ISSN 2692-5877
DOI: *10.46998/IJCMCR.2022.22.000545*

International Journal of
Clinical Studies & Medical Case Reports

Mini Review

The Beginnings of Clinical Descriptions. The Case of an Open Pneumothorax in Epid. V 96

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Received: October 19, 2022 **Published:** November 02, 2022

Abstract

We present below the commentary of a selection of texts belonging to books V and VII of the books of Epidemics (Corpus Hippocraticum). The analysis of these texts, as we will see, allows us to contextualize these clinical histories in a specific military confrontation: the siege of the Thracian city of Dato during the Macedonian wars. The Macedonian armies revolutionized war tactics with the use of the sarissa (a type of spear that was about six meters long), and the conquest of cities through siege. These war tactics caused a certain type of wound that the Hippocratic physician describes with great realism. The careful observation of the Hippocratic physician, the precision of the vocabulary used and the description of the symptoms, as well as the intellectual need to write down the symptoms in an orderly manner, allow us to identify modern diagnoses, as occurs in the case of the Bilos, Dislitas and Audelo wounds that we can identify with a lung disease caused by trauma with an open wound and that we currently call open pneumothorax.

Keywords: Epidemics; Hippocrates; Open pneumothorax; Empyema; Alexander the Great; Phillipus of Macedon

Introduction

Those wounded in the siege of the Thrace city of Dathus and the macedonian wars

This paper is a summary of a conference given by the authors International Workshop Logic, Philosophy and History of Medicine [1].

The texts that we are going to treat next belong to books V and VII of Epidemics [2-4], some books whose title from the Alexandrian era ἐπιδεμία would refer to the "doctors' trips", or to temporary illnesses (as a succession of symptoms that it is impossible to give name), in general terms, the set brings together the observations and experiences of traveling doctors, attached to the school of Cos. These fragments are a succession of individual clinical histories, related, and in some cases environmental descriptions or καταστάσις, centered on a specific place, are inserted. Although these two books of Epidemics have aroused little interest almost from their beginnings, Galen himself considered them spurious, but leaving aside the Hippocratic question, the selection that we present here belongs to the first clinical histories that Antiquity has left us, whose antecedents closer are the inscriptions on the stelae of Epidaurus. The selection that we present below belongs to that set of fifty-one texts that appear in both Epidemics V and VII, although they are placed in a different order, with a common content, and often, although not always, the same in their structure.The data indicated for each patient are: the identity of the patient, city, time, cause, indication of the disease, description of the symptoms, ups and downs, therapy, time passing, outcome, reflections after the outcome.

The wounds that we are going to comment on are a consequence of the siege of the city of Dato [5], according to Herodotus (9.75) in the vicinity of this city a battle was established because of some gold mines, which ended with the death of the Athenian general Sophanes which took place in 453 B.C. Thucydides (1,100), Pausanias (1, 29) and Didoro of Sicily (12, 68 and 16,71) also speak of a city near Dato called Drabesco, the fights in these cities were very famous in their time as the bodies of the dead Athenians were transported to Athens and buried along the road that led to the Academy. These historical references helped Littré [6] to affirm that Book V of Epidemics referred to a medicine practiced by the grandfather and father of Hippocrates, although this is a theory that did not have much success at the time.

Most of the injuries described by the Hippocratic physician in this siege turn out to be fatal. The doctor sometimes describes the type of weapon and details from where it falls in order to know the affected organs, also indicating the seriousness of these injuries and the degree of affectation of the different organs. Thus among the wounded: Tychon was wounded in the chest and/or diaphragm with a catapult (Epid. V 98=Ep.VII 121), Bilos and Dislitas suffered from a back wound (Epid. V 96), Aristippus is wounded by an arrow fired from above and

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into the abdomen (Epid. V, 96=VII 29), as did Neapolis (Epid V 99=VII 30). Of these wounded, the only one who is saved is Bilos with a back wound, despite possibly being a lung wound, as we can deduces from the assessment described by the doctor "a lot of air came out with noise".

Methodology and Sources

The first part of this work includes two fundamental texts from Book V of Epidemics and that we propose as open pneumothorax, in an attempt to find a retrospective diagnosis. We compare with the abdominal wound of Aristippus and question the identification of open pneumothorax in the case of Alexander the Great, as shown by the recent bibliography.

"Bilos suffered a wound on his back, from which a lot of air came out with noise, he was bleeding. He was cured by plugging it with an enema. The same thing happened to Dislitas". (Epid. V 96).

"Audelo suffered a wound on his back from which blood and a lot of air came out with noise. He healed by plugging the wound with a bandage. The same thing happened to Disquitas too". (Epid. VII 34).

"Aristippus received a painful wound in the belly caused by an arrow shot violently from above. He suffered terrible belly pain and rapid swelling. He had no bowel movements below, he was nauseous and his bile was dark. When he vomited he seemed to feel better, but after a short time the terrible pains returned and his stomach felt as if he had an iliac ailment. He was thirsty, feverish and died in seven days". (Epid.V 98=VII 29).

Discussion

The best studied case is that of Aristippus (Epid. V 98), Grmek [7] in his analysis says: in the case of wounds, the problems are rarely one of interpretation, rather they concern the identification of structures, as in the case of the wound in the belly of Aristippus (Epid. V, 98) points out that the penetration of the arrow has caused a perforation of the stomach or colon, followed by peritonitis with involvement of the ileus. It is interesting to note that the author of the text describes Aristippus's serious condition by comparing it to the acute abdominal problems he calls eileoi (a colic with intestinal obstruction), but Hippocratic physicians also used this noun to designate other illnesses.

We are interested in including the case of Alexander the Great's lung wound in this comment because, it was identified at the time as a pneumothorax [8]. Alexander's life is told by sources such as Diodorus Siculus, Pompey Trogus (via Justin), Arrian and Plutarch. Eight are the total of the Magno's wounds: four minor, three serious and one almost fatal. The most serious of them 332 BC in the siege of Gaza, a catapult projectile, a huge arrow, pierced his shield and padded breastplate and ended up wounding him briefly. Three years later an arrow fractured his fibula and shortly after, again in a siege, a stone hit his head and neck. At Multan in 325 BC, he decided to take the city by storm, climbing a ladder to the top of the wall at the head of a small group of men. Up there he was surrounded by enemies and very exposed, so he went down inside the wall and keeping his back to it to protect himself, he fought with the sword against the defenders of Multan. When his men arrived, a large arrow hit him in the chest, pierced his padded breastplate and penetrated to his lung, causing him to lose consciousness [9]. Alejandro's serious wound has been studied and identified as a possible pneumothorax, but a recent article shows that it is not possible to deduce from the critical commentary of the sources that it was said pathology.We are interested in pointing out from this event the fact that Alexander was treated by Critobulus, doctor of Cos, who had previously taken an arrow out of the eye of Philippus, Alexander's father.

Open pneumothorax, succusion and empyema

The term pneumothorax is a compound word of Greek origin πνεύμα (air); θώραξ (thorax or chest), means the presence of air in the thorax, and specifically within the pleural cavity. Its etiology is diverse and the spectrum of its severity can vary from self-limited to fatal.The two main forms of pneumothorax are spontaneous and traumatic. We are interested in the description of traumatic pneumothorax (which can be iatrogenic and non-iatrogenic).The latter can be due to penetrating or non-penetrating injuries, from traffic accidents, gunshots, broken ribs that pierce the lung.

There is no specific mention of pneumothorax in the Hippocratic corpus, but some historians of medicine see allusions to pneumothorax in the practice of Hippocratic succession [10]. Succussion described by Hippocratic physicians as consisting of "shaking" the patient, this produced a splashing sound that could be heard over the chest or abdominal wall, and was interpreted as being due to the presence of air and fluid within a body cavity. (eg hydropneumothorax).

Another pathology that we can associate with Bilos and Dislitas wounds is that of empyema. Empyema, a pathology with abundant Hippocratic references (Morb, 1, 121; VI 180 L) that deal with empyema, where we observe that the etiology, clinical development, diagnosis of the disease, prognosis and its precise treatment were, in a certain way, very similar to what we observe several millennia after the description of this condition [11]. The term "empyema" is a compound Greek word consisting of the prefix "en", which means "in" or "within", and the root "pyema", which means "accumulation of pus". According to Hippocratic texts, "empyemas" can be located in the chest, uterus, bladder, ear, and other parts of the body. Thoracic "empyema" appear in the Corpus more frequently and with more detailed descriptions than any other type of "empyema", referring either to the modern meaning of the term, that is, accumulation of pus in the pleural cavity, or to the accumulation of pus in any part or organ of the body, abscess formation. Since Hippocratic physicians ignored the anatomy of the thoracic organs, they were unable to distinguish between these two disease entities.The etiology described by the Hippocratic physician to which we refer is dependent on other thoracic diseases and of peripneumonic origin on some occasions. The diagnosis was supported by the presence of fever, pain at the site of the disease, generally dry cough, dyspnea, anorexia, weakness, edema of the lower extremities, bent nails and other symptoms and signs such as the existence of a characteristic sound when put his ear to his chest [12]. According to Hippocratic physicians, thoracic "empyemas" are not primary diseases; rather, they are caused by doctors' inability to cure other pre-existing conditions of the chest. Its most common cause is the entry of foreign bodies into the lungs, either by inhalation or drinking. The authors state that once foreign bodies have entered the lungs, they cannot be rejected; they remain there, causing accumulation and stagnation of fluid that becomes a "concretion", which ends in sepsis.

The most graphic expression that helps us to identify a possible retrospective diagnosis is the indication of the doctor that "a lot of air came out of the wound with noise", and its healing occurs with the application of an enema. In other texts of the Corpus

there are references to the placement of a chest drain for two weeks, Galen also describes a similar procedure for abdominal paracentesis [13].

Another aspect that we are interested in dealing with and that is interesting is that related to the weapons and the military tactics used because they are aspects closely related to the type of wound, and because as we see in these texts, the Hippocratic physician indicates the place from which the wound falls, arrow, or the type of weapon used, to teach doctors which organs may be affected. The geographical references and the names of historical characters in this set allow us to identify these wounded with the siege of the city of Dato, the Epidemics books along with another such as the Doctor were written to teach, in this case how to attend and treat to the wounded. In this case, the Hippocratic doctor recommended exercising in the treatment of wounds and extraction of darts, traveling with mercenary troops. The Macedonian wars, the Hellenistic expansion and the campaigns of the Diadochi mobilized large armies throughout Asia causing an important movement of troops, these Hellenistic armies were gigantic [1]. (The great battles could bring together between 80.000-100.000 men on each side, from people of very different ethnic origin) and with some changes in Macedonian war tactics, such as the use of the sarissa "a long spear of more than six meters with which they advance at the ready (the Macedonian hoplites) within their compact formation, the phalanx". Given this scenario, it is not surprising that a Hellenistic doctor recommended that future doctors join mercenary troops to practice and learn how the darts should be extracted, and how to treat the scars.

Conclusion

The selection of the fragments of clinical histories from de book of Epidemics that we have presented has allowed us to highlight once again the precision with wich the Hippocratic doctors observed and described the signs of a disease. The use of new war tactics and weapons is reflected in the descriptions of the Hippocratic doctors. The case of Bylos, Dislitas and Audelo that we have analyzed allows us to identify the wound caused by an arrow could allude to what we now call open pneumothorax.

Competing Interest

There is no conflict of interest in this study.

Grant Information

The authors received no specific funding for this work.

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