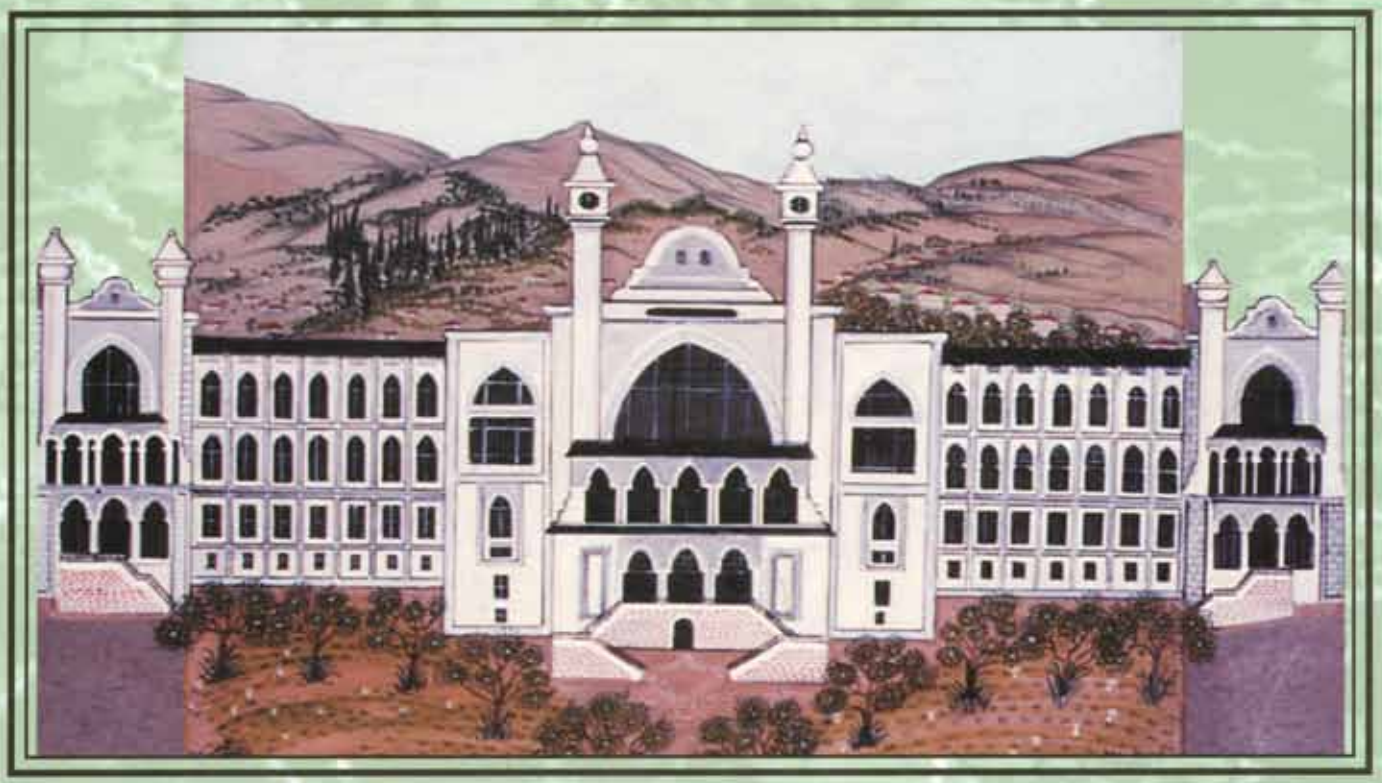
38. Uluslararası Tıp Tarihi Kongresi Bildiri Kitabı

Proceedings of the 38th International Congress on the History of Medicine

Actes du 38ème Congrès International d'Histoire de la Médecine



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Ankara 2005

A Selection From the Halûk Perk Collection on the Medical Instruments of Antiquity

*Halûk Perk**

The scope of this paper is to present some unknown medical instruments from my personal collection in order to initiate a discussion. I would like to make it clear that I am presenting this paper as a collector- not as an academician - and it will be a great pleasure to see these instruments to be discussed. It is possible that not all the instruments I present here are related with medicine; however, it is certain that all the instruments to be presented here date from antiquity. Medical instruments of antiquity are closely related, both in function and form, with those used today. Instruments and implements such as probe, spatula, curette and medicine spoons, which still have the same function as in antiquity, have the same form and shape today as well. Therefore, I have consulted the modern medical implement and instrument catalogues during my study on the ancient examples. Thus, I endeavored to reach a conclusion on some medical instruments presented here for the first time by comparing their forms and dimensions with modern ones and the descriptions in ancient sources.

The grouping of the instruments presented below depends on the availability of information on their provenance and the existence of comparable modern instruments. There are more instruments awaitir research in my medical instrument collection comprising more than 400 pieces. My study on the medical instruments continues and my ultimate goal is to publish a catalogue.

Group 1 (Fig.1)

The implements forming this group were bought altogether at Konya in Central Anatolia and the vendor also claimed to have found them together. All the instruments are of iron (probably steel) and some are shinier due to having been conserved. These must date to late Hellenistic or early Roman periods based on evidence from their provenance.

1.1. Scoop

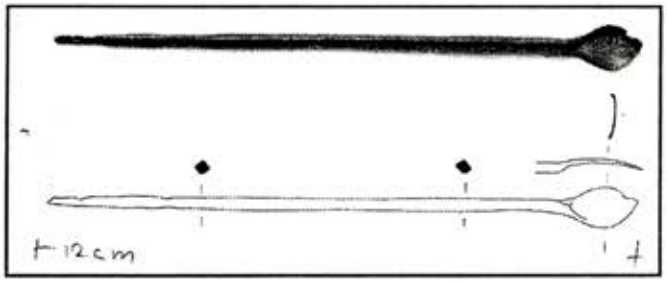
Three from this group are certain to be scoops (see one in Fig.1.1). Their lengths vary from 12 to 14.4 cm, the diameters of their bowls from 1 to 1.6 cm. They must have been used for measuring or mixing the medicine.

1.2. Scoop or Curette/Probe (Fig.1.2)

The distinguishing feature of this instrument is its handle that functions as a probe. The other end can be a scoop or a curette. The thin scoop-bowl has a diameter of 0.8 cm and its edges are flat. The total length of the instrument is 11 cm.

* Private collector, İstanbul/TÜRKİYE. e-mail: halukperk@mynet.com

Figure-1.



Resim-1.1.

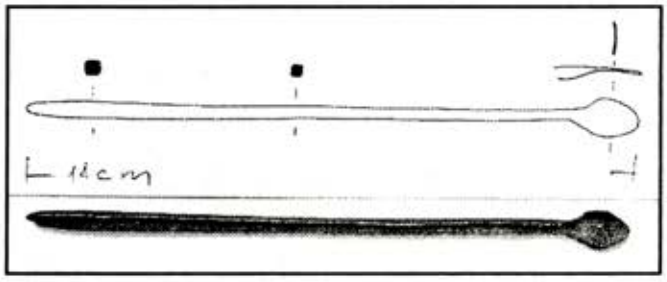


Figure-1.2.

1.3. Phlebotome (Fig.1.3)

Instruments of this type have a length from 5.1 to 10.8 cm and the wide sections vary from 0.9 to 1.5 cm in width (Fig.1). The instrument with a length of 5.1 cm was broken in antiquity. These instruments have a pin-point tip and the sides of their wide sections are sharp. Sort of a knife, the phlebotome is suitable for blood-letting as well as almost all types of operations such as discharging the abscess, puncturing the cavities full of liquids and dissection. These instruments at hand must be the phlebotome described as having a pin-point and being sharp on both sides and flat.

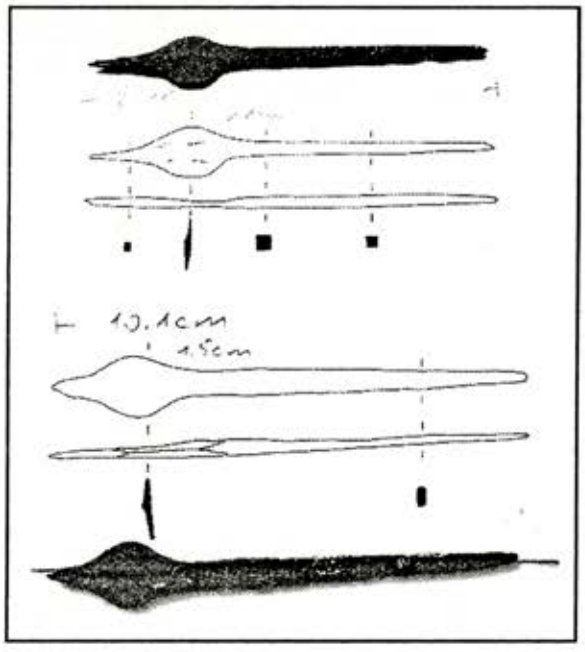


Figure-1.3

Similar examples can be found in L.J. Bliquez's publication on the medical instruments recovered at Pompeii[1]. Bliquez claims similar cutting instruments to be the phlebotome. However, the examples at Naples Museum are of copper alloy and their lengths are 11 and 30 cm. Our examples, on the other hand, are of iron (probably steel) and their lengths are the same as the short one from Naples.

The cutting and puncturing features of these instruments support their identification as phlebotomes; besides, İlter Uzel has also included some phlebotomes in his publication[2].

1.4. Cautery (Fig.1.4)

This instrument has an overall length of 12 cm and its wide end is 3 cm long and 1.9 cm wide. While one end is a pinpoint, the other is in the shape of a dentate leaf. This leaf-shaped part is of bronze and the handle is of iron; both pieces were possibly joined by soldering. In case the leaf-shaped wide section was used as a handle, then the sharp pointed end must have been used for piercing; however, the quality of craftsmanship of the leaf-shaped part is higher, which points to the fact that actually this end was the part used. It is well known that in surgical operations in antiquity, the cauteries were used frequently and there were many types of them, and usually made from iron/ steel which was stronger and harder. However, due to the nature of iron, which corrodes away easily by rusting, not many cauteries have survived to the present. This iron implement must have been used as a cautery.

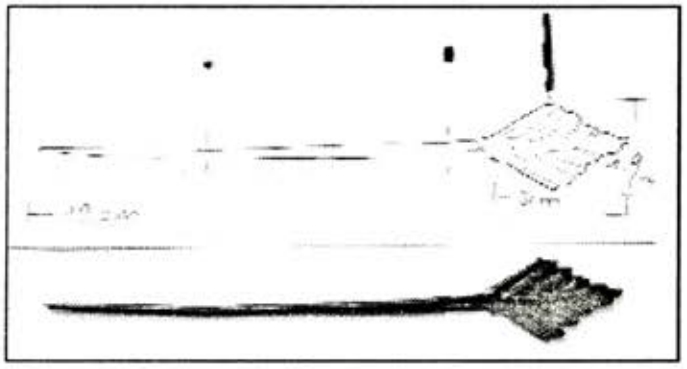


Figure-1.4.

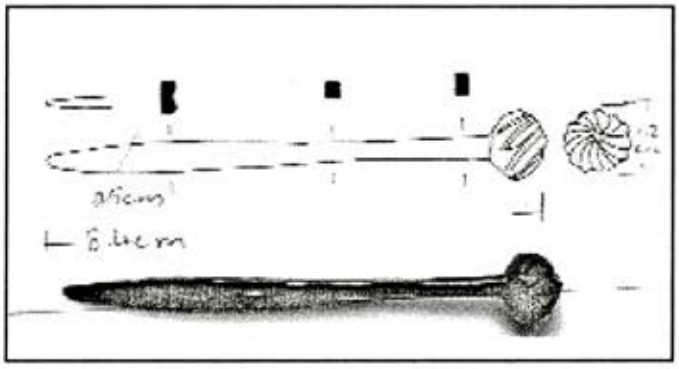


Figure-1.5.

1.5. Cautery? / Fraise? (Fig.1.5)

The last instrument of the Group 1 is 8.4 cm long and its toothed section has a diameter of 1.2 cm and the flat section is 0.5 cm wide. One end of this iron tool is thick and wide but not pointed. The head is spherical with diagonal flutes and toothed. Both the wide part and the head must have been used as cautery. However, the toothed part resembles the modern fraises that are used for abrading the bones or tissues. It is possible that it was used as a fraise by attaching a handle to the flat wide section.

Group 2 (Fig.2)

This group of instruments, all of which are of bronze, was bought together at Susurluk-Balıkesir. They all date to the Roman period. One was conserved for it was in bad condition. The vendor's claim and the presence of the same patina on all verify further their common provenance.

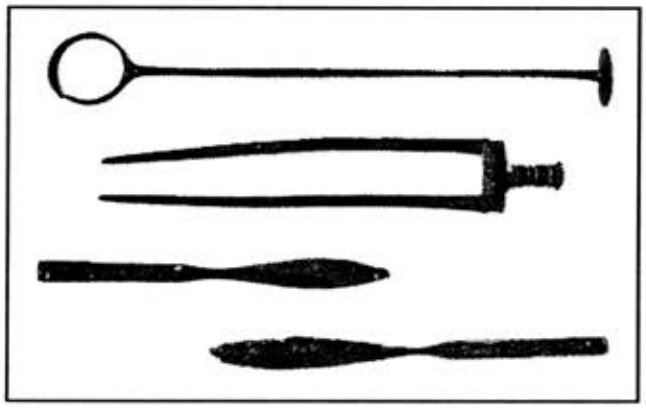


Figure-2.

It is clear that the two instruments at the bottom of the picture are scalpels/ dissectors. It is understood that the steel cutting parts have not survived due to corrosion; however, the holes and rivets are still in place. The lengths of the fragments that have survived are 10.4 and 12.1 cm.

2.1. Instrument of Unclear Function (Fig.2.1)

This implement of unclear function has been conserved. Its overall length is 16.8 cm whereas diameter of the ring is 2.3 cm and that of the circular plate is 1.9 cm. It would be likely that this implement was used as a mixer/ medicine dropper if the diameter of the circular plate were as small as 0.5 cm. However, it is possible to put two comments forth as to its function: firstly, if the ring is for holding then the circular plate is for pressing; secondly, it can be a double-cautery.

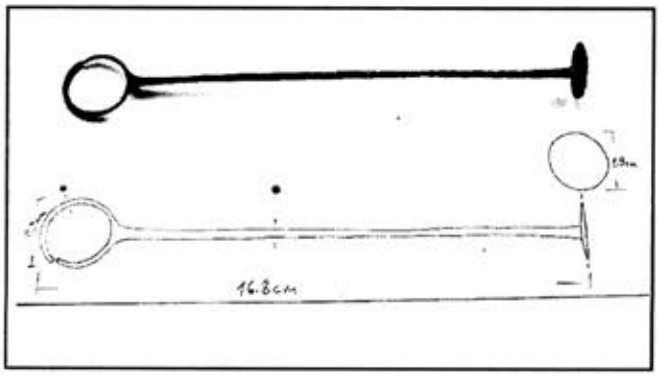


Figure-2.1.

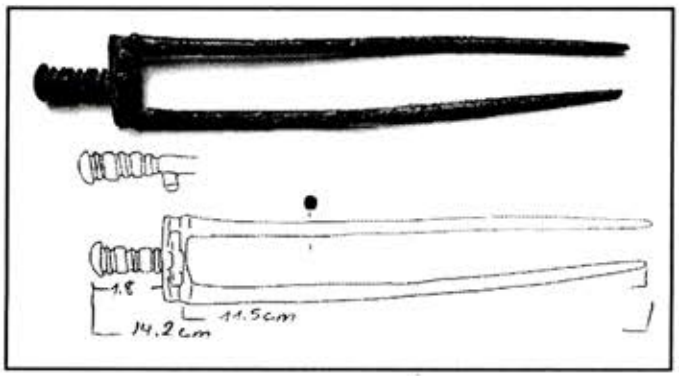


Figure-2.2.

2.2. Forked Probe (Fig.2.2)

The overall length of this instrument is 14.2 cm whereas the handle is only 1.8 cm long. The forked part is 11.5 cm long, each prong with a diameter of 0.4 cm, and the inner span of the fork at the bottom is 1.3 cm and at the tip it is 1 cm. Each prong ends in a different thickness. The implement- a forked probe- is complete and in good condition. It is inferred from the drawing that there exists a ring-like loop close to the point where the handle joins the fork-base. A similar implement with a length of 15.8 cm, a fork-length of 10.1 cm and a fork-diameter of 0.1 was published by Uzel[3]. These two instruments are alike; the main difference is the length of the handles: our instrument has a shorter handle, which renders hard to hold it comfortably.

Group 3: Hammer and Mallet (Fig.3)

The instruments forming this group were bought at various sites in western Anatolia (mostly nearby Ephesus) at different times. They all are of lead and date to the Roman period. Their lengths vary from 2.7 to 5.1 cm and their widths vary from 1.1 to 1.9 cm. These instruments have been somewhat worn out due to use; however, it is possible to determine their original dimensions. Two of the instruments are sharp on one end and blunt on the other. The last one, which is heavily worn out, is blunt on both ends; therefore, it is a mallet (*malleolus*). These instruments conform to the modern mallet types and dimensions[4], and they must have been used as hammer and mallet in brain surgery.

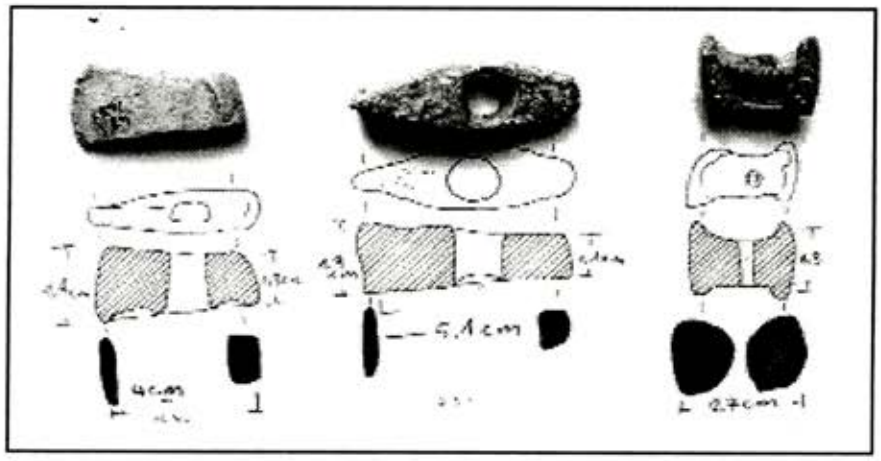


Figure-3.

It is known that hammers were used in brain surgery in antiquity. Paul says: *"Place the straight part of the lenticular on the meninx, hit the bone with a small hammer in order to divide it into two."* Again, Paul and Celsus say: *"In order to remove a foreign object from the ear, the patient is made to lie down and the bottom is hit with a hammer."* These descriptions indicate very small dimensions for the hammer. Moreover, Ambroise Pare (1509-1590) recommends that the hammer should be made from lead and Fabricius Hildanus (1560-1634) recommends that it should be covered in leather[5]. Uzel points to the fact that there exist no examples of these instruments even though there are descriptions in ancient sources.

Group 4: Sharp and Pointed Retractors or Hooks (Fig.4)

This group was formed by various purchases at different places in central Anatolia. All are of bronze and probably date to the Roman period. Examples of such retractors (or hooks) of Anatolian origin have not been published before. This group is closely related with modern instruments.

4.1. Double-Hooked Sharp Retractor (Fig.4.1)

The instrument was procured from Konya. Its overall length is 6.3 cm and the inner span of the hook varies from 1.1 to 1.9 cm and the length of the hook is 1.1 cm. It must be a sharp, pointed, double retractor used for wounds. It could also be used with a handle.

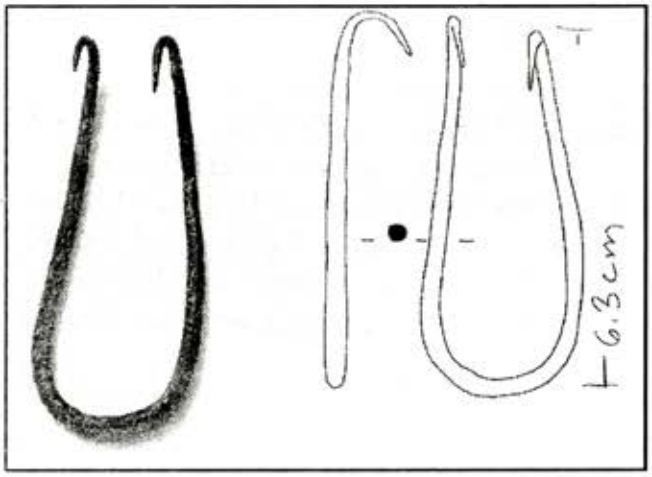


Figure-4.1.

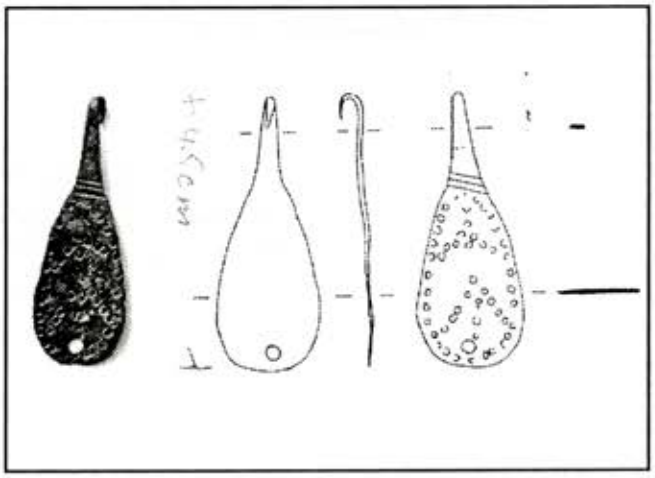


Figure-4.2.

4.2. Pointed Retractor? (Fig.4.2)

This instrument was also bought at Konya. It has a length of 4.5 cm and width of 1.5 cm. The wide plate-like section has a hole. It could have been used as a retractor; however, its form puts forth that it should have been used for bandaging the wounds. This hypothesis is further supported by the hole in the wide plate-like section, which was probably used for a string.

4.3. Sharp and Pointed Hooks with a Handle (Fig.4.3)

This third type of instruments must be hook. They were bought at different places in western Anatolia at different times. Their lengths vary 2.7 to 6 cm. Their recurved sections vary as well; however, their common property is that they all have a hole to fix a handle, which were probably wooden and have not survived to the present.

4.3.1. Sharp and Pointed Retractor or Hook with a Handle

The hook on the far right of the figures 4.3 & 4.3.1 could also be a retractor. Its length is 4.2 cm. Its hook is wider and thicker than the other examples and it is more rounded than pointed. Due to these differences in the hook, it should be considered as a subtype.

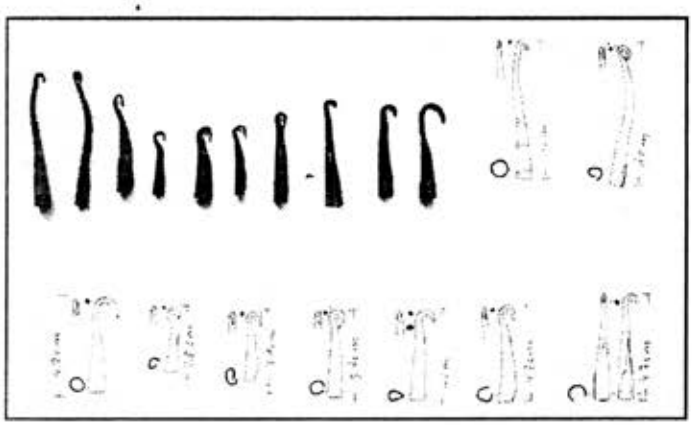


Figure-4.3.

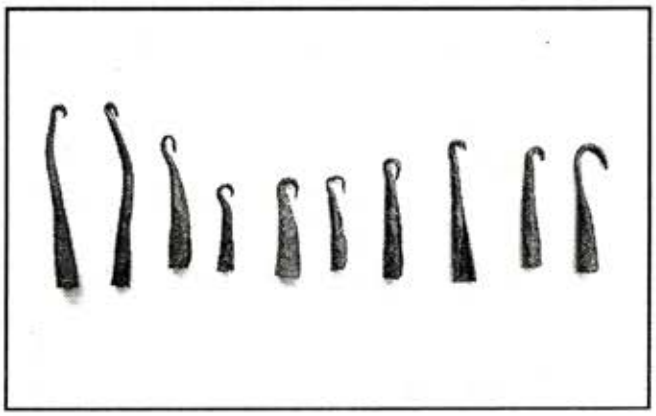


Figure-4.3.1.

Group 5: Eye (Cataract) Sticks? (Pins?) (Fig.5)

This group was procured at Konya in central Anatolia. The vendor claimed their provenance to be a tomb. All the implements are of bronze and their lengths vary from 11 to 13 cm whereas their widths from 0.1 to 0.3 cm. Their ends are very fine/thin and pointed but not sharp. The twin-holder has 9 sticks and the single-holder has 3. Each stick has a different length and thickness and varies greatly from each other.

These implements could be used as dilators for sensitive areas; however, I am of the opinion that these were used for ophtalmological/eye surgery, especially for cataract operations for which only basic implements are necessary. Pins/sticks were frequently used for eye surgery, as cautery or perforator, and to remove small tumors. Celsus says: *"Here must be used a pin which is not very thin but suitable for piercing; this pin must be placed by passing through two membranes in the middle of the eye angle on the side of the pupil and the temple, and it must be pressed away from the center of the cataract so that the vender shall not bleed. Yet it must be pressed very cautiously..."*[6]

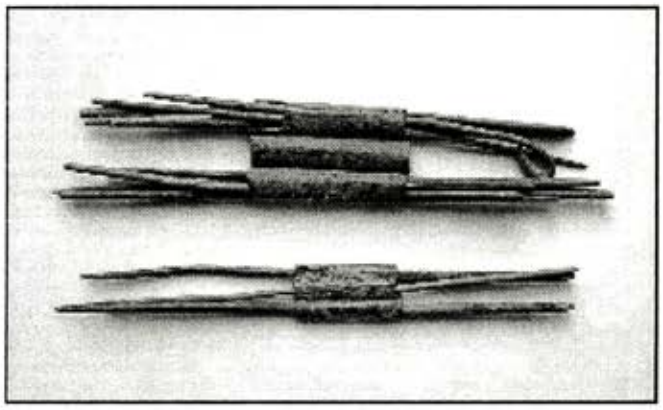


Figure-5.

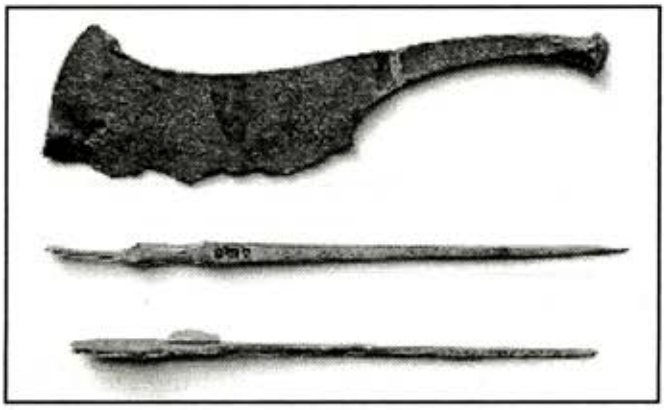


Figure-6.

Group 6 (Fig.6)

This group, all of which is of bronze, was procured altogether in east Turkey and belongs to the Luristan civilization (late 2nd - early 1st millennium BCE).

The implement at the bottom of Fig.6 is a forceps with a length of 11 cm and a width of 0.8 cm along the wide part. The pointed part of the handle was broken.

6.1. Elevator (Fig.6.1)

This elevator is 12 cm long. One end is round to facilitate holding and using. The handle has a very pointed tip and is strong; therefore, it might have been used for piercing.

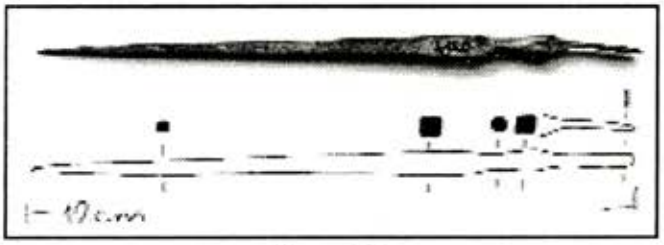


Figure-6.1.

6.2. Bone Knife (Saw?) (Fig.6.2)

This partially conserved instrument is the most curious one of Group 6 and it is included within this group in order to facilitate its presentation. Its length is 11.6 cm; the knife part is 6.4 cm long and 3.1 cm wide. The instrument and the knife section are both curved entirely. The handle is thicker for an easier hold and pressing. This is a knife to cut the bones. Yet, a closer examination leads to the possibility that it could be a saw with gross teeth.

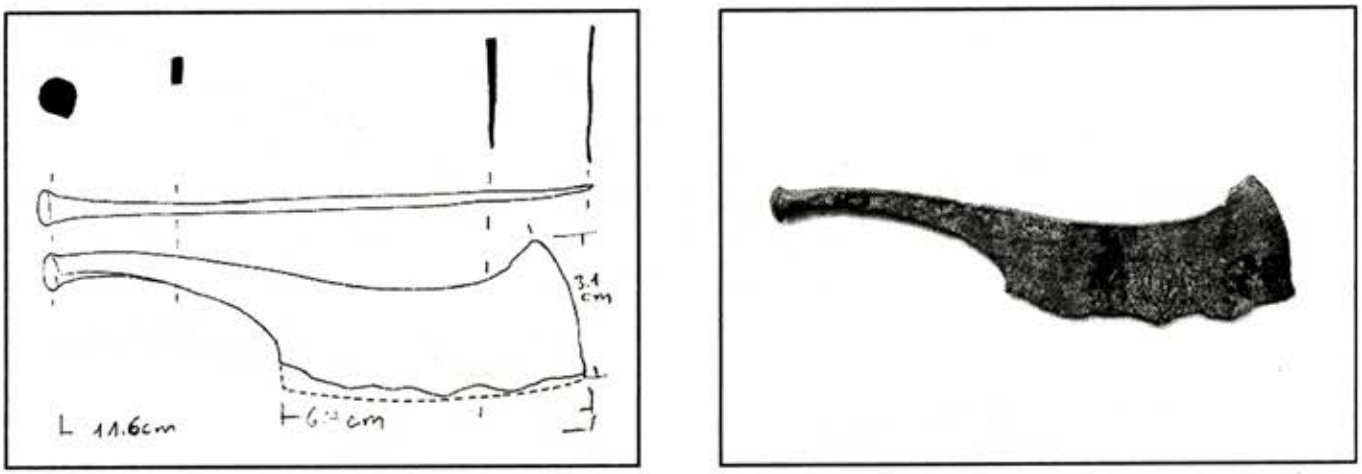
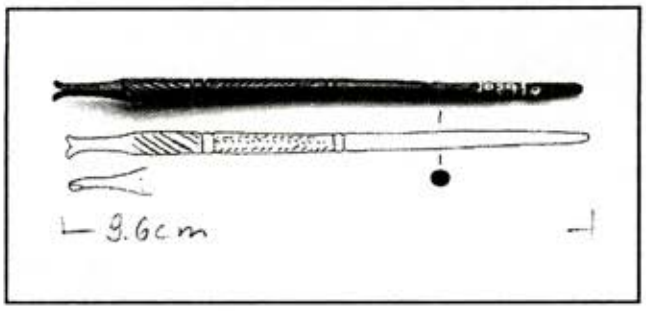


Figure-6.2.

Group 7

7.1. Instrument for Tamponing (?) (Fig.7.1)

This bronze instrument of Anatolian origin is 9.6 cm long and there is no missing portion or deformation. A comparison with modern instruments points to a use for tamponing.



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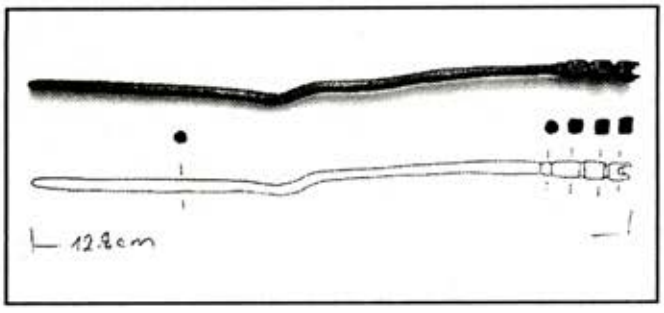


Figure-7.2.

7.2. Instrument of Unclear Function (Fig.7.2)

This bronze instrument of Anatolian origin is 12.8 cm in length. This complete instrument has been conserved. A comparison with modern medical instruments indicates a variety of functions: firstly, an instrument to hold the catgut while stitching the veins or to loosen the knots or ganglions; secondly, an instrument to take specimen from mucus etc; and thirdly, it could have been used as a vein plug or tampon.

Group 8: Instrument of Unclear Function (Fig.8)

Bought at Söke in western Anatolia, this bronze instrument is 14.3 cm long and the length of the hammer section is 3 cm, and the hole has a diameter of 0.4 cm. This complete instrument has been conserved.

The end with a hole could be used as a probe. Though the other end is perceived as a hammer, with its flat and sharp edges it should have another function.

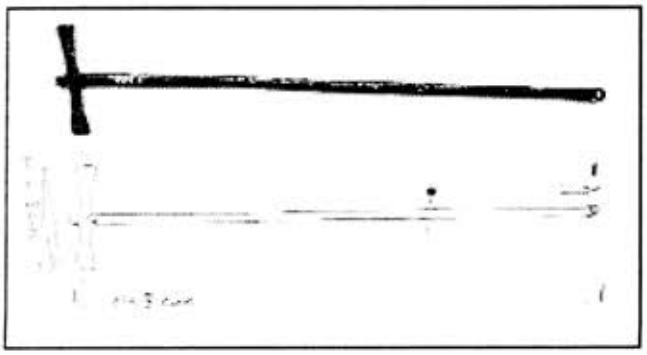


Figure-8.

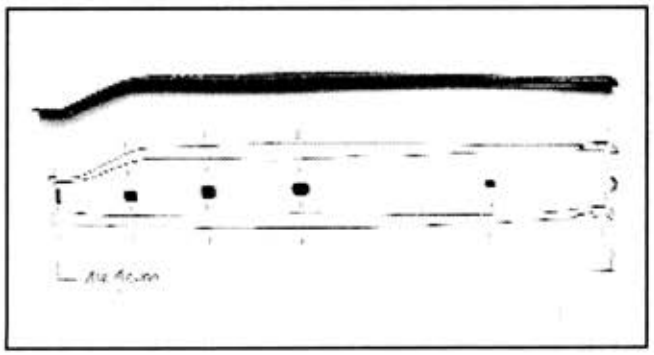


Figure-9.

Group 9: Curette and Chisel Elevator? (Fig.9)

The provenance and dating of this bronze instrument are unknown. Its length is 14.1 cm and it is 0.4 cm wide at both ends. This complete instrument is two-sided. One side is clearly a curette or a scoop. The other curved side has a sharp edge and it could be a chisel, or a bone lever or an elevator. The functions of both sides are quite clear; however, to find such two functions combined in one instrument is quite unusual.

Group 10: Cone Knife (Fig.10)

This bronze instrument of Anatolian origin is complete and its date is unknown. Its length is 10.6 cm, length of the knife is 2.4 cm and breadth of the knife is 1.1 cm. The wide end is bent and has a pointed end with sharp edges on both sides whereas the other end is blunt, sharp and serrate. It is clear that the instrument has cutting and dissection functions. The bent part resembles the modern cone knives; yet, it could also be a blunt dissector. The other end can be perceived as a chisel or serrated to hold a wooden handle. Uzel has commented on a similar instrument from Anatolian Civilizations Museum at Ankara to be a cautery[7]. The dimensions of both instruments are close to each other.

Group 11: Knife and Gouge (Fig.11)

Procured in eastern Anatolia, this bronze instrument is 14.1 cm long with a width of 1.5 cm at convex part, 0.3 cm at the other end, and 0.7 cm along the body. It probably belongs to the Luristan civilization (late 2nd - early 1st millennium BCE).

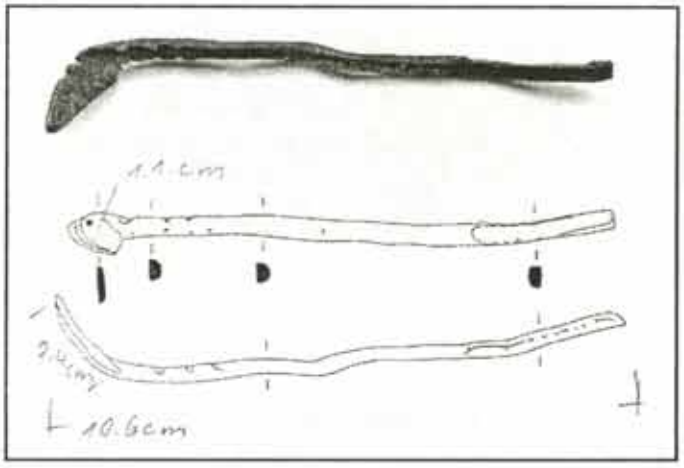


Figure-10.

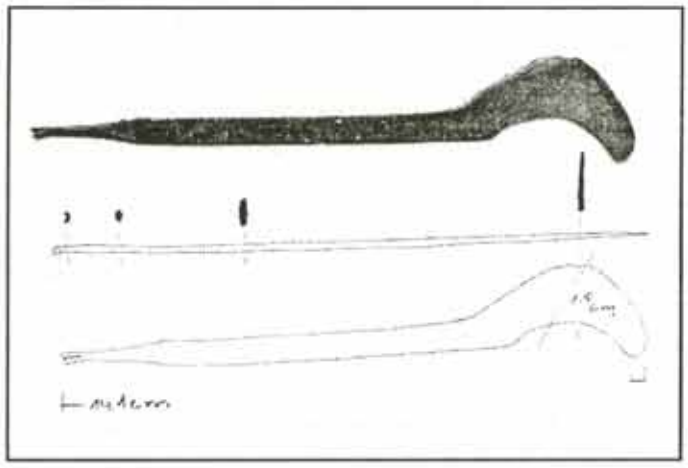
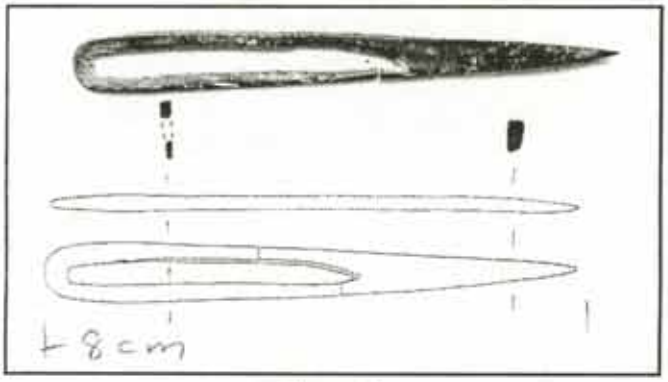


Figure-11.

For the convex part is sharp, it must have been used as a knife, by pressing the concave part with the thumb. The other end, though it is worn out, was obviously used as a gouge. Bliquez has published a similar instrument with a length of 16.5 cm calling it "an instrument of unclear function" and later commented that it was a knife or a metal sheet with incised decoration[8].

Group 12: Phlebotome? (Fig.12)

Procured at Konya in central Anatolia, this bronze instrument might date to the Greek period. It is 8 cm long. Even though there is a fracture across its width, it is a complete implement. Though the edges are not sharp, the end is very sharp pointed; therefore, it resembles the modern scalpels. It could have been used with a separate handle. Uzel published similar instruments. This must be a phlebotome.



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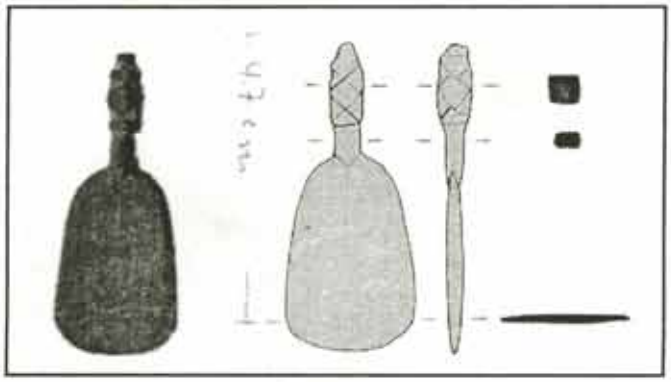

Figure-13.

Group 13: Tongue Press? (Fig.13)

Bought at Konya, this bronze instrument is 4.7 cm long. The wide part varies from 1.8 cm to 1.3 cm in width. The thin handle was broken; thus, this is an incomplete implement.

Though it is possible that it is a short and wide spatula, it should be a tongue press based on the thickness and strength of the wide part.

Group 14: Lithotomy Knife (Fig.14)

This Anatolian origin bronze instrument comes from an unknown provenance and date. Its length is 11.3 cm and its wide parts on both ends are 0.8 cm wide. Both ends are worn out and thin and sharp. It should be a double recurved scalpel or lithotomy knife. Its dimensions and form resemble those of the surgical instrument depicted on the marble votive stele recovered at Athens[9], which was interpreted as a lithotomy knife.

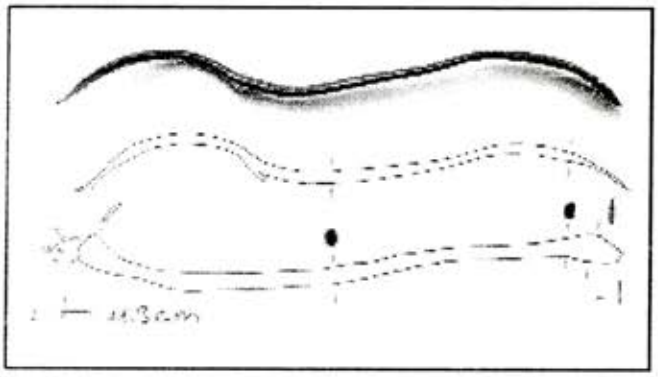

Figure-14.

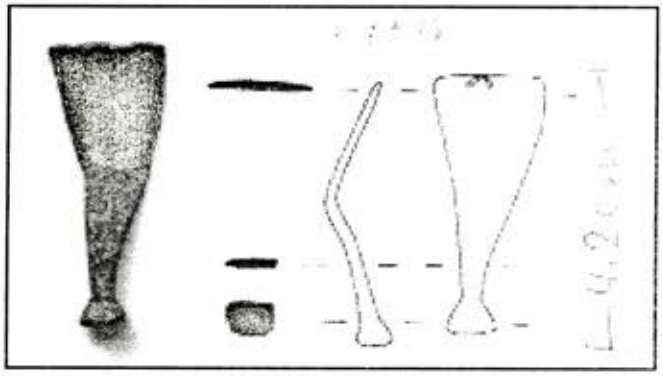

Figure-15.

Group 15: Meningophylax (Bone Instrument) (Fig.15)

This Anatolian origin bronze instrument may be of Roman times. It is 3.3 cm long; the bent part is 1.5 cm long and the wide part is 1.2 cm wide; the thick part is 0.4 cm in diameter. The instrument is a complete specimen.

Uzel gives the hypothetical drawing by Vidius of the instrument very similar to our example here taken from Milne[10]. The instrument given in the drawing is 5 cm long and its curved part is 1.8 cm long. Our example is very closely related to the example in the above mentioned drawing. It should be the bone instrument called meningophylax used for brain surgery. Celsus describes it as "the instrument with its left outer end bent slightly upward has a bronze end, which is very strong, short and hard.

Acknowledgement

I would like to pay my sincere to Prof. Dr. Nil Sarı, who provided the opportunity for discussion on some medical instruments from my collection, to Mr. Mete Kalyoncu, the Turkish representative of Aesculap, for helping with my work, to Dr. Hamdi Yakut, oto-rhino-laryngology specialist, who spared his time for me and shared his opinions.

Notes

1- Lawrence J. Bliquez, *Roman Surgical Instruments and Other Minor Objects in the National Archaeological Museum of Naples*, 1994, pp.122-123, Cat. No.56, 57.
2- Ilter Uzel, *Anadolu'da Bulunan Antik Tıp Aletleri*, Ankara 2000, pp. 84-85, Pl.XCVII/82, LXV/29.
3- Uzel, p.195, Pl.XXVI/57.
4- Aesculap General Catalogue, pp.386 ff.
5- Uzel, p.126.
6- Ralph Jackson, *Roma İmparatorluğu'ndaki Doktorlar ve Hastalıklar*, Istanbul 1999, p. 119.
7- Uzel, p.184, Pl.XII/26.
8- Bliquez, p.123-124, Cat. Nr.59 and Pl.XXVI/4.
9- Uzel, p.17, Fig.17; p.19, Fig.9 and p.140-141.
10- Uzel, p.113, Pl.CXXX/30.

Bibliography

Bliquez, J., Lawrence, *Roman Surgical Instruments and Other Minor Objects in the National Archaeological Museum of Naples*, 1994.

Jackson, Ralph (tr.by Şenol Mumcu), *Roma İmparatorluğu'ndaki Doktorlar ve Hastalıklar*, Istanbul 1999, p. 119.

Lyons, S. Albert (tr.by Nilgün Güdücü), Çağlar Boyu Tıp (*An Illustrated History of Medicine*), Istanbul 1997.

Mahboubian, Houshang, *Art of Ancient Iron, Copper and Bronze*, London 1997.

Modern *Medical Instruments Catalogues* by Aesculap.

Sabuncuoğlu, Şerafeddin (tr.by. İlter Uzel), *Cerrâhiyyetü'l-Hâniyye*, Ankara 1992.

Uzel, İlter, Anadolu'da Bulunan Antik Tıp Aletleri (*Ancient Medical Instruments from Anatolia*), TTK Publications, Ankara 2000 (in Turkish).