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History of Forensic Medicine

First part: General Sources of Forensic Medicine in Europe from the Ancient Times

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Introduction

Forensic Medicine, also called Legal Medicine as a morphological field is strongly linked with the detailed knowledge of anatomy and builds on the latter's basics for its diagnoses. The relation between forensic medicine and anatomy in history can be traced even to the fact that modern anatomical understanding was gained through the autopsies of executed criminals, which was, at the time the domain of forensic medicine, too. Perfect anatomic skills are chiefly necessary in forensic traumatology.

It is generally known that due to the autopsies, which were part and parcel of the process of mummification in Ancient Egypt the Egyptian civilization had, in its time, an unsurpassable anatomical knowledge in comparison to other peoples. Mummification and the autopsy, which was part of it, was, in fact, a religious matter (Fig. 1).

In the ancient cultures however, autopsies were more of an exception than a rule. Examination by a physician or another skilled person was limited to the visible injuries on the surface of the body. Examples of such activities can be found in old religious texts. The Holy Bible describes a situation, which we can consider in today's terms as an examination of victim's injuries. In John 20: 25 Thomas raises doubt over the other disciples' report they've seen Jesus: "…. But he [Thomas] said unto them, Except I shall see in his hands the print of the nails, and put my finger into the print of the nails, and thrust my hand into his side, I will not believe." Here Thomas wants to examine forensic important injuries. From the description of the crucifixion of Jesus in John 19:1-42 we know of two kinds of injuries on the body of Jesus - vital ones by nails and postmortal by spear. Words of Thomas "thrust my hand into his side" refers to Jesus' postmortal injury by a spear of a soldier (see John 19:34).

Thomas' desire for evidence was satisfied 8 days later as Jesus appeared again. John 20:27 describes the situation: "Then saith he to Thomas, Reach hither thy finger, and behold my hands; and reach hither thy hand, and thrust it into my side: and be not faithless, but believing."

Thomas took in the mentioned fragment of The Holy Bible scientific approach which we can label as "evidence based". Such approach is to be expected from every forensic pathologist.

Egypt and Greece

The first physician, known by name and therefore highly probably an existing person, was Imhotep (Fig. 2). Later, he was also taken into the system of Egyptian gods. He lived in the reign of Pharaoh Djoser from the 3rd Dynasty (*around 2600 BC*). The Canadian Professor of Medicine, Sir William Osler (1849 - 1919) wrote about him "*He was the first doctor, who emerges from the fog of these ancient times*". Nevertheless, it is of interest that a certain Hesire (Fig. 3) was a Doctor in the Court of the same Pharaoh Djoser. Imhotep surely had a very high status in the Court, but more frequently he was mentioned as the principal architect. In spite of this, in later centuries, during the reign of King Ahmose II. (after 600 BC.), he was nevertheless proclaimed the god of Medicine.

One can understand that the high development of the Egyptian medicine was a real reason that around the year 280 BC, the center of Ancient Greek medicine was the Museion (Temple of the Musae) in Alexandria.

Herophilos[1] (Fig. 4) (335-280 BC), was a Greek physician, born in Chalcedon in Asia Minor (now Kadiköy, Turkey). Herophilos was

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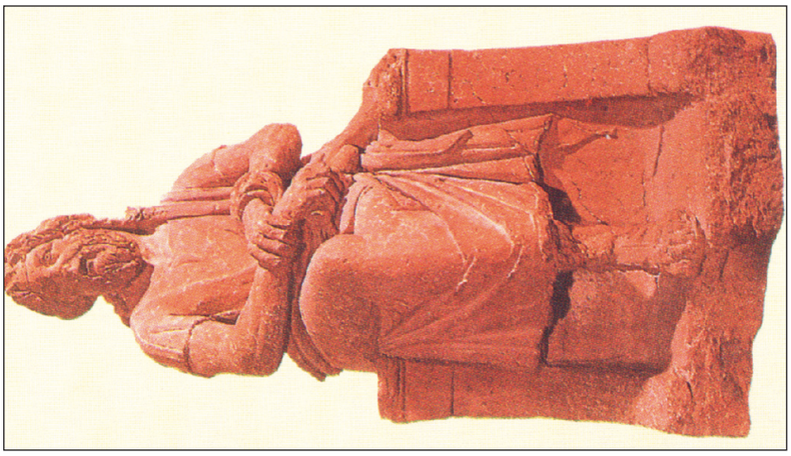


Fig 4. Herophilos



Fig 3. Hesire



Fig 2. Imhotep

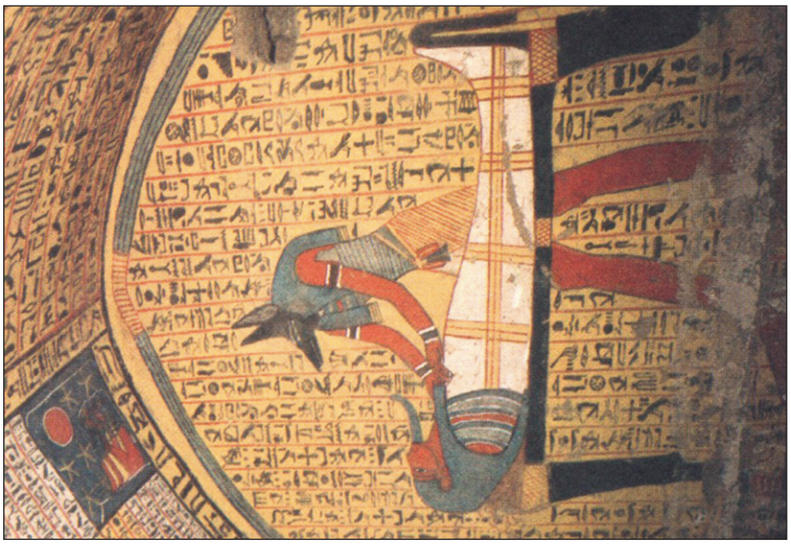


Fig 1. Anupev

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one of the most significant representatives of the Alexandrian medical school. He is also considered to be the first anatomist. His works were lost but fragments of his writings mainly on anatomy survived until today because they were quoted by Galenos. Herophilos had remarkably profound anatomical and physiological knowledge; he carried out autopsies of animals and presumably even humans, though this is not confirmed since he did not extend the knowledge about mammals to humans, as was the custom in his time. It is true, however, that he gained much of his skill during experiments, which dealt with the vivisection of animals. Herophilos distinguished between sensory and motor nerves, and between the cerebellum and the brain. He also noted that the brain cortex was folded into convolutions and named the 'duodenum'.

Another equally important doctor of this school was Erasistratos from Julis, on the island of Kea (ca 250 BC). He was a personal physician of Seleucus I Nicator, founder of the Seleucid dynasty. Erasistratos wrote two anatomical writings and a book about the causes of diseases. It is known that Erasistratos performed numerous human autopsies and his approach is rightly considered the true origin of the pathological-anatomical deliberation about health and illness. This is praiseworthy as even in the 1st Century AD, the Roman doctor Celsius refused to accept the autopsy, saying that it is enough to study the large numbers of injured soldiers from battles and gladiator arenas.

Hipprocrates (460 BC–377 BC) based his medical practice on observations and on the study of the human body. He held the belief that illness had a physical and a rational explanation. Hippocrates traveled throughout Greece practicing medicine and teaching his ideas. His works contain reports of medical malpractice and negligence which were common in those times. Hippocrates quoted as the main reason for the unusual high count of bad physicians the fact that physician's incompetence remained un-punished.

In the speeches of Lysias (approx. 459 BC–380 BC), Demosthenes (384 BC – 322 BC) and Antiphon (479-411 BC) cases where patients died during treatment by a physician were mentioned. Ancient judges solved these cases without participation of any physicians.

Roman Empire

One of the most important physicians of ancient Rome was Galenos (ca 129–199) from Pergamum (in present-day Anatolia). He was Emperor Marcus Aurelius' personal doctor. Since autopsies of people were forbidden at that time, Galenos performed autopsies of animals, particularly monkeys and pigs. No wonder that as a result, he sometimes reached incorrect conclusions about the structure of the human body.

Physicians of the Roman Empire already used the term "mortal wound". In the work of Suetonius De Vita Ceasarum in 82nd capitol of Gaius Iulius Caesar's biography (Divus Iulius) we can find text describing Ceasar's assasination: ".... he [Gaius Iulius Ceasar] was stabbed with three and twenty wounds.... of so many wounds, none turned out to be mortal, in the opinion of the physician Antistius, except the second one in the breast."[2]

Two roman laws – lex Aquilia and lex Cornelia - targeted physicians. The lex Aquilia provided for state supervision of physicians, and held them responsible for negligence. The lex Cornelia severely punished practitioners whose carelessness or culpable ignorance caused the death of a patient.

Some parts of Corpus Iuris Civilis from 6th century (reign of emperor Justianus) mentioned terms "dementia", "menta capti", "moria" and "insania". These mental states were reason for exculpation of crime perpetrator. Not a physician but the judge himself decided whether the perpetrator was capable of understanding his action and could be held responsible.

Use of torture was prohibited on pregnant women. It was midwives, not physician's, duty to examine woman's possible pregnancy. We can consider these midwives as some kind of forensic examiners.

Unfortunately, in the times spanning from the fall of Ancient Rome until the Renaissance, it was impossible to carry out any form of anatomical practice and therefore medical science was not evolving. During that period medicine was based almost exclusively on the work of Galenos.

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[1] sometimes Latinized Herophilus

[2] ".... atque ita tribus et uiginti plagis confossus est uno modo ...nec in tot uulneribus, ut Antistius medicus existimabat, letale ullum repertum est, nisi quod secundo loco in pectore acceperat. "