

The management of skeletal injuries in ancient Egypt

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Egypt had a professional class of doctors as early as the Old Kingdom, five thousand years ago, and there were already, at that time, specialists in different branches of medicine. They had such a world-wide reputation that many dignitaries and sovereigns traveled far to consult them. Priests and magicians were concerned in primary health care, probably in an inferior capacity.

Mummified bodies, wall paintings and hieroglyphs have shown some of the orthopaedic practices of that time. The reduction of fractures by manipulation, either unaided or with the help of pads, cushions, etc, was practised with great skill.

Fractures were splinted using strips of bark, or wood, padded with linen (Fig. 1). The bandage was first dipped in powdered beans, or barley, then mixed with honey and resins that stiffen when dry. There are many examples of healed fractures of long bones that have united with such good alignment that it is barely possible to discern the fracture lines (Fig. 2). This is particularly impressive in the case of the oblique fracture of the adult femur, which united without significant overlap. It is not known how the ancient Egyptians arranged sustained traction to prevent the fragments' overriding.

In a painting from the tomb of Ipuy, Ramses II's sculptor, a person is depicted setting the shoulder of a prostrate workman (Fig. 3), which is reminiscent of the Kocher method for reducing dislocated shoulders, described some three thousand years later. This painting has been adopted as the emblem of the Egyptian Orthopedic Association.

Probably the oldest medical treatise known is the Edwin Smith surgical papyrus, which was stolen from a physician's tomb in Thebes in 1862. The papyrus is, in fact, a copy of an original that dates from about the 30th century B.C. (Fig.4) The author has been thought to be Imhotep, although this is disputed. It was translated from Hieratic (a cursive style of hieroglyphic script) into English in the 1920's by J. Breasted of Chicago [4]. In this papyrus, 48 cases, mostly traumatic,

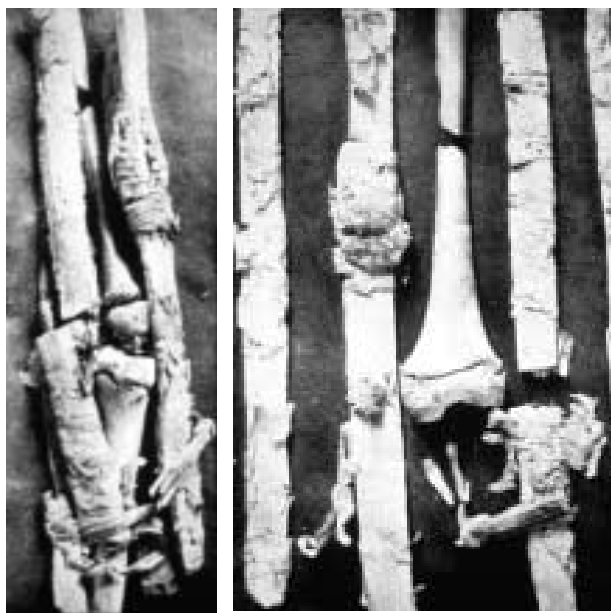


Fig. 1. Splints of wood padded with vegetable fibres, surrounding a broken adolescent femur. Excavated in 1902 at Naga ed Der.

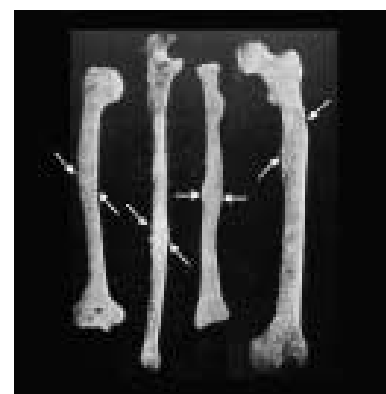


Fig. 2. Examples of healed fractures with excellent alignment. The white arrows mark the original fracture lines.

were pragmatically described, free from any magic or necromancy.

The author instructs the treating physician first to listen to the patient's symptoms and then to examine him using his eyes and hands. After reaching a diagnosis he makes a declaration: an ailment which I would treat, an ailment with which I would contend or an ailment which I would not treat. After that comes the treatment; even in cases deemed hopeless, he nevertheless treated according to his best ability. This formal, structured and logical clinical system is very clearly recognisable as the basis of our current approach to the patient. It has been followed in unbroken succession through Hippocrates (some two millennia later), Galen and on to the doctor of today.

Some examples of these cases are cited below.

Case 25: Treatment of a dislocated jaw: "... thou shouldst put thy

thumbs, upon the ends of the two rami of the mandible in the inside of his mouth, and thy two claws (the other fingers) under his chin, and thou shouldst cause them to fall back so that they rest in their place”.

Case 31: Traumatic quadriplegia: “If thou examinest a man having dislocation in a vertebra of his neck, shouldst thou find him unconscious of his two arms and his two legs on account of it, while his phallus is erected on account of it and urine drops from his member without his knowing it ... it is a dislocation of a vertebra of neck extending to his back-bone which causes him to be unconscious of his two arms and two legs ..., an ailment not to be treated.”

Case 35: Fracture of the clavicle: “If thou examinest a man having a break in his collar bone and shouldst thou find his collar bone short and separated from its fellow, I will treat. Place him prostrate on his back with something folded between his shoulder blades; thou shouldst spread out with his two shoulders to stretch apart his collar bone until the break falls in its place.”

The ancient Egyptian surgeon evidently practised autopsy. He described a case of closed fracture dislocation of the cervical spine as a vertebra “sinking into the interior of the neck as the foot settles in cultivated soil”, one vertebra is said to “penetrate into the other”. He could distinguish between fractures and luxations by crepitus, and defined sprain as “rending of two membranes although each is still in its place.”

Infected open fractures with fever were considered grave injuries. The



Fig. 3. Reproduction of a painting from Ipuy's tomb in Thebes. A person is setting the shoulder of a prostrate workman.

favourite dressing of the wound in the first day was fresh meat (haemostatic). In the following days a dressing of honey (hygroscopic) and oil (to prevent sticking of the dressing) was used unless it was feared that it may interfere with drainage. The application of mouldy bread was also practised (penicillin was first extracted from a mould!). It is salutary to consider that some of the fundamentals of the modern clinical approach to decision-making and management were accepted wisdom 5,000 years ago. An understanding of such history can only serve to heighten our respect for our professional traditions and our medical forebears.

References

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Fig. 4. A case description from the Edwin Smith surgical papyrus.



For further details of Edwin Smith papyrus please visit <http://www.eoa.org.eg/>