always practicing their "art." As the surgeon's skill and facility increases, they will accept and tackle more complicated cases. The techniques used for the repair, like the brush strokes in a painting or the fine detail shown in intricate jewelry, draw my eye.



Alice can rapidly design a metal sculpture but had difficulty with the construction. I can construct a metal object, but to call it art is another case. With Alice's help, I now design functional objects and then modify the design to make them more pleasing to the eye. I'm working to improve my skills as an artist blacksmith. What can I do to add interest to my original functional piece? What would catch the eye of the viewer? Traditionally, blacksmiths had to make all of their own tools--hammers of differing design to strike, anvils and tongs of various shapes and sizes to hold the hot metal. I now make all my own tools, and a few years ago I decided that I needed to start using all these tools that I've made. My venture into "art" began with a candle cup for a candlestick. I had made one cup and then made a second cup to see if I could reproduce my success. Well, what do you do with two candle cups... You make a more complicated candlestick. This is where I ventured into art. I needed to dress up my candlestick so that it would attract the eye of a viewer. Using the basic metal-working techniques that I had learned, I was able to manipulate cold steel into a somewhat pleasing form (see accompanying photo).



My design interests gravitate toward art nouveau. Art nouveau was a short-

lived art style of the early 1900's, often described as organic. It was followed by art deco, described as geometric. The shapes of bone and muscle are obviously organic. The lines, curves and exaggerated conformations of the different bones remind me of the art nouveau style. Beautiful examples are the radius, femur and the scapula. A short drive to Canyon, Texas and the Panhandle Plains Historical Museum will show you a beautiful example of similarities between art nouveau and the organic skeleton. The Paleontology Room contains a beautiful mount of a giant ground sloth. Study the animal's femur. It differs greatly from a human femur. In orthopaedics, there is an unwritten law we call Wolf's law. It basically says that the shape of the bone is dependent upon the forces acting on it. If form follows function, what muscles forces acted on this prehistoric sloth femur to cause the flowing art nouveau shapes?

Working to be an artist blacksmith keeps me interested in life. It pushes me to improve my skills. I am striving to express more complicated and intricate forms from the raw metal. Any physician or surgeon is aware of the beauty of the function and form of the human body. We all work to help maintain that beauty. When we see a new patient, we are looking at person out of harmony with their environment. It is up to us to shape, influence and restore harmony to that person, that is to say, to restore a work of art.

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Dr. Douglass Y. Hyde, MD was born at the Hermann Hospital in Houston, Texas in 1947 and came to Amarillo with his family in 1950. Except for his training and military service, Doug has lived in Amarillo for his whole life. He attended Tascosa High School and graduated from the University of Texas, Austin, Texas with a degree in zoology. Doug went to medical school at the Autonomas University of Guadalajara, and at Baylor College of Medicine in Houston. He then completed a surgical internship at Hermann Hospital (University of Texas at Houston) and an Orthopaedic surgery residency in the Greenville Hospital System in Greenville, South Carolina. He and Alice came to Amarillo in 1983. Doug says that "I was raised in the Orthopaedic and medical community of Amarillo. I have "old school" values about patient care."

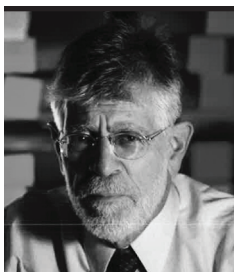
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The Art of Medicine Rounds: An extra-curricular humanities program that all medical schools could offer

by Alan Blum, MD

The memory of the revered physician Sir William Osler (1849-1919), who created the first medical residency program and valued bedside teaching as much as lectures, and the physician-educator Edmund Pellegrino (1920-2013), who helped introduce the teaching of ethics and humanities to the medical school curriculum, should remind all deans, faculty, and students that amid the rapid advances in medical technology, pharmacology and surgery, exposure to the humanities is crucial to producing compassionate doctors.

The American Association of Medical Colleges (AAMC) agrees: “The AAMC is committed to supporting the integration of arts and humanities,” its website proclaims. “Arts and humanities are essential to the human experience, and their benefits to medical education go far beyond joys and pleasures. By integrating arts and humanities throughout medical education, trainees and physicians can learn to be better observers and interpreters; and build empathy, communication and teamwork skills, and more.”

But is this lofty aim too little, too late? The call for greater humanities exposure for medical students comes at a time of steep decline in non-science requirements at universities and fiscal cutbacks in the humanities (albeit amid soaring increases for sports). The reality is that of the 22,712 matriculants to MD schools in 2022, just 897 (less than 4%) majored in non-STEM (science, technology, engineering, and mathematics) subjects in college, and just 250 out of 6,858 entering DO students held a degree in the humanities. This is in spite of the fact that MCAT scores and grade-point averages of non-science majors are just as good as those of STEM majors.

ROSE-COLORED GLASSES?

According to the rosy FRAHME report, virtually all of the 155 US and 17 Canadian MD-granting schools offer either required or elective courses in the humanities. (No mention is made of offshore schools.) Yet of the 13 examples of humanities offerings described in the report, only Northwestern’s and Vanderbilt’s are required for all students. The others are electives that may be reaching only a small, self-selected group of students with a prior interest in humanities.

Remarkably, there is no mention in the report of extracurricular activities open to all students and faculty (as well as allied personnel, staff, patients, and their families)--experiences that assure a year-round humanistic culture.

Some leading proponents of the humanities in medical education doubt that there is substantive buy-in for greater emphasis on humanities by deans, whose priorities are attracting research grant funding and clinical enterprise revenue. In response to my questions about the state of the arts in medical schools, Allen Peterkin, a psychiatrist at the University of Toronto, who has long been in the vanguard of introducing a wide range of humanities opportunities for medical students, wrote: “Full integration of the humanities in the medical curriculum has not been achieved at most schools. Many newer programs in the health humanities can be imperiled by new deans who don’t understand the field. We’re still focused on physician reflexivity and better patient care as outcomes. This has value, of course. But I’d like to see our discipline deepen and hire more artists and humanities scholars.”

THE TRANSACTIONAL REALITY

Tom Rosenal, a critical care physician at the University of Calgary and the founding president in 2010 of the Canadian Association for Health Humanities (CAHH), does not know of “a single medical education system--medical school through residency--that offers an integrated element of arts or humanities subjects across the full arc of the learner’s education. I consider the integration element to be important – all medical schools and residency programs exist in or close to cities which offer arts and humanities experiences. Even medical schools that offer such exposure beyond the pre-clinical years are rare. In Calgary, we do offer a Health Humanities elective in the clinical years, but only tiny numbers of students take this.”

Rosenal posits that the foot-dragging on the humanities by medical schools reflects our society’s belief that “technical expertise (as in STEM) is the most important and that doctoring is a purely technical competency without which errors are made and lives put at risk.” Scant government funding of the arts is one symptom, “but so is the emphasis on preparing students for the ‘job market’ as opposed to encouraging the development of citizens. I believe this is one reason that specialists are valued more highly than family doctors in the public perception and this is reflected in their relative incomes.” He bemoans universities’ emphasis on competency standards and testing, “which de-emphasize subjects that are harder to grade students in. So, in pre-med, students are acculturated to focus on what they need to know for ‘the exam.’ Those who can resist this world view do not even apply to med school.”

Then there is the aggressive competition by departments for curricular time, with the presumed aim of ensuring that students are up to date with the largely tertiary care advances in each field. One result, Rosenal decries, “is that students learn more about interstitial pneumonitis, which they may never again see in practice, than about intergenerational trauma, which likely affects half of their patients.” Another problem he sees in academia is that annual faculty reviews have yet to incorporate elements like “How well do you inspire reflection in your students or residents?”

A BREAKTHROUGH AT BAYLOR

The first extra-curricular health humanities program to which I was exposed (and in which I participated as a presenter of my sketches and stories of patients) was “Compassion and the Art of Medicine,” a school-wide luncheon series presented every year from 1989 to 2008 at Baylor College of Medicine. The brainchild of my fellow Baylor faculty member, ethicist Warren Holleman, PhD, “Compassion” filled a 300-seat lecture hall six times a year. “The purpose of the series,” Holleman wrote, “is to encourage our students and faculty to be more compassionate physicians and to recognize how attitudes and experiences affect the physician’s effectiveness and satisfaction. Students hear a lot of lectures on the science of medicine, but what they appreciate about our series is that we talk about the art of medicine and present the personal experiences of patients and physicians. We speak to the heart and not just to the head. Our speakers discuss the personal, emotional, social, and spiritual dimensions of illness and healing, and

our series enables students to know the person who has the disease, not the disease in the abstract.”

“Compassion” doubled as an elective course in the basic sciences curriculum. While the lectures were open to everybody, a cohort of students attended for course credit and remained for an additional hour of discussion. In preparation for the lecture, the students were assigned a relevant book on which they wrote a reflective essay. At its peak, 210 first year and second year students (around 65% of each class) were enrolled in the course, which made it the largest in the school. “This gave me great satisfaction,” recalled Holleman this spring, “because when I’d applied to launch the course, the curriculum committee gave only begrudging approval, with some members suggesting that these touchy-feely topics were not important and that students should focus on other things.”

Among the presenters were Penny Eastham, a speech pathologist, who shared her roller coaster ride through the health care system as a candidate for a heart transplant; Patti Wetzel, a family physician who became infected with the human immunodeficiency virus after an accidental needle stick, then went on to become a national spokeswoman in the battle against AIDS; Jan de Hartog, a celebrated Dutch author and World War II hero, who moved to Houston and helped train 500 volunteer nurses and orderlies; physician-poets John Stone and Rafael Campo; Richard Kogan, psychiatrist and concert pianist; Thomas Meloncon, whose play, “Before Time Runs Out,” a tribute to his sister who died of breast cancer, has been widely performed; and Garnet Coleman, a Texas state legislator who went public with his battle with depression and became an advocate for compassion for the mentally ill.

THE ART OF MEDICINE ROUNDS

Recognizing the need for consistent humanities enrichment at the University of Alabama College of Community

Health Sciences (CCHS), a small branch campus medical school in semi-rural West Alabama with 30 students in each of the 3rd and 4th years and a family medicine training program with 48 residents, our medical library director Nelle Williams and I implemented a monthly humanities event series, The Art of Medicine Rounds, in August, 2012. We were joined a few years later by medical librarian Andrea Wright. This interdisciplinary series has hosted more than 140 presenters from a myriad of disciplines throughout the university and from other medical schools in the US and Canada.

Throughout its 12-year history, The Art of Medicine Rounds has provided an extracurricular opportunity for all who study and work at CCHS to attend an event and share a light buffet supper on the first Thursday of each month that begins just after the close of office hours. The goals of the series include fostering a sense of community across the spectrum of students and staff and providing cultural enrichment in a region with no art museum and few offerings in the performing arts outside of the University of Alabama.

The interactive events have attracted a wide cross-section of faculty, staff, students, and residents. An average of 25 individuals attend each month. The format has three parts: a brief group discussion of an artwork; a 30-minute presentation or performance; and a question-and-answer session and discussion. The guest presenters at The Art of Medicine Rounds have come from a wide variety of disciplines, including music, dance, poetry, sculpture, art, ceramics, history, theater, film, storytelling, and philosophy. Some presenters have shared their personal experience of illness—deafness, cerebral palsy, an emergency admission to the intensive care unit. A personal highlight was my interview with Dr. Raymond Damadian, inventor of the MRI. As an avid reader of Panhandle Health since its first issue, I was delighted that Steve Urban shared the story of this remarkable journal and some of the his-



tory of medicine in West Texas as our guest presenter in June 2023.

In April 2020 the Rounds went virtual due to the COVID-19 pandemic. One consolation for the loss of dinner conversations was an increase in online viewers, both at CCHS and elsewhere around the US and Canada. We thus expanded our audience via Zoom.

I think there is a false dichotomy between a traditional, entirely science-based curriculum and a new, integrated science-and-humanities curriculum. If medical schools want to move beyond being technical trade schools, then they need to imbue their environment with the humanities, including the extracurricular. Right now, I surmise that most medical schools do the minimum

with humanities—enough to claim they are on-board with the FRAHME survey—and that there are few well-supported programs in the humanities at medical schools.

Regular extracurricular events open to all can help fill the gap. And every medical school can do this with a minimum of resources and personnel. Until then, I invite you to tune in via Zoom to our monthly Art of Medicine Rounds on the first Thursday of each month from 5:30 to 6:30 Central Time.

<https://libraryguides.cchs.ua.edu/art-of-medicine/home>

Alan Blum, MD, is a family physician and professor of Family Medicine at the University of Alabama School of Medicine,

Tuscaloosa, where he also founded the Center for the Study of Tobacco and Society in 1999. From 1987 to 1999, Dr. Blum served on the faculty of Baylor College of Medicine, during which time he spoke widely on the physician's role in ending the smoking pandemic. For his health promotion activism, he received the Surgeon General's Medallion, presented by Dr. C. Everett Koop, and the first National Public Health Award by the American Academy of Family Physicians.

Dr. Blum is also a self-taught artist, and his sketches and stories of patients have appeared in numerous medical journals. He is a frequent guest speaker in courses and conferences in the humanities. He is a longstanding supporter of Panhandle Health.

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We are grateful for the support of these organizations and anticipate another great year of serving the needs of our members. The purpose for Circle of Friends is to provide a valuable base of resources to assist the

physician in the business of medicine so their practice of medicine can improve.

This program has proven to be a valuable resource of services such as liability insurance, accounting, banking and much more. This year, we hope to expand the Circle to include services the physician may use in his or her personal life. Through this program, we can invite businesses serving physicians to support the Society and increase their visibility among its members. Corporate support contributes to the Society's ability to advocate and care for physicians and patients in Potter and Randall Counties.

The Medical Society thanks all of its supporters as it offers new opportunities to its membership. If your business is interested in being a part of our Circle of Friends, please contact Cindy Barnard at 355-6854 or e-mail prcms@suddenlinkmail.com.

TMA

RODNEY YOUNG, MD

TMA BOARD OF TRUSTEES





CONGRATS RODNEY YOUNG

The Potter Randall County Medical Society wishes to congratulate Dr. Rodney Young on his recent election to the TMA Board of Trustees.

Newly elected board member Dr. Young joined TMA nearly 30 years ago as a medical student. A recent member of TMA's Council on Science and Public Health, Dr. Young has chaired multiple councils and committees at TMA including the Council on Socioeconomics, Council on Medical Education, and the Committee on Continuing Education. He also was president of the Potter-Randall County Medical Society. He teaches at the Texas Tech University Health Sciences Center School of Medicine. Dr. Young is believed to be the first Amarillo physician to serve on the TMA board.



We are thrilled for all of our candidates' victories over the weekend! Congratulations to each of you!

There is one victory that we approach with mixed emotions—while we are thrilled to see Dr. Rodney Young become a member of the Board of Trustees, we are sad that it means that he will no longer be the Co-Chair of our Caucus. During his time in leadership, he provided a steady presence to all of us. Rodney treats everyone with kindness and respect while simultaneously bringing a smile and often a laugh to those with whom he interacts. Running this caucus is not for the faint of heart, and like most jobs in TMA doesn't come with many perks, but Rodney did it all for the love of TMA and for the love of medicine.

Rodney, thank you for your service, thank you for your commitment, and thank you for all that you have done. Congratulations on your victory, we know you will serve us well.

Sincerely,
The Lone Star Caucus Leadership & Staff



Ukrainian Medicine in the 21st Century: Preserving the Art of Healing in a Troubled Time

by Tetyana Anastassivna Khomazyuk MD & Tetyana L. Vasylyeva MD)



“Medicine is truly the noblest of all arts.”
- Hippocrates

In the twenty-first century, do we know the answer to the eternal philosophical question: what is medicine - a science, an art, or a craft? What was the opinion of the medicine patriarchs? Hippocrates considered healing to be a scientific art (1, 2); Galen, without abandoning this definition, considered medicine as a science, which, however, is unthinkable without creative objectives (3, 4). Today, only the unity of these approaches can bring success to medicine.

In our time of advanced technologies, the Internet, and the enormous acceleration of all areas of humanitarian activity, medical scientists make outstanding discoveries and innovations that revolutionize diagnostic approaches and treatment options, improve patient care, and enrich the way to a healthier world. Is there still a place for the art of medicine in the era of innovations and artificial intelligence?

Although modern technology has overwhelmingly invaded the field of medicine with computerization of every aspect (including electronic medical records, laboratory data entry, images, patients' monitoring systems, etc.), young physicians, while embracing that innovation, should be trained in the development of clinical thinking and the establishment of personalized connections to the patients. Those skills should not be lost in the overwhelming technological advancement. In this aspect, medicine is indeed an art, which, with a human touch, makes a patient feel better; building relationships

of trust with patients is fundamental to the ethical practice in medicine. Young physicians should be taught to adopt the ability to see, hear, and feel a patient's problems, formulate optimal management, and be empathetic to the patient's emotions and suffering.

Communication skills are a key to successful medical practice and a part of “the Introduction to Clinic” course in almost all medical schools, but substantial lack of time in clinical settings creates new challenges for communication between medical students, clinical teachers, and patients in medical schools (5). In many areas around the world, including Ukraine, this problem has been aggravated by wars, epidemics, pandemics, and natural disasters. At the same time, developing clinical observational skills remains an integral part of medical education and the basis

of medical art. The art of a careful physical exam should not be lost behind a computer screen. A physical exam makes a physician an artist, not a robotic part of a machine. Unfortunately, individual studies conducted among students and practicing physicians have identified an insufficient level of training in this area of professional skills (6), viz, studies from the Perelman School of Medicine at the University of Pennsylvania (7).

The art of making a diagnosis through careful observation has been an important topic in medical school education for centuries. Looking carefully at the patient and then converting these observations into diagnostics takes a long time to learn. The physical symptoms of disorders have been documented throughout history, sometimes unknowingly, by artists using careful observation and detailed



Figure 1: The first self portrait was done at the age of 29 (1840) and the second at the age of 46 (1861) years old. As one can see, the portraits reflect the spiritual development and mental suffering of one of the most outstanding fighters for Ukrainian freedom, but also his physical illness (rheumatic fever, heart disease).

brushstrokes. The works of talented artists from centuries ago provide potential insight into the pathologies of both the subjects and the artists. These works also offer a unique educational opportunity. As examples, Harvard and Yale Schools of Medicine started teaching the art of diagnosis by studying paintings with their students. A close, skillful analysis of a painting helps students gain experience in observation and the description of the observed (8). Many paintings display human diseases. Realistic portrayals of pathological features are especially common in Renaissance paintings from the 14th and 15th centuries (8). Ukrainian medical schools (including Medical Universities in Kyiv, Kharkiv, and Dnipro) have adopted similar approaches during their introduction to the clinic lectures.

Today, in the terabytes of informational space, it is extremely difficult for students to find their routes of professional interest in the medical specialties and not to miss the main thing, i.e., developing not only professional competencies but also emotional ones that form the doctor's personality in society. The largest libraries and e-techs in the world store fundamental academic publications about medical arts (9, 10, 11, 12, 13). They open ways for young medical professionals to find direction to self-education and self-improvement and to reflect on the dominant role of the doctor in the diagnostic process among the prevailing technologies.

Dnipro State Medical University has traditions of integrating centuries-old world historical experiences of teaching the art of healing into the philosophical concept of forming the critical clinical thinking of medical students. Our medical school has incorporated "diagnosing the canvas" into their curriculum. A thematic gallery of diagnostic symptoms and signs from great artists of all times and peoples has been created, allowing the expansion of the young physicians' educational horizons in the realms clinical

thinking, empathy, and mercy.

As an example, we want to share two self-portraits of Taras Hryhorovych Shevchenko (1814-1861), also known as Kobzar. Taras was a Ukrainian poet, writer, artist, public and political figure, and fellow of the Imperial Academy of Arts (Figure 1). His parents were peasants in a small village, which first was ruled by Poland, but later was annexed by Imperial Russia. Two of his younger siblings were born blind. In 1822, Shevchenko was sent to a school, where he was taught to read and write. His teacher, the precentor of the village church, was a harsh disciplinarian who had a tradition of birching the children in his class every Saturday (14). In his novel "Artist", Shevchenko described how, during this pre-academic period, he painted such works as Apollo Belvedere, Fraklete, Heraclitus, Architectural Bas-relief, and Mask of Fortune. His talent was recognized by prominent Russian artists, including Briullov (15). In May 1843, Shevchenko travelled to Ukraine, where he met many intellectuals, poets, and artists. He wrote: "Study, read, and learn for others..." (16). In 1844, Shevchenko wrote the poem "Dream", describing the social and national oppression of the Ukrainians by the Russian upper classes. He was arrested in St Petersburg in 1847 for composing poetry in the "Little-Russian language" (an archaic Russian name for the Ukrainian language) of "outrageous content". He was kept under the strictest surveillance, without the right to write or paint, and sent on a forced march from St. Petersburg to southwest Russia and later to one of Russia's worst penal settlements.

In the winter of 1858, Shevchenko finally returned to St. Petersburg and saw the African-American Shakespearean actor Ira Aldridge performing with his troupe. Using translators, the two became good friends over discussions of art and music. Shevchenko drew Aldridge's portrait and gifted the artwork to him.

After difficult years in exile, Shevchenko's illnesses (rheumatic fever, heart disease) took their toll on him (Figure 1, right image). Shevchenko died in St Petersburg on 10 March 1861, the day after his 47th birthday.

Ukrainian nationalism has deep and powerful roots. The legacy of Taras Shevchenko lives through the centuries, inspiring the freedom of many nations. George H. W. Bush, the 41st US President, invoked the words of Taras Shevchenko at the President's news conference on May 6, 1992. The Taras Shevchenko Memorial is a bronze statue and stone relief-adorned wall located in the Dupont Circle neighborhood of Washington, D.C. On the monument is this verse, composed by Shevchenko more than a century ago:

...

***Our soul shall never perish,
Freedom knows no dying,
And the greedy cannot harvest
Fields where seas are lying;
Cannot bind the living spirit,
Nor the living word,
Cannot smirch the sacred glory
Of th'almighty Lord***

In conclusion, medicine is the science of creative art, and the art of medicine is priceless in every nation. In Ukraine, despite the war, medical humanism, human values, and dignity predominate and are still very important in medical education.

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- Tetyana L. Vasylyeva, MD, PhD, Doctor of Medical Science (Ukraine), is a Professor in the Department of Pediatrics, Nephrology Section, at Texas Tech University Health Sciences Center in Amarillo, Texas. She has dedicated her life to improving children's health, both as a practicing pediatrician and as a researcher. Dr. Vasylyeva began her career in Ukraine, where the impact of environmental pollution on children's health was the major focus of her early research. Since she has come to the United States, the scope of her research has expanded to include diabetes, cardiovascular health, and acute renal injury secondary to nephrotoxic exposure. She is a member of the American Academy of Pediatrics and the American Society of Pediatric Nephrology.*

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The Eye of the Beholder: Aesthetic Medicine

by Donna Ayala, MD

WHAT DEFINES BEAUTY?

Our beauty standards are commonly dictated by those high up on the social ladder such as Hollywood actresses or, nowadays, popular beauty influencers on social media. But what makes them so attractive? How is beauty really defined?

It is a commonly-held belief that symmetry is what makes a person beautiful, specifically the number 1.6180339887--the golden number of Pythagorean theorem. And this number is important not just for facial beauty, but for beauty in the architectural, art, and design worlds as well (1). In regard to beauty and attractiveness, it is thought that the importance of symmetry is in fact evolutionary. According to a study on facial attractiveness (1), the subconscious human brain associates facial symmetry with gene integrity in a mate, i.e., in Darwinian terms, the more symmetry (aka beauty) someone has, the more reproductive fitness they have. This is not just seen in the human form, but across multiple species as well (2).

Is this really the only characteristic that determines beauty, though? It is my belief that, while the literature definitely supports the fact that the golden rule plays a role in our subconscious ideal of beauty, other factors such as complexion, aging, cultural standards, and trends of the time all influence what we perceive to be beautiful.

HOW HAS THE WORLD OF MEDICAL AND SURGICAL AESTHETICS CHANGED OVER THE DECADES?

In the 1920's to 1950's, cleansers, moisturizers and make-up were the primary method women used to portray their "attractiveness." In the 1960's and 1970's, women began using mud-masks

and enzymes to make their skin beautiful, and plastic surgery began to make its mark in the world of cosmetics. By the 1980's, microdermabrasion and resurfacing techniques appeared. The 1990's marked the era of "peptides, antioxidants, and retinoids", which were integrated into aesthetic treatments, and Botox started to gain prominence. By the early 2000's, laser therapy, LED light treatments and hyaluronic acid fillers had worked their way into medical aesthetics and paved the way for the booming industry of today (1).

Over the last 100 years, the pursuit of beauty has been an increasingly growing industry. Women have been the primary clientele for cosmetic procedures; in 2022 women made up approximately 94% of cosmetic procedure consumers, compared to their male counterparts (1).

With advancements in minimally and non-invasive cosmetic procedures, the number of consumers has rapidly grown annually, so that in 2020, minimally-invasive procedures accounted for almost 90% of all cosmetic procedures conducted by plastic surgeons in the United States alone (1). In 2023 the medical aesthetic market was worth "USD 34.6 billion and is expected to reach USD 102.2 billion by 2035" (2).

With the continued advancements in minimally and non-invasive procedures, this trend is expected to continue, making the pursuit of beauty – symmetry, improved complexion, and anti-ageing--more attainable.

OVERVIEW: THE TOP 4 MINIMALLY INVASIVE PROCEDURES

Taking the number one spot in minimally invasive procedures are neuro-

muscular injections, commonly known by their brand names Botox®, Dysport®, Xeomin® and Jeuveau® (3). These injections work by paralyzing muscles, and, while originally approved for strictly medical purposes such as neuromuscular disease, they are now approved to create human artwork in the pursuit of beauty (4). Initially used to prevent and treat wrinkles and signs of aging in the forehead, glabellar lines, and crow's feet, other uses now include treatment of the lower face, including jaw line contouring, marionette lines, and a gummy smile. Neuromuscular injections are used to create the appearance of fuller lips in a procedure called "a lip flip," and are employed in other parts of the body to create the appearance of a softer neckline (characteristically called "Barbie Botox") and the lower leg with calf contouring (4). The average duration before results wear off is 3 months but may be more or less depending on the patient's metabolism.

Second up are hyaluronic acid fillers such as Juvederm Ultra®, Ultra Plus®, Voluma®, Volbella®, Vollure®, Restylane Lyft®, Restylane Silk®, Belotero®, Bolvella® and Restylane® (3). Fillers restore lost volume primarily in the face, where they can be used to contour cheekbones, nasal bones, and jawlines as well as to smooth out wrinkles. Hyaluronic acid fillers are also becoming more frequently used to enhance the volume and shape of lips. Patients can get fuller lips, decrease the appearance of fine lines and wrinkles, correct asymmetry, and even change the shape of their lips such as improving the appearance of their philtrum (5). Fillers last on average 1 to 2 years before dissolving and needing repeat treatment. Results are immediate and, unlike some other minimally invasive treatments, a good outcome relies on an injector with a good eye for facial symmetry and proportions (6).

Number three is skin resurfacing. Methods include dermabrasion, chemical peels, lasers and microdermabrasion (3). Skin resurfacing focuses on removing the top layer of skin to promote new healthy skin growth. These procedures improve complexion by removing dead skin cells and promoting new collagen deposition; they also improve the appearance of wrinkles and help with the reduction of scars and blemishes to improve overall complexion (6).

Fourth in popularity for minimally invasive procedures are skin laser treatments and pulse light therapy (3). These procedures use wavelengths of light to treat skin pigmentation irregularities and improve overall complexion and tone (3). These procedures boast improvement in sun damage and age spots, acne and rosacea, wrinkles, large pores, and even offer skin tightening.

PLASTIC SURGERY IS ART: A COSMETIC OVERVIEW

A more invasive approach to the attainment of beauty is plastic surgery--everything from breast augmentations, mommy make-overs (which include any combination of breast augmentation, breast lift, tummy tuck, liposuction, and vaginal rejuvenation), to Brazilian butt lifts – where fat from other parts of the body (hips, back, and thighs) is taken to create a more “hour-glass-shaped figure” (7). Indeed, almost any other procedure to enhance any feature of the human body is possible.

Dr. Payam Jarrah-Nejad, a plastic surgeon, writes, “Surgery is not just science, it’s art too. Art has a big role in plastic surgery, and the surgeon’s artistic vision significantly affects their results.” When comparing Dr Jarrah-Nejad’s canvas to that of an artist’s medium, he states “My canvas is never flat. As a plastic surgeon, it’s always different. I have to know what I’m starting with, and I pay attention to my measurements preoperatively” (8).

A MODERN VIEW OF BEAUTY STANDARDS: HUMAN ARTWORK IN 2020’S

While the definition of beauty still starts with the golden rule of symmetry, modern catalysts for beauty trends lie not only in Hollywood but in influencers on social media such as Instagram and TikTok. The increasing social acceptance of sharing their cosmetic results allows these influencers and celebrities to publicly increase the drive for the general population to attain similar results. Unlike a few decades ago, however, when everyone might have gone for one specific look (i.e. “the Marilyn- Monroe” look), the variety of “post-pandemic cosmetic procedures signifies evolving beauty standards and reflects deeper changes in self-expression, identity and values” (3)– just another form of artistic expression.

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Art, Meditation, Medicine

by Nedha Kinnare, MS4, Radha Patel, MS4, Cheryl Erwin, PhD
Texas Tech University HSC, Amarillo and Lubbock TX



As philosopher and physician Paracelsus shared, “Medicine is not only a science: it is also an art. It does not consist of compound pills and plasters; it deals with the very processes of life, which must be understood before they may be guided.” One of the ways that medicine, as well as many other human ventures, can be appreciated is through the observation and creation of visual arts.

In alignment with this humanistic perspective, the Art in Medicine (AiM) elective was offered to first- and second-year medical students at the Texas Tech University Health Sciences Center School of Medicine in Lubbock, Texas, with the aim of crafting medical students into physicians who are able to practice both the science and art of medicine through understanding of the human form as expressed through the visual arts. This elective offered six lecture classes led by medical humanities professors, local artists, and physician-artists. The lecture sessions were followed by studio sessions where students applied the skills taught in the lecture through practice. Some of the topics and mediums included appreciation of beauty and medical photography, perspective-forming and glass mosaics, and, of course, patience and the art of observation. The art of observation lecture was paired with the activity of attending the local First Friday Art Trail. There students could practice open awareness and observation of different viewpoints as expressed by local artists, with the goal of learning more about the local community as well as about themselves.

AN EXERCISE:

Observation is, in itself, an act of creation and is an important skill for physicians. While most artists create artwork



Banksy. Girl with Balloon. (2002). London: Southbank Bridge

to convey a particular message to the viewers, physicians as viewers can add meaning to an artwork as they use their insights, personal experiences, and different viewpoints to observe the artwork.

A prime example of this is “Girl with Balloon” by Banksy, which can be both a sign of hope or a sign of despair, based on the viewer’s viewpoint. What do you first see or think of when you look at this art piece? What do you think a physician might see?

For a doctor who primarily has experience working with happy and healthy children, the “Girl with Balloon” might be a sign of hope as they see a girl reaching for the red balloon. However, for a physician who has witnessed childhood hardships, the image can be interpreted as a girl losing the balloon and can serve as a reminder of how the world forces children to lose their innocence. While the first impression of the artwork is almost automatic, the viewer/physician can develop different interpretations of the picture as they challenge their initial impression, read more about the work to

understand the artist’s motive, or move their attention to different aspects of the artwork to consider various reasons for the color scheme, shape composition, use of light, etc.

Observing visual arts helps us accept that the content of the artwork can’t change (just as many things in clinic remain beyond the physician’s control), but changes in perspective of looking at the work can help us reconsider human experiences, develop a sense of control, and create purpose and meaning (1). Like art, the practice of medicine is a combination of what it presented to the physicians (what is beyond the control of the physician) and what skills the physician brings to the clinic (what the physician can control). The practice of seeing multiple meanings through shifts of focus helps physicians to build the flexibility of viewpoint or versatility needed to see possibilities, including different sides of a conflict, and to find meaning in one’s work life, both of which can help one better navigate through personal and professional puzzles.

Since art depends just as much on the viewer's interpretation as it does on the artist's motive, both observing and making art can allow for a better understanding of the self as well. Going back to your initial interpretation of "Girl with Balloon" by Banksy, what particular feeling arose when you saw the artwork? Was it a sense of familiarity? What part of the piece caught your attention the most? Why do you think that is?

For some, "Girl with Balloon" is a sign of hope as they consider children to be hopeful or have children or grandchildren of their own who fill their day with happiness. For others, it may bring sadness. Questioning the self on why they saw the girl as losing the balloon or why the painting evoked sadness can help the physician become aware of issues that may be bothering them. It could be that they had a difficult case in the hospital where a pediatric patient was diagnosed with a rare condition. Many times, feelings that can't be captured in words can be conveyed or evoked by visual art, and creating or looking at such works can help one become more aware of what is troubling them or bringing them peace. A 2018 systematic review on creative arts interventions and their role in stress management and prevention by Martin et al. suggests that creative art forms, including visual art, encourage access and analysis of both conscious and subconscious emotions (5). Analysis of emotions that have been suppressed, either by choice or due to the toils of everyday life, can help physicians accept their emotions. By encouraging self-awareness and self-reflection of both the conscious and subconscious aspects of the self, observation of visual art can serve as a way to unite or connect the different puzzles within oneself, allowing observers to gather a better understanding of themselves. And it is only when people truly understand themselves that they can create the space to appreciate and understand others.

Welcoming new information (changing perspectives) allows us to have an

openness to new points of view. Having multiple interpretations is essential so that we can be aware of limits. Multiple perspectives allow us to consider other people's behaviors and to be more emphatic. A shifting in thought frameworks is important because we are often trapped by old mindsets. When we shift contexts, good things can happen: increased productivity, alertness to new information, and focus on details. Shifting these contexts improves individual's tolerance for uncertainty, and a change in context can lead to renewed energy (4).

For example, let's consider what physicians expect their roles to be: some may think that their job is to heal patients, whereas others may consider it to cure patients. There is a difference between healing and curing. When you heal you focus on enabling patients to accept their diagnosis; you emphasize understanding. It is an unrealistic expectation for doctors to cure patients in all circumstances (3). If physicians consider their goal to be to promote healing through widening perspectives of patients, this will help physicians feel that they are accomplishing more, because their perspectives of the roles of doctors also changes. Many doctors become disempowered by the profession because of the context and structure of our organizations. Emphasizing the importance of healing can change doctors' perspectives for what to strive for in the profession (6). This enables doctors to focus on the quality of life of their patients and what patients' wishes are, rather than only getting their patients' vital signs back within normal limits.

Given the rigors of the medical field, adopting multiple perspectives (such as the importance of healing rather than curing) may dramatically reduce burnout, conflict, and loss of meaning. Dr. Hans Seyle summarizes the power of perspective with this quote "it is not the potential stressor itself but how you perceive it and then how you handle it that will determine whether or not it will lead to stress" (2). The skill of perspective-changing

takes practice, and focusing on art can be one avenue to strengthen this ability.

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Exploring the Synergy Between Ancient Persian Art and Medicine

by Ardalan Naghian, MS4, TTUHSC School of Medicine & Basak Basbayraktar, MD, PGY2, Internal Medicine TTUHSC Amarillo



THE HUMAN BODY AS A VESSEL

“Medicine is the science by which we learn the various states of the body; in health, when not in health; the means by which health is likely to be lost; and, when lost, is likely to be restored. In other words, it is the art whereby health is concerned and the art by which it is restored after being lost.” -Ibn Sina

As medical practitioners, we often overlook the physical attributes presented to us by patients. The human body serves as a vessel of art through visual, auditory, and arithmetic displays of information. We interpret these presentations to assess a person's health, which guides our medical decisions. Interpretations of bodily signs thus cue our ability to improve individuals' health. Today's state of medicine widely diminishes this observational aspect of the field. We rely deeply on laboratory values to represent patients' health and to guide methods of treatment. Technological advancements in diagnostic and therapeutic management give us the ability to quantify medicine more than ever. Certainly, measurements provide meaningful and accurate data; however, we must not forget the clinical presentations available to us with every encounter.

The availability of lab values must not be taken for granted. Not too long ago, medical practitioners relied solely on visual and auditory cues to form diagnoses and treatment options. How does a patient physically present upon inspection? What does a patient sound like? What does a person feel like? These are essential questions that provide substantial information that may not be apparent through laboratory results and vital signs

alone. These fundamental forms of physical representation serve as the premise for this article. In this article, I will dive deeper into the origins of some of the first visual depictions of human medical systems, diagnostics, and treatments, used through ancient Persian medicine.

THE FUNDAMENTALS OF PERSIAN MEDICINE

Before exploring the relationship between Persian medicine and art, we need to understand the core principles that drove ancient Persian medicine. This section discusses the fundamentals that helped navigate practitioners' diagnostic and treatment practices.

The premise of Persian medicine relies on a holistic approach to an individual's health. This form of personalized medicine emphasizes the interconnectedness of body, mind, and spirit (1). An imbalance among these three elements defines the presence of an illness. Ancient practices aimed to treat individual body parts as well as the body, combining prevention, wellness, and therapies similar to those of present-day medicine.

Ancient Persia went through various scientific, religious, and cultural revolutions. With each period, different formats of medical knowledge were constructed and passed down through the generations. The earliest documentation of Persian medicine dates to the pre-Islamic period of the Persian Empire, around 8th century BC (1). Subsequently, the 7th-century Arab invasion marked the end of ancient Persian medicine and a transition to the Islamic period of medical knowledge.

After the Islamic revolution, Persian medicine transformed, incorporating

evidence-based practices from Greek, Arabic, Chinese, Byzantine, and Syro-Indian cultures (1). Many teachings from the Islamic period are well-documented through medical manuscripts, which included visual representations of the human body. The prominent physician and philosopher Ibn Sina, also known as Avicenna, authored the “Canon of Medicine,” referred to as the medical encyclopedia of Persian medicine (2). His work is filled with intricate illustrations in vibrant colors and patterns, detailing human organs along with their interconnected anatomy and pathologies.

MINIATURES AS A VESSEL OF MEDICINE

Traditional Persian medicine exists at the intersection of visual arts and medical science. In many visualizations, we appreciate the artist's rendition of the body, mind, and spirit. More so, we can observe the interconnectivity between these elements represented through various illustrations, writings, and miniatures.

After the Islamic revolution, Persian artists adopted the use of miniatures, defined as “any work of art produced in a size much smaller than the normal size for that type of work” (2). Throughout the 13th century, the genre of miniatures dominated Persian art. Introduced by Chinese culture after the Islamic invasion of the Persian Empire, miniatures allowed artists to record large numbers of visualizations in a single book, making them easily accessible and portable (3). Not long after the introduction of miniatures into Persian culture, medical practitioners began to incorporate miniatures for medical use.

Active around the 14th century AD, Mansur Ibn Ilyas is widely regarded as

one of the first to illustrate the human anatomy of various bodily systems. Mansur recorded his illustrations in his color atlas titled *Mansur's Anatomy*. In addition to bodily systems, he was one of the first practitioners to visualize the pregnant female body (3). His visual depictions were attempts at using hand-drawn arts instead of descriptive text to describe the human body. Previous iterations of Mansur's work described individual organs and their respective anatomy. As his work progressed over the years, the connectedness of the body was apparent through a systems-wise approach, congruent with the overarching principles of Persian medicine. Mansur's *Anatomy* included five body systems: venous, arterial, nervous, muscular, and skeletal. Through various depictions among his miniatures, Mansur color-coded various systems, accordingly allowing for clear distinctions of organs based on their respective bodily systems (3).

In Figure 1, Mansur's drawing depicts a human figure in a supine position, as if being examined from above. This specific miniature portrays a pregnant individual with a fetus enclosed in a placenta. Some inaccuracies are present in the miniature, including the depiction of the placenta as part of the gastrointestinal system, which

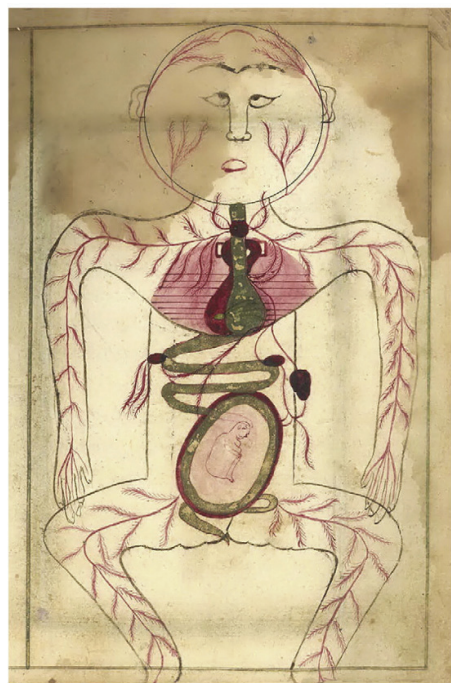


Figure 1



Figure 2

is colored green. Subsequently, in Figure 2, we see visualizations of the gastrointestinal and cardiovascular systems. Each body system is color-coded: the gastrointestinal system is shaded yellowish-gray, including what appears to be the esophagus, stomach, and intestines, while the cardiovascular system is marked in red, featuring the four chambers of the heart and the vessels spread throughout the rest of the body (4). Many of his miniatures include labels in Persian, further describing the artistic representation of the systems. Mansur's *Anatomy* has been significant in preserving human medical knowledge through the pre-Islamic and Islamic eras of Persian history.

The intertwining of artistic cultural roots with the practice of medicine led to a flourishing of these depictions. Ibn Sina divided his *Canon of Medicine* into five separate writings: 1. Medical and physiological principles, 2. Substance, 3. Diagnosis of single body parts, 4. Diagnosis of multiple body parts, and 5. Formularies of compound medicines. Each book included visualizations pertain-

ing to its subject matter (5). Miniatures were not limited to anatomical representations; various artists also illustrated diagnostics and treatments. Surgical tools, herbal medicines, and other forms of treatment were depicted with instructions for their use.

Throughout this article, we have described some of the medical visualizations by Persian artists. While many of the depictions may seem elementary compared to today's advancements, we must appreciate the gradual discoveries made without current modalities of exploration. With the available resources, medical practitioners were able to represent human anatomy, diagnostic tools, and treatments to some accurate extent. The progression of medical knowledge has taken multiple forms. Persian creations were only one addition to the contributions by artists. Numerous other cultures created their own forms of artistic depictions, allowing us to better treat the patients we aim to heal. Art allows us to continue the proliferation of medical knowledge. We utilize art to provide

valuable information on patient illness in addition to the healthy state we expect. After all, medicine is an art, and the patient serves as a canvas for the various ways the human body may present.

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The Art of Chinese Female Medical Dolls

by Paul Tullar, MD

Chinese female medical dolls were said to have been necessary when a highly developed sense of female propriety existed in China (related through Confucian philosophy), beginning from the Han Dynasty (202 BCE- 220 CE), but especially from Ming (1368-1544 CE) and Qing (1636-1913 CE) Dynasties and continuing through at least the late 1800s. Women were not to be seen unclothed by a (male) physician and were not expected to describe or point to parts of their own anatomy, due to modesty. Women with medical complaints were expected, at most, to come to the physician with a chaperone (most likely a male member of her family, though a female member of the family might have to substitute as chaperone), to sit or stand behind a screen, and to extend a hand past the screen to point to the medical doll. Most often, the woman was expected to be silent to preserve her modesty, having the male family member describe and/or point to the anatomical doll to describe the illness.

These medical dolls were made of ivory, wood, bronze, amber, jade, or even lapis lazuli, though most surviving examples are made of ivory. The doll was usually 75 mm. (about 3 inches) to 155 mm. (about 6 inches) long, and all were carved in the same pose: in a reclining position, with one arm extended up, most often supporting the head, and the other arm extended and draped over the body. The doll would be carved naked, except for bangles on the wrists. If the doll were depicting an adult woman, it would have shoes (or bound feet) on for modesty, with her hair carved as tied up in a bun. Children's female medical dolls would be carved with their hair woven into two braids.

Both the front and back of the doll were carved to resemble the human female form, so that the female patient (or chaperone) could turn the doll over and point to the lower back if that is where the pain was. If headache were the complaint, the female patient would point to the doll's bun. If menstrual pain, the female patient would point to the doll's lower abdomen, where the menstrual cramps were perceived. Typically, the doll would be depicted reclining on a bed or couch made of wood, often with a silk shawl or a woven throw underneath the doll. Wealthy Chinese women might well have their own medical doll, which they could take to and from the doctor's visit, while poorer women would have to make do with the doctor's doll.

It is said that "with language comes culture," and, during this time, only men were allowed to become physicians. No women were allowed to practice medicine in China until 1879, when Canton

Missionary Hospital became the first to admit women to their medical school classes. This change was not due to a desire for gender equality among physicians, but rather a belief that men should not be looking at or touching female patients.

Though men and boys had no prohibition from being disrobed in front of a doctor, traditional Chinese medical practice focused on diagnosis from a distance, and the only physical examination undertaken might be taking the pulse at the wrist--in the case of the female patient, to be covered by gauze. It was felt beneath the doctor's skills to examine the patient by touching or pressing; the "best" traditional Chinese physicians should be able to ascertain the diagnosis by history, gender, age, and affected body part, applying their knowledge of flow of energy ("Qi" or "Chi") or relationship of the "Five Phases" (such as 'Wood', 'Fire', 'Water', 'Metal', and 'Earth') to come up



Figure 1: Chinese Ivory Diagnostic Doll

with a diagnosis. Various herbal medicines, massage to redirect the body's Qi (Chi), acupuncture, and specific exercises (Qi Gong) were the usual treatments prescribed. Thus, it was thought to be time-saving for either men or women to describe the malady to a servant or family member, while pointing to the anatomical doll, and just send the servant or family member with the anatomical doll to the traditional medical practitioner. The servant would point to the anatomical doll and describe the malady, and the practitioner would make the diagnosis and prescribe the corresponding treatment.

If the traditional practitioner did ask to see the patient, again he would, at most, examine the patient's pulse at the wrist. For women, this would be through a small opening in the examination room screen with the wrist covered by gauze, while for men, the practitioner could just see the male patient, and palpate their pulse at the wrist. For specifically female functions such as terrible menstrual flow or childbirth, female traditional helpers (midwives) were the only alternative.

For completeness, there is another diverging opinion, with another explanation for these dolls (2). Some modern Chinese feel that, though anatomical dolls were used for medical education and practice (especially for acupuncture), most were upright, highly stylized male sculptures with genitals omitted or covered, supplemented by drawings of male body images with acupuncture sites (See images 3). These exponents note that the female reclining dolls come primarily from the later Ming and Qing Dynasties (see dates above) after contact and trade with the West had begun. A story of the use and purpose of the carved, mostly nude female figure came with the doll when it was exported, piquing the interests of western physicians and medical museums. These modern Chinese interpreters feel that most of the production facilities for carving these images were for Western interests in "the exotic East," for export only. Since these surviving exam-

ples are all similar, all reclining "in a sexually suggestive pose," and since surviving examples are today mostly in the West, outside of China, the reason for their existence may have been for Western consumption, rather than strictly for Chinese medical practice. The opinion of these scholars is that, since traditional practice was to allow the male chaperone to do all the talking, no doll would have been necessary.

Could both have been true? Were some of these "medical dolls" indeed used over the centuries under Confucian standards of modesty, for the described medical purposes? Some Chinese literature suggests that some parts of the story are accurate. For instance, In Yi Xue Ru Men (Introduction to medicine), a Ming dynasty medical book compiled by physician Chan Li (exact dates unknown), described this procedure for diagnosing women patients:

"If diagnosing a woman, a close relative must be asked of her symptoms and her colour of tongue. If her illness is severe, examine the patient across the curtain of her bed; If her illness is mild, examine the patient across the curtain of



Figure 2: Chinese Medical Doll for diagnostic purposes of carved ivory. 19th Century

her bedroom door. A piece of gauze must cover her hand (during the pulse examination); if her family is poor, the doctor will prepare the gauze himself."

Cheng Congzhou (exact dates unknown), a doctor in the late Ming dynasty, documented a similar process where a male family member acted as a chaperone and interpreter of the woman's complaints, passing messages between doctor and the female patients, since no direct conversations were allowed between doctors and women patients during that time (2).

Perhaps, production later increased in those Chinese provinces with more

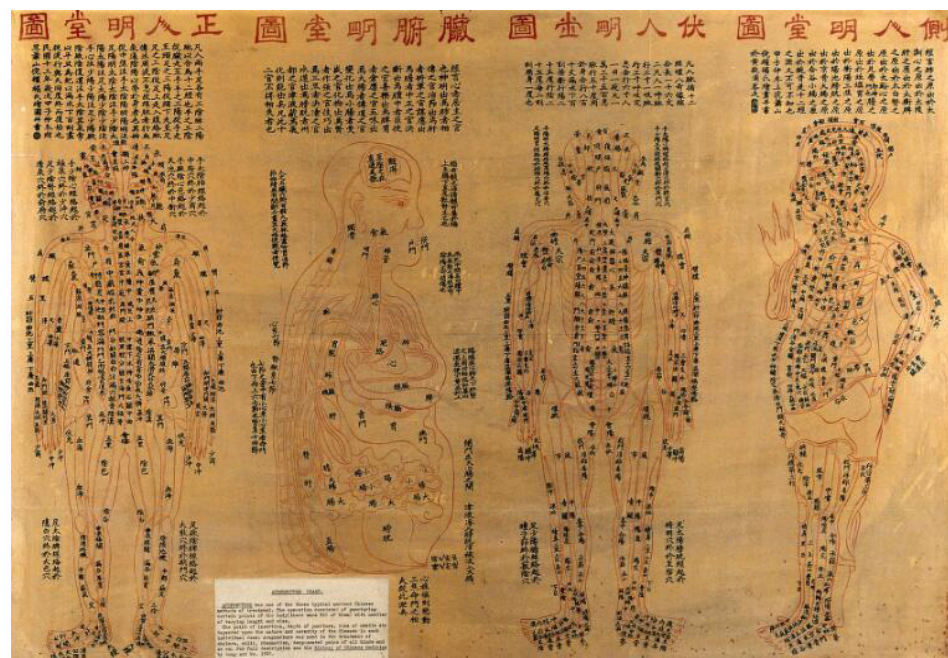


Figure 3: Ming Tang Tu (The illuminated Hall Chart)
The human body, showing a circulatory system and acupuncture points: four figures. Colour woodcut by a Chinese artist. Wellcome Collection.

contact and trade with the West, (i.e., Zhangzhou and later in Canton) during the Ming and Qing Dynasties, with an eye on the export market.

The dominant interpretation is that of the use of the “Chinese medical (female) doll” was by and for women’s communication with the physician, removed at some distance, while maintaining the woman’s modesty. The minority opinion is that these were produced for export to the West, with a story that served the seller’s purpose, i.e., to sell these objects to students of medicine from the West. Under the guise that the dolls had a legitimate medical purpose, these purchasers from the West were thus free to satisfy their own prurient interests.

Some examples of these historic medical dolls exist in a few museums within China, while far more exist in collections in the West. These works of art did originate within China as far back as the 1500s, even if most surviving objects come from

the 19th century. Even historical works of art may be obscured in modern interpretations.

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Images:

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Dr. Paul Tullar grew up in Houston, Texas. He attended undergraduate school at Rice University and graduated from medical school at the University of Texas in San Antonio. He completed an obstetrics and gynecology residency at the Methodist Hospital in Dallas. Paul came to Amarillo as a faculty member at Texas Tech SOM in 2007. Dr. Tullar continued to take care of women, deliver babies, and teach medical students and residents until his most recent retirement in 2020.

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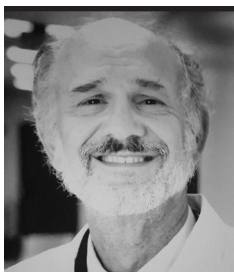
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The Art of Dr and Mrs. Bill Price at the Amarillo Museum of Art

by Steve Urban, MD, MACP

Physicians can participate in the world of art in many ways: simply as appreciators of art, as artists themselves, or as connoisseurs and collectors of art. In this issue of Panhandle Health, you will find examples of all three. In this article, though, I want to recall the astonishing accomplishments of our friend Dr. Bill Price, who (in partnership with his wife Jimmie Dell) amply fulfilled the “connoisseur and collector” category. Because, somehow--while taking ER call and overseeing a very busy practice--Bill managed to build spectacular collections of art in three separate realms—Japanese woodblock prints, Middle Eastern textiles and Southeast Asian statuary. As the art critic William Russell Pickering wrote, Bill had “one of the most unusual and successful careers ever enjoyed by an American collector of art” (1). And, while Bill and Jimmie Dell gifted some of their collection to the Birmingham Museum of Art in Bill’s hometown, a significant portion of this art is available for your viewing at the Amarillo Museum of Art on the Amarillo College campus. In this short essay, I want to give you an idea of the scope of accomplishment of Dr. Bill Price.

REMEMBERING BILL PRICE

Dr. Bill Price was a paragon of the Panhandle medical community, from the time of his arrival as the second board-certified neurosurgeon in Amarillo in 1955 until his death at the age of 99 in 2022. For a fuller account of his training, medical practice, and achievements as a neurosurgeon, you may want to have a look at my account of an interview with him that was published in the Fall 2016 issue of Panhandle Health (available at www.prcms.com). A brief summary follows:

Bill grew up in central Alabama and attended medical school, first at the University of Alabama (which had only a 2-year medical curriculum at the time) and then at Vanderbilt. He pursued training in general surgery and neurosurgery at the Medical College of Virginia, the Lahey Clinic in Boston, and finally at the University of Illinois in Chicago. In Chicago, he studied under Dr. Percival Bailey, who had trained with Harvey Cushing and was famous for publishing the first modern classification of brain tumors. After residency, Bill served in the 227th neurosurgery detachment of the 8th U.S. Army for 2 years, including a year in Korea as a battlefield neurosurgeon. In 1955, Bill settled in Amarillo, where he saw patients and operated for 47 years (plus 8 more as a consultant in the clinic).

JAPANESE WOOD BLOCK PRINTS

Bill’s first foray into serious art occurred when he shipped out to occupied Japan in preparation for his year’s service in Korea. A fellow officer took him

to the shops and stalls of Tokyo, where he bought his first prints. Bill said that he didn’t know anything about art at the time, but clearly he had the indefinable gift of taste, because even his first purchases (of the 19th century ukiyo-e artist Keisai Eisen) were of high quality. After his combat duty (“a year and two days”, he told me), Bill spent another year in Tokyo at the main U.S. Army hospital where he served evacuees from the front. In his free time, he frequented the galleries and stalls. By the time he shipped back to the U.S., Bill owned 500 wood block prints.

Japan has a long history of art, dating back to pottery from the first centuries BCE, but early pictorial art focused on subjects from Buddhism (which came over from Korea in 540 CE) and was strongly influenced by examples of Chinese calligraphy and landscape painting, often in monochrome. Bolder subjects and the exploration of polychrome color came as warlike shoguns wrested power from the secluded emperor and



Hiroshige and Toyokuni, “Eastern Genji, a Garden in Snow”.
Amarillo Museum of Art

his court in Kyoto. Wood block prints, which are often considered an archetypically Japanese form, however, were not produced until the shogun Tokugawa Ieyasu moved the capital to Edo (now Tokyo) in 1603. Simple monochrome woodblock prints of low-life scenes (the so-called “floating world” of courtesans and Kabuki actors) became popular with the merchant classes. In about 1765, the pioneer artist Harunobu began to produce full-color prints of increasing sophistication, and for the next 100 years this medium dominated the Japanese art scene. These prints were produced by some of Japan’s greatest artists. Bill’s collection included works by Utamuro (several of whose “big-headed” portraits of beautiful courtesans are in the collection), Eisen (a follower of Utamuro), Hiroshige (a wonderful portrait of nature) and finally, the most famous of them all, Hokusai (whose portfolio of 36 views of Mt. Fuji are popular in the U.S. even today).

People think of modern prints as quick, mass-produced items, but Japanese wood block prints required arduous technique and close cooperation between the artist and an expert wood carver. Each color had to be carved and inked separately; subtle combinations and gradations of colors created intricate shading. The artist had to be very careful that the pages were precisely aligned one with another. The whole process was done by hand, one at a time and, by the time of Hiroshige and Hokusai, had reached a level of perfection. When these prints became available to the West (after the Meiji restoration in 1868), impressionists such as Manet and van Gogh were deeply influenced by their technique and subtlety. You can view several of these prints on permanent display here in Amarillo; there are over 150 in the AMoA portfolio.

MIDDLE EASTERN RUGS

In the 1960’s, Bill Price developed an interest in Navajo rugs and textiles; this led into a fascination with middle eastern carpets. He began with textiles from

the Caucasus region (now in southern Russia), but his interest spread to rugs from Turkey, Iran, and Turkmenistan. He became a preeminent collector of Turkish rugs—especially those of the Ladik school. Bill served as a director of the Textile Museum in Washington DC (one of the most important textile museums in the U.S.) as an active board member for 10 years and as an honorary member for 17 more. In 1978, he was invited by the Shah of Iran to participate in the grand opening of the Carpet Museum of Iran; he spent over 2 weeks in Tehran, with the world’s greatest patrons of this ancient art. Bill joked: “I had more rugs than the Shah had!” Before he started donating his textiles to museums, Bill had hundreds of antique oriental rugs--“one of the finest and most extensive collections of Islamic carpets ever assembled in the Western hemisphere” (1). 75 of these rugs were part of the Price gift to the AMoA.

Carpet making has been practiced since Neolithic times, but studying and collecting carpets is limited by their perishability. Although a few samples have been preserved (including the Pazyryk carpet, which had been frozen in Siberia since in the 5th century BC), most of our knowledge of early carpets comes from written sources and depictions in paintings. Early rugs were pileless (the pile is the knotted string that projects upward and gives the rug its thickness) like modern kilims; pile rugs were probably an innovation of the Middle East or the Caucasus. Prayer rugs were a particular specialty of the Islamic world; from an early date they were used for the five daily prayers. The Seljuk Empire (in 13th century Turkey) and the Safavid Empire (in Iran from the 16th century on) were noted for their rug production, the latter accounting for the common term “Persian” rugs. Many of Bill’s rugs were made in Turkey. He was especially proud of his Ladik and Melas rugs, produced by individual weavers in small towns in central Anatolia, famous for their weavers since the 12th century.



**Prayer Rug, Melas Turkey Ca. 1885
Amarillo Museum of Art**

Islamic prayer rugs have a common pattern—a central rectangular area, often containing lancet-like figures that are used to point the way toward Mecca. This mihrab is surrounded by borders with floral and geometric patterns. The best rugs were made of wool, dyed with natural pigments, and woven by hand on small looms. The rugs of various workshops are subtly different, and their value relates to their knot counts, the thickness of the pile, and the artistry of the individual weaver. Knowing how to evaluate rugs is an art in itself, and Bill was an expert in this field. He was often called upon by Christie’s or Sotheby’s to help evaluate their carpets prior to sale. Again, you can see several fine examples of Bill and Jimmie Dell’s collection on display at the Amarillo Museum of Art.

SOUTHEAST ASIAN STATUARY

Most of the items on display at the AMoA stem from the last phase of Bill’s career as a collector, after he had backed into the world of Southeast Asian statuary almost as an accident. In 1979, he was invited to Delhi, India to view and assess some Indian rugs. Civil unrest at the time prevented him from having access to the rugs, so he decided to shop around in the

art markets of Delhi—and a new area of interest developed.

Bill first focused on Gandharan art, the product of a remarkable culture that flourished in what is now Northern Pakistan and Afghanistan (near today's Peshawar). This area was conquered by Alexander the Great in the 4th century BCE, and some of its statuary seems to have been an amalgam of Greek and Indian influences (for instance, some images of Siddhartha Gautama look very much like statues of Apollo). Bill's holdings initially focused on Buddhist art, usually serene images of the Buddha or of a bodhisattva; Gandhara was an important conduit for the passage of Buddhism into China and the far East. His tastes in the art of Southeast Asia soon broadened, however, and at the AmoA you will see a variety of statues, ranging in time from the 2nd to the 20th century, in geography from India to Cambodia and Indonesia, and in material from sandstone to bronze. Many of these works are Buddhist, but Hindu subjects—gods, goddesses, and

their often-buxom attendants—are also represented. The Amarillo Museum of Art was the recipient of about 20 statues, most of which are in the permanent display.

THE ENDURING LEGACY OF BILL PRICE

When I came to Amarillo in 1981, I knew Bill Price as the senior neurosurgeon in town, a dedicated doctor who would see your patients without complaint (and without inquiring about their insurance status) at any of the 3 hospitals. When he spoke about medical issues, people listened. Only later did I learn of the true depth of his interests and capabilities. Bill truly enjoyed his art; he once told me that he never bought artwork as an investment—only for enjoyment. The long and incredibly productive life of Bill Price can show us that art and science, taste and technical expertise, can coexist, each enhancing the other. And you can enjoy some of the fruits of his labor and expertise any time the Amarillo Museum of Art is open.



Shiva as Lord of the Dance Tamil Nadu, 17th-18th century
Amarillo Museum of Art

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Art and Medicine vs Medicine and Art: The History of Art (and Illustrations) in Medicine

by Rouzbeh K Kordestani, MD, MPH

“One might begin with art but would end with medicine; or start with medicine and find oneself in art...” Aristotle, 4th century BC

Art and medicine are intrinsically related, and both seem to meet in the study of the human body and form. They do much to complement one another and, as such, can be hard to separate. This is best seen in medical illustrations used for education in medicine and surgery.

Gross anatomical drawings have been found dating back 30,000 years. However, human anatomical dissections have been around only since 300 BC. Prior to the Ptolemaic dynasty in Alexandria, dissection of corpses and the human body was strictly forbidden. The early Greeks, the Egyptians and even the Chinese considered the human body to be sacred, housing the soul. Any dissection was considered unholy and against the will of God.

ALEXANDRIA AND THE REIGN OF PTOLEMY I

The reign of King (and Pharaoh) Ptolemy I in Alexandria in ca. 300 BC changed the course of medicine. During his reign, Ptolemy I decided that Alexandria should become a place of human inspiration. To this end, he ordered his subjects to collect all the books in the known world. He personally asked other rulers to supply their books with all their written knowledge to Alexandria in an effort to make his capitol city a center of learning. In this setting, poets and scientists flourished. Additionally, in the realm of medicine, dissection of the human body was not only allowed but was routinely prac-

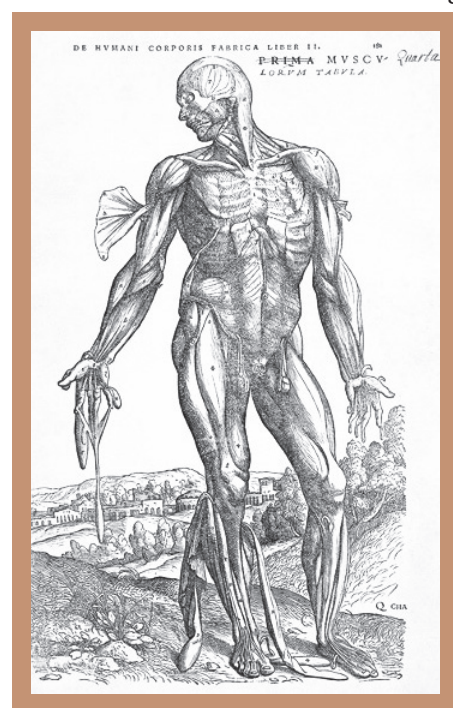
ticed. During this period, two of the most famous medical anatomists were Herophilus and Erasistratus. Of the two, Herophilus was very much devoted to the study and direct knowledge of the human body. Some denounced him for his avid devotion to anatomical dissections; however, in the setting of Alexandria, he flourished. With his knowledge based on exact dissections, he published his observations in “On Dissections”, his seminal work. Until then, no such detailed anatomical dissections of the human form and body had existed. Because of this publication, many consider Herophilus as the father of modern anatomy.

Through “On Dissections” and his other writings, Herophilus did much to further the understanding of human organ systems. His book and his other writings were soon disseminated throughout the world. Centuries later, another great scientist rose to prominence. Galen (129-216 CE) took up the mantle left behind by Herophilus with his own studies of anatomy. Galen was a respected physician, but much of his knowledge and conclusions were theoretical. His anatomical studies, based on dissections of Barbary apes and observations on the bodies of dead gladiators, often proved erroneous. He focused instead on the theory (not original with him) that disease processes were based on an imbalance of the four humors—blood, phlegm, black bile, and yellow bile. Galen became such a revered figure that, for over a thousand years, medical treatises were just scholarly explications of Galen’s works. No important advances in the study of human anatomy were made until the dawn of the Renaissance.

THE RENAISSANCE: FROM GALEN TO LEONARDO DA VINCI TO VESALIUS

While Galen was widely respected, his theories of humors and their imbalance began to be questioned. By the 14th century, there was a new focus in Europe, one of medical renaissance and “rebirth.” As medical dissections and anatomical illustrations were published, the physicians and surgeons of the age began to reject Galen’s theories. Anatomists and surgeons could see what was before their eyes and began to question Galen and his “stories.”

The Renaissance gave birth to artists like Raphael, Michelangelo, and Leonardo da Vinci. All of these artists realized that medical dissections provided a new and more accurate understanding of the human form, and these new observations informed their art in new and startling



A woodcut from *De Humani Corporis Fabrica*

ways. Of these three, Leonardo da Vinci (1452-1519) is often credited as the best observer of the period. His depictions of anatomy were elaborate and, more importantly, exact. With his additional knowledge of engineering and architecture, da Vinci brought exceptional depth to his anatomical creations.

Following in Leonardo's footsteps, Andreas Vesalius made his entry. Vesalius lived from 1514 to 1564. While his years were short, his contributions to medicine and medical understanding/illustrations were immense. He was prolific in his writings and, more importantly, in his documentation. He was diligent and curious. He had a strong following of other anatomists and scientists in his region. With contributions from his students and colleagues, Vesalius' work was eventually published in "De Humani Corporis Fabrica" in 1543. In this book, Vesalius produced the most detailed catalogue of human dissections to date. His book contained 186 anatomical plates. Through these illustrations, many of the previous misconceptions of anatomy were corrected. In fact, his 186 anatomical plates soon became the standards in Europe and the known modern world. To this day, the dissections in "De Humani Corporis Fabrica" are still considered by many as the greatest work of human anatomy and art.

THE NEW GENERATION OF ANATOMISTS: FROM HUNTER TO NETTER

With the new focus on direct observation, the future of medical illustrations flourished. No longer were theories left unchallenged. Both normal processes and diseases were investigated. Building on the works of Da Vinci and Vesalius, the understanding of the human body made steady progress. Following in the footsteps of such giants came others that we now readily recognize. Dr. William Hunter lived from 1718 to 1783. He was a physician and surgeon with a keen interest in obstetrics. He began his studies at the University of Glasgow but soon

moved to London, where he focused on anatomy and soon founded a school to further his teachings. With his interests in anatomy and his devotion to careful dissections, he published a large portfolio, "Anatomy of the Human Gravid Uterus". These anatomical plates were legendary and did much to further the understanding of human fetal anatomy. His works and the remainder of his dissections/plates are now housed at the Hunterian Museum at the Royal College of Surgeons in London. A century after Dr. Hunter came Dr. Henry Gray. Dr. Gray started his studies in England before embarking on a career as a surgeon and an anatomist. With the help of a colleague and an illustrator, Dr. Gray compiled a book of 363 illustrations: his seminal text, "Anatomy, Descriptive and Surgical" (1858). Soon after the publication of his work, he became a lecturer at the Hunterian Museum in London, literally following in the footsteps of Dr. Hunter.

Max Brodel and Dr. Frank Netter were two important modern artists and anatomists. At the end of the 19th century, German-born Max Brodel traveled to the United States and joined the new medical school at Johns Hopkins. There he was surrounded by scientists and surgeons. With his talents and his anatomical knowledge, he did much to document the techniques of the top surgeons of the times, such as William Halsted and Harvey Cushing. His surgical illustrations were soon disseminated to medical schools throughout the United States and Europe. Although not a physician by training, Brodel did much to set a standard where the illustrators not only were artists but were also experts in their field. Because of him, the field of medical illustration combined art with precise surgical and anatomical detail. Brodel started of the first school for medical illustrators in the United States, at Johns Hopkins.

Like Brodel, Dr. Frank Netter is a name commonly recognized by young physicians and surgeons. Even though the likes of Vesalius, Hunter, and Gray

are the founders of artistic medical anatomy, it is through Max Brodel and Dr. Netter that most younger physicians are aware of the anatomy of the human body. Dr. Netter was called by many as "medicine's Michelangelo." He lived from 1906 to 1991 and was a fully-trained physician and surgeon, starting at New York Medical College and proceeding on to an internship at Bellevue Hospital. During his training and early years as a practicing physician/surgeon, he began to combine his early artistic training with his professional interests. In the realm of medical illustrations, he found that he could do both. His first anatomical illustrations were published in 1957. Throughout his career, he continued to refine his ability. He finally published his catalogue of anatomical dissections, "The Netter Atlas", in 1989, two years before his death. His atlas and the subsequent editions are mainstays in every medical school in the world.

CONCLUSION:

Medical illustrations have their basis in anatomical dissections of the human body. It is easy to appreciate the beauty of the human form as illustrated by these artists and anatomists. Because of their precision and talent, today we have a much more refined understanding of the human body, its form, and the changes it undergoes during disease processes. Even though medical illustrations are thought of as art, it is hard not to consider them a pathway to scientific discovery and practice. It can be said that we owe much of our understanding in medicine today to the artists. As Aristotle said of medicine and art, it is hard to start with one and not end up with the other.

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Ileocolic Fistula due to Carcinoid Tumor Mimicking Crohn Disease

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INTRODUCTION

In this case report, we present the challenging diagnostic journey of an 81-year-old female who sought medical attention due to generalized fatigue, loose dark stools, and weakness and who was found to have subacute anemia and a carcinoid tumor. Her clinical presentation, including diarrhea, abdominal pain, and weight loss, mirrored the symptoms of Crohn disease. Notably, intermittent small bowel obstruction emerges as a common clinical feature in patients with carcinoid tumors. The complexity of this case stems from the intricate challenge of distinguishing Crohn disease from carcinoid tumors, particularly when their presentations overlap.

CASE PRESENTATION

An 81-year-old female presented to the clinic with generalized fatigue and weakness. The patient reported loose, dark stools over the past month and occasional epigastric pain exacerbated by pressure on the abdomen. She had noticed decreased appetite, leading to a 5-pound weight loss over the past month as well. Her past medical history included hypercholesterolemia, wet macular degeneration, peripheral neuropathy, and hypothyroidism. Upon physical exam, the epigastric region was tender to palpation, but rebound tenderness, pulsatile mass, and hepatosplenomegaly were absent. Laboratory results revealed anemia with a hemoglobin level of 6.9 g/dL (it had been 14 g/dL 6 months ago previously). Other notable findings included low total protein and albumin levels, as well as low iron, TIBC and transferrin saturation. Due to the subacute anemia and alteration in bowel habit, there was a concern for lower gastrointestinal bleeding, and further work-up was planned. CT angiogram (CTA) showed thickening of

the terminal ileum with complex fistulization to the ascending colon (see image). Additionally, there was a 2 cm mesenteric soft tissue nodular area, with features suggestive of carcinoid tumor. Elevated 5-HIAA levels and lymph node pathology confirmed the presence of a well-differentiated carcinoid tumor.

OUTCOME AND PLAN

Our patient with a well-differentiated midgut neuroendocrine tumor (NET) received a somatostatin analog for symptom control prior her surgery. She underwent wide local excision, with resection of the involved segment and small bowel mesentery, with negative margins. In the postoperative setting, long-term surveillance, especially in the case of small bowel tumors, is important, as relapse can occur even after more than 5 years. Surveillance with triple-phase CT scans or MRI of the abdomen and pelvis every six months for the first year after surgery, followed by annual imaging for 10 years thereafter, is recommended.

MANAGEMENT CONSIDERATIONS

Management of small intestinal NETs necessitates a multidisciplinary approach encompassing surgical intervention, medical therapy, and long-term surveillance. Timely recognition and appropriate management strategies are crucial in optimizing outcomes for patients with these rare gastrointestinal neoplasms.

Octreotide and lanreotide are somatostatin analogs used in the management of carcinoid tumors. These agents inhibit the secretion of serotonin and other vasoactive substances, thereby alleviating symptoms such as diarrhea and flushing. While corticosteroids such as prednisone are not the primary treatment for carcinoid tumors, they may be considered in



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cases where there is significant inflammation or as adjunctive therapy. Treatment with prednisone causing marked symptomatic improvement is also another reason patients with carcinoid tumors can be diagnosed later, due to their being treated as a Crohn disease flare. ACTH has also been utilized in some cases of carcinoid syndrome to reduce the secretion of serotonin and other vasoactive substances.

Small intestinal neuroendocrine tumors often present with mesenteric masses characterized by dense desmoplastic fibrosis. This fibrosis can result from direct extension of the primary tumor into the mesentery or from mesenteric lymph node metastases. On imaging, a characteristic finding on CT is a mass-like process with soft tissue “spokes” radiating into the mesenteric fat toward the small bowel, often causing bowel retraction with angulation and tethering. Small intestinal NETs are predominantly located in the ileum within 60 cm of the ileocecal valve, and all having the potential to metastasize irrespective of size.

Because multiple NETs are present in 25 to 55 percent of cases, the remainder of the small bowel should be examined at the time of surgery. Despite controversy, resection of the primary tumor may be considered even in patients with known distant metastases, in order to alleviate potential complications such as bowel obstruction or bleeding and to palliate associated abdominal pain.

Recent studies have questioned the

routine use of prophylactic preoperative octreotide in all patients with distant metastatic neuroendocrine tumors, particularly for those already receiving long-acting somatostatin analogs or those without carcinoid syndrome. However, intraoperative availability of octreotide for emergent use in case of hemodynamic instability is paramount.

Regarding tumor biomarkers, the utility of chromogranin A (CgA) in surveillance remains controversial due to limited sensitivity and specificity. Similarly, 24-hour urinary 5-hydroxyindoleacetic acid (5-HIAA) measurements are not recommended for postoperative surveillance in tumors unlikely to produce serotonin, unless strict dietary restrictions are adhered to.

The clinical course of patients with well-differentiated gastroenteropancreatic neuroendocrine tumors (NETs) is highly variable. Some patients with indolent tumors may remain symptom free for years, even without treatment. Others have symptomatic metastatic disease, either from tumor bulk or peptide hormone hypersecretion, and require therapy. Even with advanced disease, survival times for patients with well-differentiated gastroenteropancreatic NETs, although highly variable, are generally better than those for patients with other malignancies. The main prognostic factors are differentiation and grade, tumor site, disease burden, and the presence of extrahepatic metastases.

DISCUSSION

While historically termed “carcinoids,” the preferred nomenclature now is neuroendocrine tumors (NET) or neuroendocrine neoplasms (NEN). Well-differentiated NETs, as in our patient, typically emerge in the gastrointestinal tract and lungs, with rare occurrences in the genitourinary tract. The term “carcinoid syndrome” describes a cluster of symptoms influenced by various humoral factors released by some well-differentiated NETs of the gastrointestinal tract. The typical carcinoid syndrome manifests with flushing and diarrhea, primarily observed in patients with metastatic NETs originating in the small intestine, like our patient. These symptoms are produced by release of serotonin and other vasoactive substances into the systemic circulation.

Carcinoid syndrome is primarily associated with metastatic tumors originating in the midgut (distal small intestine and proximal colon). In contrast, hindgut (distal colorectal) and foregut (gastroduodenal, lung) NETs rarely produce the carcinoid syndrome. Excess circulating serotonin is usually manufactured by enterochromaffin cells in the small bowel or appendix. Enterochromaffin (EC) cells (also known as Kulchitsky cells) reside alongside the epithelium lining the lumen of the digestive tract and play a crucial role in gastrointestinal regulation, particularly intestinal motility and secretion. In 1897 Nikolai Kulchitsky described the endocrine cells of the small intestine which now bear his name. He was a Russian anatomist and histologist and was the last Minister of Education of the Russian Empire. The name “enterochromaffin” comes from the Greek word “enteron” (έντερον), in relation to intestines, and “chromaffin” as a grouping of the words chromium and affinity, as they can be visualized by staining with chromium salts.



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CONCLUSION

Carcinoid tumors of the terminal ileum can mimic Crohn disease both clinically and radiologically. Originating from Kulchitsky cells, these tumors spread outward to infiltrate the intestinal wall and to invade adjacent structures. The mesentery undergoes desmoplastic changes, leading to kinking and angulation of the intestinal loops. Clinically, patients present with diarrhea, abdominal pain, and weight loss, and intermittent small bowel obstruction is common. The challenge lies in differentiating Crohn disease from carcinoid tumors. The age of onset can be a crucial factor, as patients over 45 years old may warrant suspicion for alternative diagnoses. Carcinoid tumors mimicking Crohn disease have been treated with ACTH, prednisone, and somatostatin analogs, showing marked improvement lasting several years. Surgical intervention becomes necessary when complications, such as complete small bowel obstruction or fistulization, occur. This case underscores the challenges in differentiating

between carcinoid tumors and Crohn disease, particularly in elderly patients presenting with gastrointestinal symptoms and anemia. Especially in patients over 45 years, physicians should consider imaging, 5-HIAA levels, and pathology to confirm the diagnosis. Timely recognition and appropriate management can lead to improved outcomes for patients with rare gastrointestinal neoplasms like carcinoid tumors.

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