

HISTORY OF SURGERY

Lect. Dr. Orhan Önder
17.10.2022



01

Survey

02

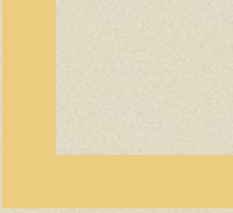
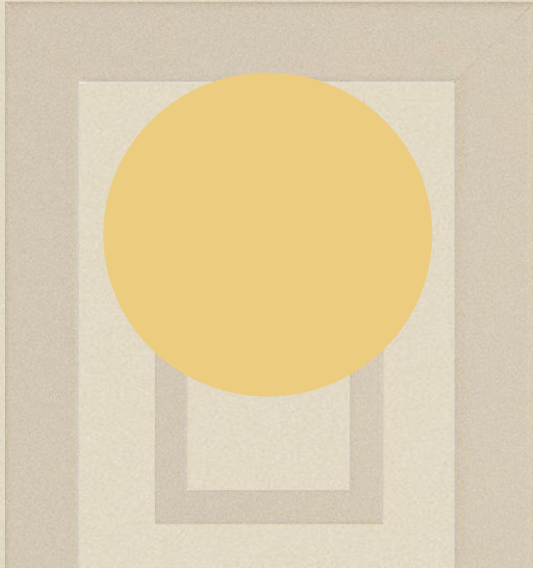
What is Surgery

03

**Milestones and
stars of the
history of
anatomy**

04

Final Remarks

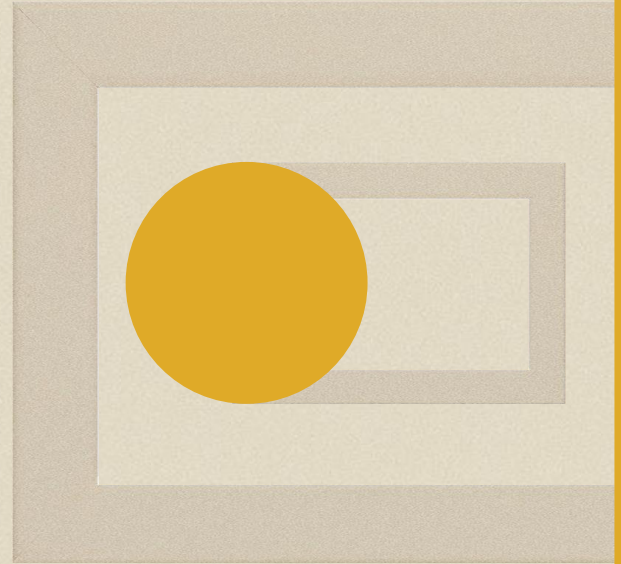




SCAN ME

What is Surgery

A branch of medicine that is concerned with the treatment of injuries, diseases, and other disorders by manual and instrumental means

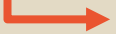


greek
ghes
hand



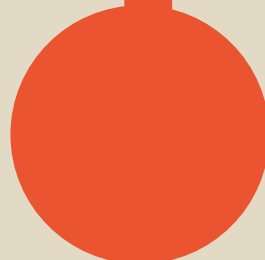
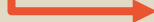
greek
ergon
work

greek
kheir
hand



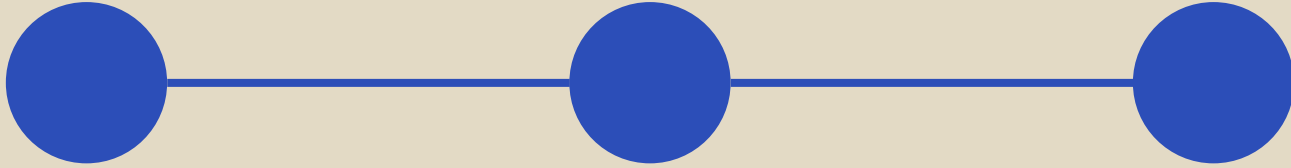
greek
kheirourgos

old french
cirurgien



late middle english
Surgery
Chirurgie

TIMELINE

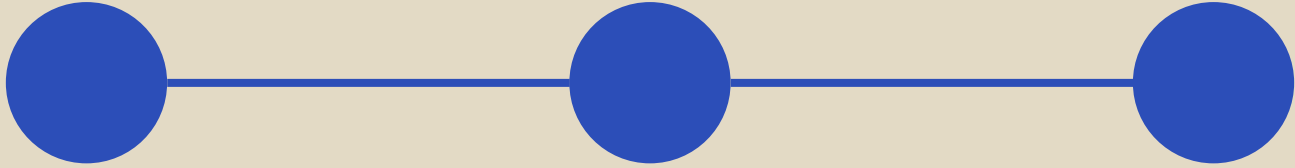


**Ancient
Civilisations**

Greek Era

Roman Period

TIMELINE

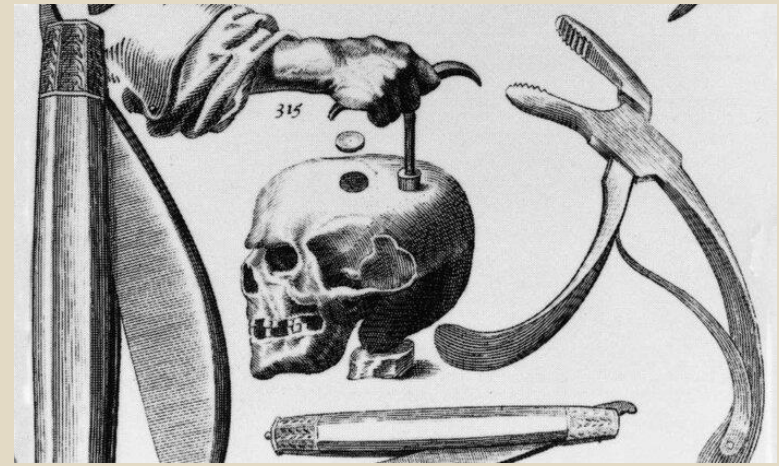


Medieval Ages

Reneissance

**17th - 20th
centuries**

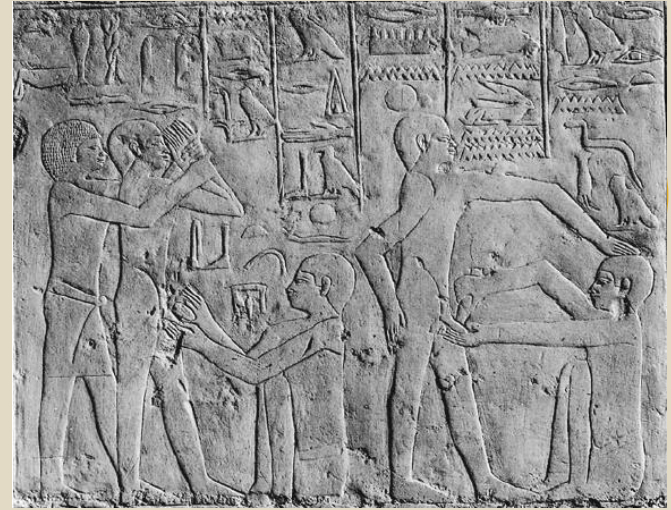
Prehistoric Era



Trepanation

Ancient Mesopotamia

- Wound dressings: a beer poultice dressing was inscribed around 2100 BC on a Sumerian clay tablet
- Babylonian Code of Hammurabi (circa 1750 BC)
- If a surgeon performs a major operation on an 'awelum' (nobleman), with a lancet and caused the death of this man, they shall cut off his hands



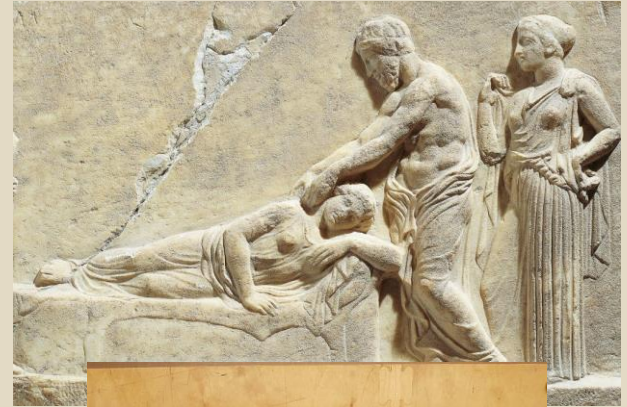
Ancient Egypt

- Edwin Smith papyrus (circa 1600 BC)
 - suturing
 - Circumcision
 - bandaging, splints, poultices
 - stopping bleeding with raw meat



Ancient Greek medicine

- recipes for wound washing, dressing, and bandaging
- wine, beer, myrrh were thought to promote healing
- Homer: heroic warriors acted as surgeons for each other; they bandaged wounds with healing substances such as rust from their spears.
- Hippocratic texts:
 - *«I will not use the knife, even upon those suffering from stones, but I will leave this to those who are trained in this craft.»*
 - Drainage for abscesses and empyema
 - *pyoulkos*: syringe



Ancient Roman medicine

- Many improved, copper alloy, surgical instruments: lever, forceps, hooks, speculum, probes etc.
- Surgeons resident at gladiator schools and military hospitals (valetudinarius)
- Celsus (circa 25 BCE-50 CE): *De medicina*
- lithotomy, hernia repair, eye operations



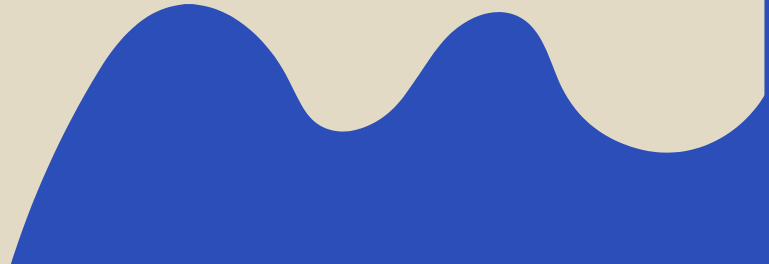
Cataract Couching

- Cataracts were a common affliction which required surgery, and the methods for treating them were described in Indian as well as Greco-Roman texts.
- Cataract couching: pushing the cloudy material away with a sharp instrument
- Cataract couchers had a bad reputation for exaggerated claims and surgical incompetence. Many, however, were effective operators, because they had acquired a wide experience.



Medieval ages

- Abu al-Qasim al-Zahrawi (Abulcasis): 11th century, Andalusian Arab physician-surgeon, his book on surgery was translated and became the main textbook
- Since Hippocrates, fresh wounds were thought to fare well if thick white or yellow pus could be made to appear.



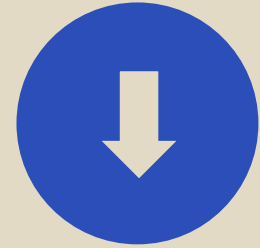
Early Renaissance

Age of Discovery/Exploration

- Henri de Mondeville: 14th cent., Chirurgia, limb tourniquet before amputation, advocated that wound could heal without suppuration
- Guy de Chauliac: Chirurgia Magna (1363), accepted the theory of laudable pus and devised poultices to encourage its formation.

neo-galenists

theocentric



anthropocentric



Renaissance

- Giovanni de Vigo, surgeon to the pope, recommended boiling oil of elder to cauterize this new type of wound; his method caught on quickly.
- French surgeon Ambroise Paré discovered quite by accident that the method was superfluous.
- reintroduced the ligature of arteries (first used by Galen) instead of cauterization during amputation



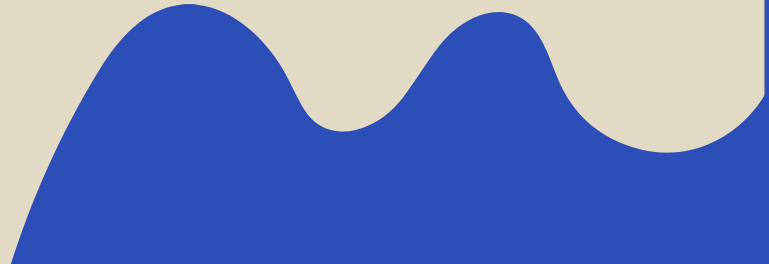
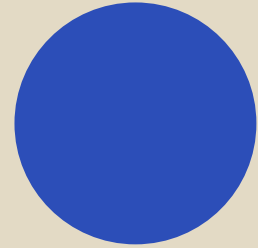
AMBROISE PARÉ (1517-1590)
à la guérison d'un homme blessé

«My oil ran out and I had to apply a salve made of egg-white, rose-oil, and turpentine. The next night I slept badly, plagued by the thought that I would find the men dead whose wounds I had failed to burn, so I got up early to visit them. To my great surprise, those treated with salve felt little pain, showed no inflammation or swelling, and had passed the night rather calmly – while the ones on whom seething oil had been used lay in high fever with aches, swelling and inflammation around the wound.»

—Ambroise Paré

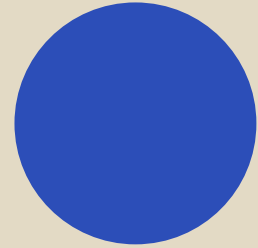
Professionalization of surgery

- Previously surgeons had been part of the barber class, often illiterate and traditionally inferior to physicians.
- Barber-surgeons learned their trade by apprenticeship, unlike the doctors who read Greek or Latin at universities and rarely saw patients until after they had graduated.



Professionalization of surgery

- In 13th century, the College of St. Cosmas and St. Damian was established in Paris. The members of the college were divided into those who wore a long robe and were entitled to operate, and those who wore a short robe and could do only minor interventions (tooth extraction, cupping, leeching, bloodletting).
- In 16th century, barber-surgeons in Europe were granted charters to form their own guild.
- By the 18th century, physicians were mocked for being impractical, bookish, and ineffectual.
- In the early 19th century, surgery became a tool of scientific inquiry.



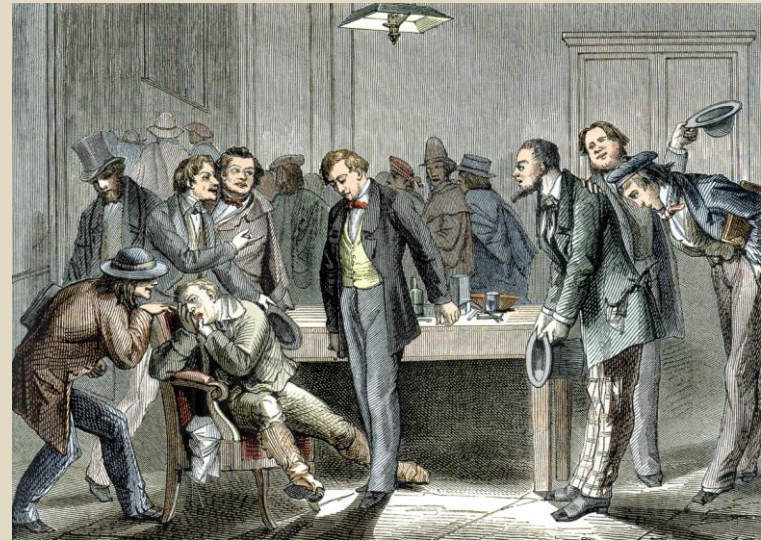
Anesthesia

- To relieve pain during surgical procedures, alcohol, opium, mandragora and bleeding had been used for centuries.
- Nitrous oxide ('laughing gas') was known in the late 18th century and was used at social gathering for fun.
- In 1799 the English chemist Humphrey Davy experimented with a combination of nitrous oxide and oxygen in both animals and humans; he suggested that it might allay surgical pain.



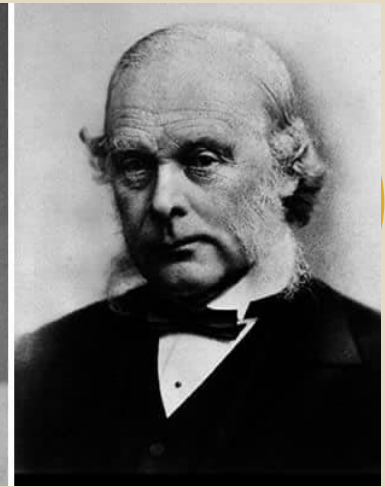
Anesthesia

- Nitrous oxide was also used by the dentist Horace Wells in late 1844 and conducted public demonstrations of 'painless tooth extraction.'
- Another dentist W.T. Morton used ether with better results.
- Surgeon Crawford Long experimented with it for eight minor operations in 1844.
- 1846: used in an operation to remove a neck tumour
- The following year, chloroform was introduced.



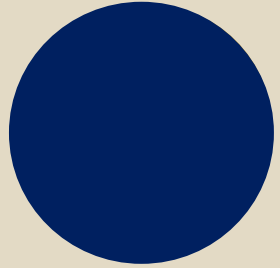
Antisepsis

- In 1867, the Scottish surgeon Joseph Lister announced the results of his experiments with carbolic acid in open fractures.
- By stating the opinion that wound infections were caused by bacteria, Lister based his method on the theory of the French chemist Louis Pasteur.
- At first, antiseptics were splashed into wounds or sprayed into the air to kill the germs presumed to be lurking there. But surgical wounds were supposed to be 'clean' from the outset.



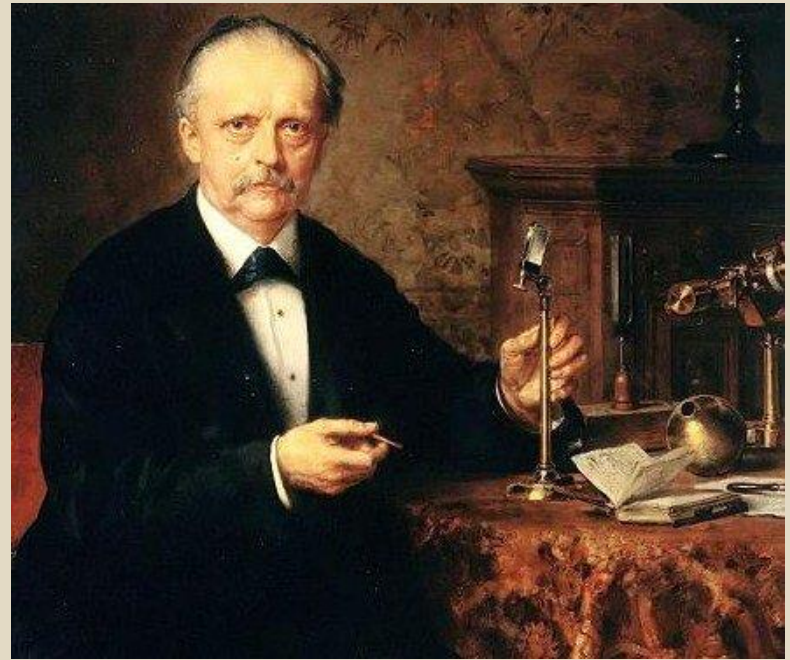
Asepsis

- Cleanliness had always been a virtue in surgery.
- In 1847, Ignaz Semmelweis introduced the washing of hands and instruments in chlorine water solution to prevent childbed fever, but he did not publish until 1860.
- Preventative asepsis to avoid wound contamination by operators was introduced by Ernst von Bergmann in 1877.
- Rubber gloves were patented the following year.
- Lister initially clung to his original views, but by 1896 he too accepted the advantages of asepsis over antisepsis.



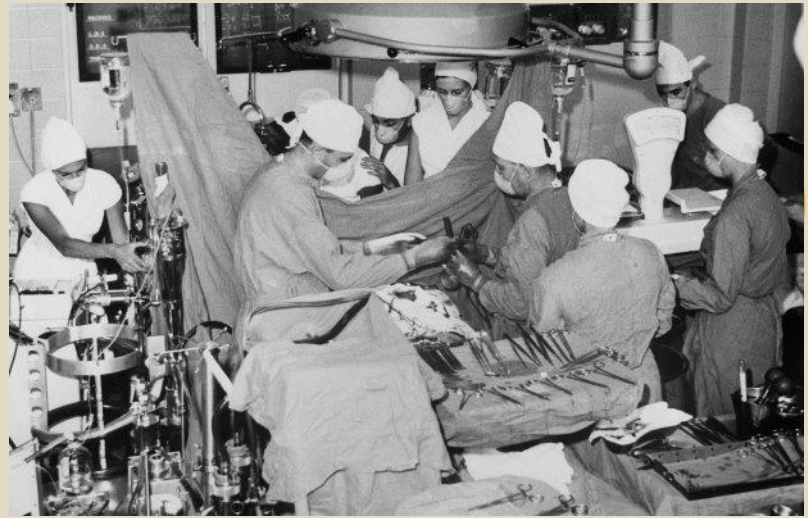
Rise of the Surgery

- Hermann von Helmholtz, invented the ophthalmoscope in 1851; it led to improvements in operative ophthalmology
- Ludwig Rehn, in 1896, was the first to operate successfully on a beating human heart (closed a stab wound).
- Theodor Billroth championed gastric and biliary surgery in the 1870s and 1880s («Billroth's operation»).
- Charles MacBurney, also specialized in intestinal surgery, and he described acute appendicitis in 1889 («MacBurney point»).



Rise of the Surgery

- In 1909, Theodor Kocher became the first surgeon to win the Nobel Prize, for his work on the operations and physiology of the thyroid gland.
- Soon after, Alexis Carrel won a Nobel Prize (1912) for his technique of vascular anastomosis, a cornerstone of transplant procedures.
- C. Walton Lillehei performed the first open heart operation in 1952 using hypothermia to slow metabolism while the heart was stopped.
- In 1954, the first successful kidney transplant was performed by Joseph E. Murray.
- In 1967, Christiaan Barnard successfully transplanted a human heart.





FINAL REMARKS

THANKS

Does anyone have any questions?



orhnonder@gmail.com

orhan.onder@marmara.edu.tr

References

Duffin J. History of medicine. University of Toronto Press, 2010.

McGraw R. Encyclopedia of Medical History. MacMillan Press, 1985.