

Observation

My generation and those before were all taught in our first year of clinical medicine about the importance of the history and examination and the importance of observing the patient.

Hopefully in this conversation we can talk about how we might enable our colleagues to develop their observational skills or even regain the skill. to enhance the art and become more critical observers.

These are skills that perhaps as modern diagnostics have become the norm have received less attention in the following generation of physicians. Less time is spent with the patient and making a thorough observation and increasingly more time and money being spent on diagnostic tests. **Dr. Abraham Verghese** in a recent lecture entitled “A Doctor’s Touch” discusses how physicians have detrimentally moved away from interacting with patients and quotes a case where a female patient came to the emergency room after visiting several other institutions that were unable to diagnose her. After a CAT Scan for suspected blood clots, it was discovered that she had bilateral palpable breast tumours with extensive metastases. Yet somehow nobody had ever fully observed her or carried out a proper examination which would have easily revealed her tumours earlier. **Dr Fabrizia Faustinella** describes another case of a patient who presented with fatigue, weight loss and abdominal pain. Who had similarly presented to several clinics and undergone a barrage of tests. Observing the patient, she noted that his skin was more tanned and pigmented than would be expected. He exhibited other clinical manifestations on close inspection which pointed to a diagnosis of Addison’s Disease. Because nobody had properly observed the patient the clues in all the tests had not been interpreted in the whole. ^{1, 2 3}

McLeod’s Clinical Examination teaches us the sequence of a physical examination

- Inspection (observation)
- Palpation
- Percussion
- Auscultation

The most important aspect is simply observing the patient and the surroundings. Standing at the end of the bed.

The concept of “the golden minute” and the potency of silence whilst observing the important first impressions.

¹ Mengxiao S, Observation: The Importance of Art in Medicine.

² Abraham Verghese , TED Talk, “A Doctors Touch” Video.

³ Faustinella F , The power of clinical observation in medicine.

When I undertook my pre-op clinic there, I always chose the room at the end of the corridor from the waiting area so that I could observe the patient and accompanying relative walk down the corridor, enter the clinic room and take their coat off. Absorbing all the visual cues.

The next phase of the skill of true observation is to then interpret document and convey to others what has been observed. William Osler wrote in 1929:

- Observe
- Record
- Tabulate
- Communicate
- Use the five senses

The art of observation – learning to see. ⁴

From Latin –“**observare**” -to watch over , note, heed, attend to, guard
Powerful skill often underestimated.
Rarely formally taught

Imagine a spider’s web on a cold autumnal morning with droplets of dew initially all you see is the spiders web but if you if you look more closely each droplet acts as a tiny spherical lens through which it is possible to observe different aspects of the surroundings. ⁵

True observation employs multiple senses. It is an active process of recognising, probing and feeling. It goes beyond merely seeing or hearing.

Visual literacy Requires the actions of being visual competent to contextually interpret and analyse received inputs, alongside the recognition of patterns .

Observation goes beyond merely seeing and hearing, it is an art form and a skill that takes time to experience develop and refine.

The importance of observation skills, ability to interpret and record then communicate has been emphasised by countless great medical teachers over the centuries. The textbooks of Medical History refer to Hippocrates as the “father of medicine” with his references to the importance of clinical inspection and observation.

Physical diagnosis has its origins in Grecian Medicine. Clinical medicine flourished before the Greeks , especially in Egypt, Crete and Babylon and undoubtedly the Greeks were influenced by these earlier physicians. But writings from these countries did not become part of the mainstream of Western Civilisation as did those of the Greeks. They took careful history and were the masters of observation; their description of patients could fit modern texts without much change.

⁴ Stonehocker S, The Art of Observation: Learning to See

⁵ Sidebotham CE, Life and Times, Observation, what do you see ?

Greek Medicine flourished early. Homer in the Iliad (c. 1200BC) described 141 wounds and used 150 anatomic terms. Hippocrates (c. 460-370 BC) lived during the Golden age of Greece.

His contemporaries included Plato, Socrates, Aeschylus, Sophocles, Euripides , Aristophanes and Pericles.

In Hippocrates' hands medicine became an art, science and profession. The Hippocratic writings are probably a collection from a number of individuals from the period during which he was the dominant medical figure. They were collected after the death of Hippocrates and stored in Alexandria. From there they were disseminated to all parts of the world. The surviving collection contains 42 cases the likes of which were not encountered again for 1700 yrs. these cases demonstrate a high level of clinical medicine that includes detailed history, observation, palpation, direct auscultation and examination of the sputum and urine. ⁶

We have to remember that the early physicians lived before the advent of modern diagnostic techniques , treatments and understanding of many diseases enabling modern diagnosis and treatments.

The next proponents of the importance of observation were the period of Galen in the 2nd century AD in Rome following on from Hippocrates. The development of the concept of the "**Four Humours**" *blood, yellow bile, black bile and sputum*.

Little devolved further until the era of Accurate Anatomy with Vesalius and the period anatomical of dissection about 1543.

In the mid 1600's the concept of 'Nosology of Disease' developed with Sydenham. The definition, classification and nomenclature of disease. In 1666AD as well as being a physician he was also a Captain in the cavalry of Oliver Cromwell.

Sydenham laid down important principles:-

- All diseases should be described and classified in species, just as botanists do plants.
- Objective descriptions of each disease, described with the same accuracy as when an artist paints a picture.

The late 1700's and early 1800's brought in the era's of Morgani in 1761 and The **Foundations of Pathological Anatomy** , along with the development of the development of the era of "**Hospital Medicine**" especially in Paris between the French Revolutions of 1789- 1848. ⁷ This was the period when the Medical Institutions started to be built across Europe. And the new generation of physicians developed with great emphasis on clinical examination and observation such as Martin Charcot at France's Salpetriere Hospital.

⁶ Walker HK . The Origins of The history and Physical Examination.

⁷ Bynum W, The History of Medicine : A Short Introduction, Chapter 3.

The value of recording the clinical observation was also noted in the early 1800's by the French physician Louis Martinet "*the report of a case should be like the copy of a picture ... The observer should express its real character.*"⁸

This brings us to the art of recording observation as erudite written works and the two examples of essays by Paget and Parkinson who were both typical of the physician-naturalists of their time.

Parkinson 1755-1824 was one of the most experienced "fossilists" of his day, adept at classifying fossil types and several are named after him, giving him the same sense of application to observation of disease.

Son of John Parkinson. Apothecary and surgeon living in Hoxton Square London. Oldest of five siblings. Took over his father's practice. Involved in politics. 1812 first description of appendicitis. Wrote several books about fossils. Several fossils named after him. Including **Ammonite – Parkinsonia parkinsoni** "*Organic Remains of a former World*" vol1-1804, vol2-1808, vol3-1811. Died of a stroke.

Paget whilst apprenticed in Great Yarmouth, his spare time was spent in the study of botany and zoology and in 1834 published "*The Natural History of Great Yarmouth*", Paget acknowledged how his study of botany enhanced his habit of observing and its effect on his later life.

James Parkinson published "*An Essay on the Shaking Palsy*" in 1817, two years after the battle of Waterloo. The essay set out a closely observed descriptions of six cases of the progressive disabling condition, two of the cases were met casually in the street. The descriptions of posture and running gait are examples of the encompassing attention to observed detail. The essay was swiftly recognised to be an important description that has since attained the status of a classical medical text. In the year of publication, the *London Medical and Physical Journal* announced the essay as worthy of universal perusal. Jean-Martin Charcot, who later named the condition "*La Maladie de Parkinson*", was so impressed that he advised students at the Salpêtrière to translate it. "It will provide you with the satisfaction and knowledge that one always gleans from a direct clinical description made by an honest and careful observer."¹¹

James Paget 1814-1899 born Great Yarmouth. Father was a brewer and ship owner. **Paget's mother gave birth to 17 children of whom nine survived to adulthood. James being the youngest.** Father encountered bankruptcy and couldn't afford to send James to university.

⁸ Katrina A Bramstedt. Images of Healing and Learning. The Use of Visual Arts as a Window to Diagnosing Medical Pathologies.

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James Paget published many works, but is best remembered for his eponymous and classic essay “*On a form of Chronic Inflammation of the Bones (Osteitis Deformans)*” in 1876 in which he describes the observations of the condition in a patient over seventeen years, including how his yeomanry hat had to be enlarged. All the clinical features of the condition are beautifully described.⁹

Perusing these two classic essays highlight examples of the important art of observational written literacy in clinical medicine, and how we should revisit this skill. Something to discuss with junior colleagues.

Which brings us to the importance of using Visual Art in medicine. Several medical schools have introduced visits to the art gallery to teach observation skills, some of these basic skills have been lost behind the modern medical technology, the nature of artists work makes them excellent observers, numerous examples of historic classic paintings where the artist has perhaps unknowingly captured and depicted pathology if one observes carefully.

Art is the projection of our experiences and memories embracing the artists ability and power to observe and capture the environment around us. The nature of artists work makes them excellent observers. They faithfully capture everything that they see and with that skill they subconsciously record all the manifested conditions of their models without any medical training.

Having already discussed Paget’s essay it is pertinent to use the portrait by Quintin Metsys painted in 1513. This is a caricature of a lady sitting for a portrait. Entitled ***The Old Woman or The Ugly Duchess***. To the untrained eye this painting simply looks like the portrait or even caricature of an old woman, but if you study the specific facial characteristics, the exaggerated ugliness with the features of deformation, the bossed forehead, prominent cheekbones, enlarged maxilla, increased distance between mouth and nose and slightly forced rictus smile are classical representations of the changes to the face encountered with Paget’s descriptions of the condition.¹⁰

⁹ James Paget “On a Form of Chronic Inflammation of Bones (Osteitis Deformans). Med Chir Trans. 1877 60:37-64

¹⁰ Dequecker J , Paget’s disease in a painting by Quinten Metsys (Massys).

Rembrandt's representation of Bathsheba **at her Toilet** painted in 1654 uses his mistress as the model. Whilst naked she appears lost in thought. The artist has captured skin discolouration on her left breast, peau d'orange and fullness and distortion of the axilla. On initial inspection Rembrandt's capturing of the changes might not be apparent. She died seven years later. ¹¹

A more elusive representation of disease captured by an artist can be found in "**The Three Graces**" painted 1639 by Peter Paul Reubens (1577-1640). At first glance, nothing seems to stand out medically, but on closer inspection the graces display several symptoms associated with hypermobility syndrome. The Grace in the centre has scoliosis of the spine as well as a positive Trendelenburg sign. The Grace on the left has flat feet and hyperextension in the 4th and 5th fingers of her right hand and evidence of double-jointness. All three Graces also appear to have spine lordosis and lax upper eyelids. Individually each model could have had any number of conditions, but we know that Reubens used as models his second wife Helene Fourment and her two sisters. Reubens used the sisters in other paintings and these subtle signs can be seen whereas with different paintings and models before he married Helene in 1630 they are not present. Hypermobility Syndrome is autosomal dominant we are able to make the connection with the three sisters. ¹²

Over the past few years several medical schools have started to encompass the use of observing art to enhance diagnostic acumen.

At Harvard University a pre-clinical course was designed to enhance students diagnostic acumen by expanding their visual skills in 2008. The Harvard program involved three main components over a 9-week module.

1. Close observation and guided discussion of visual art
2. Exploration of core artistic concepts
3. Opportunity to apply these skills to clinical assessment.

The Weill Cornell Medical School have introduced a module at the Frick Collection of Art Museum where students developed skills in observation of paintings. Pre- and post-testing found that students comments shifted from external objective features to being more precise and emotionally referenced following the intervention. Following the introduction of a similar course developed by a dermatologist, Irwin Braverman, a randomised control study at Yale showed that students who participated in their course identified more details in photographs of patients with medical disorders.

When viewing Edward Hopper's painting *The Automat* (1927), which depicts a lone young woman sat at a table in a café table / automat in America . painted in the style of the 1920's Students are asked to consider ¹³

¹¹ Braithwaite PA, Shugg S : Rembrandt's Bathsheba : The Shadow of The Left Breast

¹² Dequecker J, Benign familial hypermobility syndrome and Trendelenburg sign in the painting "The Three Graces" by Peter Paul Reubens 1577-1640.

¹³ Nugent C , Art Saves Lives 2020 , The Southwest Respiratory and Critical Care Chronicles 2020;8(33):74-77

The figure of the woman, her posture, her clothing, her facial expression, her actions, the actual composition of the painting, the position of the table, the point of view of the observer, the time of day.

Discussing the observations, we can point out that the woman is dressed for cooler weather, that her empty plate suggests that she has been alone at the table for some time, that her downcast head and the downturned brim of her hat indicate loneliness or depression. The bright lights reflected in the window behind her contrast with the inky night; only pale shadows are seen outside, which intensifies her solitary position. The off-centre table anchors the lower right side of the painting; it appears to be near the door of the café, surely an undesirable location. The bright red flowers in the vase behind the woman contrast with and only emphasize the melancholy mood.

Joel Katz at Harvard in 2003 developed a course “Training The Eye; Improving the Art of Physical Diagnosis”.

Formal arts appreciation education has been shown with several studies to bring improvements in the observational skills of those who participated. ¹⁴

Dr Simon Chadwick

Power of Observation podcast

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¹⁴ Bramstedt KA