

ORIGINS OF OSTEOPATHIC MEDICINE

Dr. Richard Chmielewski
Founder, Medical Director
The Falcon Clinic for Health, Wellness and Recovery
New Hartford, NY 13413
Email: WFalcon@aol.com



Theories of Illness in the 19th Century - 1

-  **Maisma** - an obsolete medical theory that held that diseases—such as cholera, chlamydia, or the Black Death—were caused by a *miasma* (ancient Greek: "pollution"), a noxious form of "bad air", also known as **night air**. The theory held that epidemics were caused by miasma, emanating from rotting organic matter.
-  The miasma theory was accepted from ancient times in Europe and China. The theory was eventually given up by scientists and physicians after 1880, replaced by the germ theory of disease: specific germs, not miasma, caused specific diseases. However, cultural beliefs about getting rid of odor made the clean-up of waste a high priority for cities.



Theories of Illness in the 19th Century - 2

- **Spontaneous generation** - a body of thought on the ordinary formation of living organisms without descent from similar organisms. The theory of spontaneous generation held that living creatures could arise from nonliving matter and that such processes were commonplace and regular. For instance, it was hypothesized that certain forms such as fleas could arise from inanimate matter such as dust, or that maggots could arise from dead flesh.



Theories of Illness in the 19th Century - Humourism

- Hippocrates - is the one usually credited with applying this idea to medicine. –
- The Human body contains BLOOD, PHLEGM, YELLOW BILE AND BLACK BILE.
- These are the things that make up its constitution and cause its pains and health.
- Health is primarily that state in which these constituent substances are in the correct proportion to each other, both in strength and quantity, and are well mixed.
- Pain occurs when one of the substances presents either a deficiency or an excess, or is separated in the body and not mixed with others.



The Father of Microbiology

Antonie Philips van Leeuwenhoek-

said to be the first to see and describe bacteria (1674), yeast plants, the teeming life in a drop of water (such as algae), and the circulation of blood corpuscles in capillaries.

 The word "bacteria" didn't exist yet, so he called these microscopic living organisms "animalcules", meaning "little animals".

 Those "very little animalcules" he was able to isolate from different sources, such as rainwater, pond and well water, and the human mouth and intestine.



Athanasius Kircher

- 1602-1680

- Kircher - defined the invisible organisms found in decaying bodies, meat, milk, and secretions as "worms".
- His studies with the microscope led him to the belief, which he was possibly the first to hold, that disease and putrefaction (decay) were caused by the presence of invisible living bodies.
- In 1646, Kircher wrote that "a number of things might be discovered in the blood of fever patients".
- When Rome was struck by the bubonic plague in 1656, Kircher investigated the blood of plague victims under the microscope. He noted the presence of "little worms" or "animalcules" in the blood and concluded that the disease was caused by microorganisms.
- He was the first to attribute infectious disease to a microscopic pathogen, inventing the germ theory of disease, which he outlined in his *Scrutinium Physico-Medicum* (Rome 1658).
- Kircher's conclusion that disease was caused by microorganisms was correct,



Ignaz Philipp Semmelweis- \1 July 1818 – 13 August 1865

- Described as the "savior of mothers"
- Semmelweis discovered that the incidence of puerperal fever (also known as "childbed fever") could be drastically cut by the use of hand disinfection in obstetrical clinics.
- Puerperal fever was common in mid-19th-century hospitals and often fatal. Semmelweis proposed the practice of washing hands with chlorinated lime solutions in 1847 while working in Vienna General Hospital's First Obstetrical Clinic, where doctors' wards had three times the mortality of midwives' wards.
- Despite various publications of results where hand washing reduced mortality to below 1%, Semmelweis's observations conflicted with the established scientific and medical opinions of the time and his ideas were rejected by the medical community.
- He could offer no acceptable scientific explanation for his findings, and some doctors were offended at the suggestion that they should wash their hands and mocked him for it.
- In 1865, the increasingly outspoken Semmelweis supposedly suffered a nervous breakdown and was committed to an asylum by his colleagues. He died 14 days later after being beaten by the guards, from a gangrenous wound on his right hand which might have been caused by the beating.



Rudolf Ludwig Carl Virchow 1821 –1902

- Virchow's cellular theory- was encapsulated in the epigram *Omnis cellula e cellula* ("all cells (come) from cells"), which he published in 1855
- One of Virchow's major contributions to German medical education was to encourage the use of microscopes by medical students, and he was known for constantly urging his students to "think microscopically".
- His concepts on pathology directly opposed humourism, an ancient medical dogma that diseases were due to imbalanced body fluids, hypothetically called humours, that still pervaded. [



Virchow and Cells

- In the 19th Century, scientists were still calling various substances of the body “tissues” or “fibers”
- Through his observations through microscopes, and numerous publications, he showed that all organs were made of cells
- He observed that any one cell was not too far from its arterial and venous supply, its nerves, and lymphatic vessels.



Virchow – the Father of Pathology

- The microscope revealed to him, that diseased tissues exhibited a variety of changes
- He observed fatty changes within cells, to inflammatory conditions, tissue destruction and atrophy.
- One cell could die while its neighbor remained healthy
- Disease was never accompanied by new cells. Even tumors turned out to be a modification of existing cells.
- “It is not the way the cell LOOKS that is the problem, but the way it ACTS.
- He proposed that physicians must look to pathologic physiology, not pathologic anatomy, to solve the fundamental riddles of sickness.



Dr. Still and Dr. Virchow

- Dr. Still read the publications of Virchow including his famous “Cellular Pathology”, 1858.
- He realized that all cell groups were organized around a chain of supply (arteries and veins), communication (local nerves) and drainage (the lymphatic vessels).
- This grouping pertained to all systems, e.g. the brain, the heart, skin, muscles, the liver, etc.



Louis Pasteur - 1822 – 1895

- His medical discoveries provided direct support for the germ theory of disease and its application in clinical medicine. He is best known to the general public for his invention of the technique of treating milk and wine to stop bacterial contamination, a process now called pasteurization.
- He is regarded as one of the three main founders of bacteriology, together with Ferdinand Cohn and Robert Koch, and is popularly known as the "father of microbiology"
- In his experiments he altered the pH (or acidity of a solution such as beer or wine), and the amount of oxygen in a solution, affecting the outcome of fermentation.



Pasteur and Silkworms

- Pasteur worked on diseases of silkworms, which were ravaging the French silkworm industry.
- The worms were decimated by bacterial overgrowth.
- The bacteria thrived when the silkworms were kept in conditions of poor nutrition, excessive heat and humidity, inadequate aeration and even during stormy weather.



Pasteur altered the " terrain" of the silkworms

- Measures to raise the silkworms in conditions of optimum hygiene and nutrition saved the industry from ruin.
- Thus, the prevailing environmental conditions - the terrain, formed the single most important factor for the health of the silkworms.
- The presence of microorganisms were less the cause of disease than the effect of lowered resistance.



The Basis of Osteopathy - Synthesizing the observations of Virchow and Pasteur

- Still examined Pasteur's results and, blended them with Virchow's teaching that normal physiology demands unimpeded blood circulation.
- A sluggish circulation, from any cause, would result in poor oxygenation and, beyond a certain point, poor cellular respiration, resulting in fermentation at the cellular level.



Lymphatic Drainage and Health

- Virchow recognized that the body exhibits a constant drive towards health.
- “Just as a filthy sewer will produce disease in the whole city” Still paraphrased Virchow, “so the failure of one organ will produce disease in the whole body”.



The Rule of the Artery reigns Supreme

 Dr. Still- "...with a normal blood supply the body possesses remarkable powers of healing, regeneration and, with appropriate hygiene, resistance to infection"



What was the underlying cause of disease?

- Disease, which is really a fractional death...must be due to a partial cessation of the blood stream from some mechanical obstruction to the artery or vein of the organ primarily affected.”
- “...but realized I was only on the first round of the ladder. I had not yet found the real underlying cause of disease”.



HEALTH AND DISEASE –

Integration of the nervous system with the circulatory system and the musculoskeletal system

- As with machines, did similar mechanical principles apply to the human body?
- As a mechanic, Dr. Still knew that the efficient operation of a machine depended upon the correct adjustment of its parts.
- Did similar mechanisms apply to the human body?



Might structural derangement cause disease?

- Might irritation of any nerve, artery, vein or lymphatic vessel anywhere in the body predispose to disease?
- Had Andrew Taylor Still found a universal principle applicable to all medical conditions?



Health and Disease

- Still postulated that “... every fiber of man’s being.. Every living cell constantly striving to express the ineffable quality known as health.
- Health and Disease could be regarded as the interaction of two opposing forces: spiritual forces generating order; material forces – physical derangements – generating disorder.

