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Crime and Punishment in Ancient Surgery: An Examination of Assyrian and Egyptian Physicians

Amana Ali* **and Johna SD**

Department of Surgery, Kaiser Permanente Hospital, Fontana CA, USA

***Corresponding author:** Amana Ali, Department of Surgery, Kaiser Permanente Hospital, Fontana CA, USA, Tel: 6591487061; E-mail: aamna0601@gmail.com

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Abstract

The history of physicians' roles in ancient Babylonia and Egypt has been studied and documented extensively, however, surgeons' roles in these societies are somewhat less understood. Ancient Assyrian/Babylonian surgeons were subject to severe punishments and faced a difficult environment in which to develop surgical treatments; yet they did undertake Cesarean sections, ophthalmic operations, and trephinations. Egyptian surgeons, on the other hand, seem to have been offered more protection though a rigid hierarchy, leading to more freedom. They performed a wider range of operations and were even allowed experimental treatments in certain circumstances. We sought to explore these roles and their impact on surgical development in these influential historic eras.

Keywords: Assyrian; Babylonian; Ancient surgery; Ancient egyptian surgery; Ancient surgeons; Assyrian surgeon; Assyrian surgery

Introduction

The history of surgery is a fascinating collection of knowledge from various civilizations dating back up to four thousand years. Some of the oldest writings on surgery and surgeons' duties date back to the Hammurabi code and Egyptian papyri [1]. The role of the surgeon, particularly, has always had a somewhat peculiar distinction from that of other physicians. In reality, the physician sphere rarely interacted or overlapped with the surgeon sphere of practice, and responsibilities and rewards assigned to the two groups were frequently completely different. We sought to examine and compare the scope of practice, risks, rewards, and punishments of surgeons in Ancient Assyria and Ancient Egyptian times.

Ancient Assyria: The Surgeon's Role

In 1849, Lord Austin Henry Layard excavated the vast majority of the clay tablets that we now associate with Assyrian times [1,2]. This movement to preserve Assyrian medical texts occurred approximately four thousand years after their original creation. One can appreciate thousands of tablets and approximately 800 complete medical texts attributable to the Assyrian and Babylonian civilizations from Lord Layard's work [2]. The earliest of these texts, likely safeguarded in Babylonian temples, date back to 2000 B.C. Here, "Asu" (physician healers) are noted and discussed in detail [1]. Though the same word refers to apparently both surgeons and physicians, their duties are very different, and it is not until much later that surgery is folded into the profession of medicine [1,2].

The responsibilities of the surgeon were, interestingly, somewhat similar to those of surgeons now. Surgeons were responsible for evaluation of ailments that were considered mechanical in nature. Ophthalmologic surgeries are noted as being done as early as 3500 BC for 10 shekels, whereas members of the ruling class would frequently pay significantly reduced, and sometimes almost none, of the ordained fees [2]. Other responsibilities for Assyrian surgeons included management of bowel obstructions. Descriptions of surgeons "opening the bowels" to let impacted contents spew out are described in these texts [1,3]. While it is unclear whether these were enterotomies or early ostomies, the concept of decompression is delineated. Conservative management of bowel obstructions and impactions is also described by what appears to be orogastric lavage with ointments and oils, and later, enemas as well. Keeping patients nil per os (NPO) is also described, with various medicinal shrubs and herbs provided "without food" [1,3].

Another job often falling within the surgeon's scope of practice was incision and drainage of abscesses, with good success noted [1,2,4,5]. Anecdotes of incision and drainage of abscesses from the face, abdomen and lower extremities have been described separately in these tablets. Approximately 4 tablets remain that describe surgeries performed and surgeons' duties specifically [6]. One such tablet describes a procedure in which the Asu performs what appears to be a thoracotomy to drain an empyema. Other tablets from this collection mention "Prescriptions for Diseases of the Head," including a skull debridement (presumably for a wound), and other surgical wound care with presumably antibacterial dressings such as sesame oil [6]. One of the texts outlines clearly the management of a presumed abscess: "If the swelling gives way [under your finger], and pus is squeezed out of the skull, you shall incise, scrape the bones, and remove its fluid…" [7]. Similarly, patients were to exhaust medical therapy before "the (surgeon's) stone knife and razor reached (them)" [8,9].

One of the earliest surgeons in Babylonia was probably a man by the name of Urlugalidine (2300 B.C.), whose 'logo' was two knives intertwined. Today his stamp can be seen at the Louvre in Paris [8]. He appeared to be one of the eminent surgeons, with many successful procedures in the above-mentioned categories. The concept of the surgeon-barber was also eminent in Assyro-Babylonian civilization, described as gallabu. The services of this type of surgeon included branding slaves on the forehead or hand, barber duties, and dental extractions. This fact in some form rang true till millennia later; even Britain and early America had combined barber-surgeons [8,9].

Cesarean sections were described as well in these times though medieval Europe did not adopt this practice till centuries later. In 1960, a tablet was translated describing a boy being extracted from the womb of his mother [10]. Not much else is described about Cesarean sections though, and it is assumed that most were carried out on slave-women for economic purposes of convenience-allowing their masters to dictate the timing and duration of baby birth, rather than allowing a longer vaginal delivery. Also, Cesarean sections were, as a practice, avoided with free women as patients due to the high risk of maternal death during these procedures [8]. Physician-surgeon's instruments however are described and some have been recovered, including tubes for delivery of ointments into the eyes and ears, bladder instrumentation tubes, spatulas for birthing purposes, needles for suturing, screws and boards for bone setting as well as knives and scalpels for incisions [8].

Risks and Rewards in Ancient Assyria

The rewards for surgeon-barbers were based on the status of the patient, as outlined below:

"If a surgeon (asu) has made a deep incision in (the body of) a (free) man with a lancet of bronze and saves the man's life or has open the naqabti: in (the eye of) a man with a lancet of bronze and saves his eye, he shall take 10 shekels of silver…if (the patient) is a villain, he shall take 5 shekels of silver" [8,9].

Although few other compensations or rewards are described for surgeons, many punishments are delineated: "If a surgeon has made a deep incision in (the body) of a (free) man with a lancet of bronze and causes the man's death or has opened the naqabti in (the eye of) a man and so destroys the man's eye, they shall cut off his fore-hand" [8-10]. The naqabti has been translated or interpreted in various ways ranging from cataract to lacrimal duct.

The Surgeon in Ancient Egyptian Times

At approximately the same time, Egyptian civilization had documented in great detail surgical interventions. The first treatise on surgery specifically, dating to about 2700 B.C, was penned by Imhotep, though there is suspicion that embalmers and surgical anatomists were at work long before Imhotep. Imhotep was a grand vizier (minister) to the Pharaoh, and in fact his reputation was so untarnished that the common man began to worship him, believing he was the hand of god [4,5]. With both humor and a note of seriousness, it should be noted that while a few medical practitioners were granted sainthood, only a surgeon could achieve godhood in ancient Egypt [4,5].

One of Imhotep's contributions was his surgical technique, and sterile preparation. He describes his steps during a circumcision, which mostly concentrate on extremely careful and repetitive hand hygiene rituals to begin the procedure. These are first described in detail at approximately 2200 B.C and are one of the earliest clearly documented surgical procedures [4,5]. Hundreds of surgical specialties are outlined in other Egyptian excavations, including a surgeon specifically deemed "keeper of the royal anus" [5].

The first written description in history of surgical sutures comes from ancient Egyptian papyri found by Edwin Smith [11,12]. In Smith's papyrus, pg 225-33, he relates "thou shouldest palpate his wound, (and) draw together for him the gash with stitching" [12]. Orthopedic procedures were common especially given war wounds and agrarian injuries; ulnar and radial fractures were discovered in 31% of 6000 Nubian skeletons [11]. Edwin Smith describes 'wooden braces' as being used for bony injuries in this time period as well [12]. Ebers papyri describe lancing abscesses and removal of 'tumors made of fat' with surgical scalpels .

A major discovery in this period involves the first description of thermal cautery for blood vessels from Ebers papyri: "Thou shalt perform an operation for [swollen vessels], heat with fire, it shall bleed much". Edwin Smith's papyri also outline treatment of abscesses in the breast and head with "fire-drills" [12].

Compensation and Protection in Ancient Egypt

Recounting the history of surgery in Egypt and that in Assyria offers different challenges for historians. While details of surgical practices are difficult to find in Assyrian tablets, the surgeon's role, rewards and punishments are very clearly delineated in the Code of Hammurabi. However, Egyptian history has somewhat of an opposite dilemma. Hundreds of procedures are recounted in detail, including dental extractions, rhinoplasty, trephination, abscess drainage and tumor removal; but the surgeon's scope of practice, rewards, and punishments are scarce to come by.

It seems that for most part, surgeons, dentists, and medical doctors were all paid by the national treasury in Pharaonic times. Occasionally these medical practitioners were allowed to accept fees from their patients. If they were part of the army, however, they could never charge for their services. So long as they followed the rules and regulations of their practice, there were virtually no ramifications. The only punishments stated clearly are for those surgeons and physicians who failed to practice according to the orthodox standards laid out for them. However, if a patient died, was maimed, or did not recover, there would be no punishment for the physician except if he performed a treatment which was not considered 'standard of care', so to speak. There was some latitude allowed by the fact that if, after three days of an intervention, there was no improvement, physicians were allowed alternative, occult, or novel methods of treatment that may not have been standard or described at the time.

Discussion

On one hand, Assyrian and Egyptian surgeons appear to have similar roles, including limited scope of practice, approval of surgical intervention as a last resort, and acknowledgement that these procedures were 'extreme'. However, Egyptian surgeons appear much more liberated than their Assyrian counterparts. Granted, evidence of Egyptian surgery is better documented than that of Assyrian surgery, nonetheless, the lack of historical accounts for more surgical procedures in ancient Babylonia might be attributed to the Draconian punishments outlined in the Code of Hammurabi. Punishments for surgeons with failed outcomes (aforementioned hand amputations) were severe and career-ending. It is plausible that such restrictions stunted the progress of surgical knowledge in Assyrian and Babylonian times.

Relatedly, it is not surprising that Assyrian surgeons were conservative in exploring procedures as common as Cesarean sections (amply described in ancient India, Greece and Egypt), since poor outcomes were directly linked to the surgeon's ability and merited strong punishments. By contrast, Egyptian surgeons enjoyed some immunity to this harsh accountability, likely one of several factors contributing to their freedom to pursue alternative treatments. A fascinating observation arises from the fact that if a patient did not

respond within 3 days of standard therapy, a surgeon was allowed to offer 'experimental' treatments. This lends itself to interpretation and analogy to modern definitions of scope of practice and malpractice liabilities for surgeons-and poses several interesting questions regarding whether risk and benefit in surgery has led to accelerated or stunted development of surgical research, new techniques, and operative intervention for medical diseases.

References

1. Jastrow M (1914) The Medicine of the Babylonians and Assyrians. Proc R Soc Med 7:109-176.
2. Layard AH (2001) Nineveh and Its Remains (1stEdn) The Lyons Press.
3. Hurry JB (1926) Imhotep, the Vizier and Physician of King Zoser and Afterwards the Egyptian God of Medicine.
4. DeBakey ME (1991) A Surgical Perspective. Annals of Surgery 213:499-531.
5. Medicine in Ancient Mesopotamia
6. Majno G (1991) The Healing Hand, Man and Wound in the Ancient World. 29-68.
7. Paulissian R (1991) Medicine in Ancient Assyria and Babylonia. Journal of Assyrian Academic Studies 1: 6
8. Oppenheim AL (1960) A caesarian section in the second millennium B.C. Journal of the History of Medicine and Allied Sciences 15: 292-294.
9. Sullivan R (1996) The identity and work of the ancient Egyptian surgeon. Journal of the Royal Society of Medicine 89: 467-473.
10. Breasted JH (1991) The Edwin Smith Surgical Papyrus
11. Temkin O (1938) The Papyrus Ebers by B. Ebbell. The University of Chicago Press 28: 126-131.
12. Jones A (2011) The Practice of Medicine and Dentistry in Ancient Egypt, Historic Mysteries.