

Historical Article

Otolaryngological treatments in hagiographical Byzantine texts (324–1453 A.D.): miracles or reality?

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Abstract

Hagiographical texts of the Byzantine period contain a significant number of miraculous treatments of several diseases of the ear, nose and throat. The comparison of the conservative treatments referred to as well as the often concealed surgical interventions of these texts with those known from the medical texts of the eminent Byzantine physicians, lead the writers to conclude that a series of real treatments were carried out in the churches or in the Xenones (hospitals) of Byzantium.

Key words: History of medicine, ancient; Otolaryngology

Introduction

Hagiographical Byzantine texts containing the lives and miracles of the saints comprise a valuable source of medical information because their miraculous treatments frequently demonstrate clearly, or in a concealed way, methods of official medical practice. Indeed, conservative treatments or operations took place either in the Xenones (hospitals) of Byzantium which usually were set up beside monasteries or inside the churches themselves during incubation of the patients at night (Magoulias, 1964). Our research in these hagiographical texts found several real otolaryngological treatments which took place in these infirmaries, obviously carried out by specially trained personnel, who took on the form of the saints, exactly as in the ancient Asclepieia; the priest healers took on the form of Asclepius or members of his family (Marketos *et al.*, 1989).

In these texts an impression was given of the great incidence of the deaf and dumb who were cured through Divine intervention. In some texts of the 'Lives' of certain saints, the frequency of otolaryngological miracles is considerable, such as in the Life of Saint Symeon Stylites the Younger (sixth century), (Figure 1) in which, in over a hundred miracles, the relative percentage exceeds 13 per cent (Den Ven Van, 1962). This great incidence of successful miraculous treatments cannot be considered as fully accurate since the biographers did not mean the cure of real deaf-mutes but of all who had a transient speech defect or transient hearing

problem due to laryngitis or otitis. Thus, in the Life of St. Peter of Atroa (ninth century) a case is mentioned of a 'mute' boy, who was taken to the Saint because of a 'severe pain in the larynx', obviously laryngitis (Laurent, 1956). The case of a 'mute' girl (Figure 2) is also indicative; she was taken by her father to Saint Symeon Stylites the Younger for a cure because she presented repeated loss of consciousness, that the biographer attributed to possession by demons, and had bitten her tongue (Den Ven Van, 1962). Obviously the girl had



FIG. 1

St. Symeon the Stylites (Frontispiece of an 11th century Gospel of St. Luke, Dionysou Monastery, Mount Athos).

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FIG. 2

The miraculous treatment of a mute girl (detail from the 12th century icon of the Miracles of St. Eustratius, St. Catherine's Monastery, Sinai).

suffered from an epileptic attack during which she bit her tongue, a fact which caused her difficulty in speaking and thus the biographer described her as 'mute'. In other cases, however, the aetiology of muteness is referred to as appearing from birth, as in the case of the 12-year-old Damianus who was cured by St. Daniel the Stylites (fifth century) (Dawes and Baynes, 1948) or a 15-year-old girl who was cured by St. Symeon the Younger (Den Ven Van, 1962). Many further instances of deaf-muteness were attributed to possession. In all these cases a clear therapy is not referred to and they were cured miraculously. The anonymous writer of the *Life of St. Symeon* refers, indeed, to the case of a possessed man from whom, during the cure, the biographer saw demons escaping from ears, nose, mouth and other organs (Den Ven Van, 1962). Hagiographical texts, however, frequently describe conservative treatments with several substances and operations which were usually concealed so that it would appear that the patient was cured by Divine intervention. The comparison of these descriptions with the well-known treatments of the medical texts of the same period indicates that in many cases actual treatments and operations were performed.

Conservative treatments

In the *Life of St. Luke the Stylites* (10th century), the case of a mariner from Chalcedon is mentioned; he suffered from 'a heavy, painful laryngitis which almost caused suffocation' (Delehay, 1923). The

assistance of official medicine was of no use and the physicians only prevented him from drinking cold liquids, but his condition worsened and became life-threatening. The patient turned to the Church of the Saint and explained his problem to the personnel by means of signs because he could not speak. Then, according to the *Life*, the 'most experienced physician' ordered his assistant Deacon Leontio, monk of the Church, to give him three glasses of wine, which cured him. Possibly the priest-physician of the Church gave the patient a drug containing wine as a basic ingredient. Similar prescriptions with sweet wine of high alcoholic volume mixed with other substances such as honey and mulberry juice, the herb crocus and the like, are described by the eminent Byzantine physicians Oribasius (fourth century) and Alexander of Tralles (seventh century) referring to cases of inflammation of the larynx and pharynx (Raeder, 1933; Puschmann, 1963). Another patient, Nicetas, Drougarius of the Thema (Provincial Governor of an administrative Byzantine area) of Opsikion from Lydia of Asia Minor, presented (c. 850) with 'severe pharyngitis which almost caused him suffocation like that of the gallows rope' (exactly the same description is provided in the medical text of Alexander of Tralles about the inflammation of the throat) (Puschmann, 1963). He turned to the Church of St. Peter of Atroa, where he underwent repeated inunction of oil on the pharynx with the result that he spat out the 'disturbing and deadly pus which caused the suffocation, expectorated it and returned healthy to his duties' (Laurent, 1958).

In the *Life of St. Theodore of Sykeon* (sixth to seventh centuries) a series of miracles are referred to concerning the treatment of deafness, many cases of which are congenital. Among these is the cure of a girl from Laodiceia which took place with inunction of the external auditory canal with several substances and there followed an outrush of blood from the ears and restoration of hearing (Festugière, 1970). Further, with inunction on the ear and tongue of holy oil repeated for three days, St. Eutychius (sixth century) cured the 'mute' 14-year-old son of the local priest (Migne, 1868). The inunction of substances of oil containing several herbal additives constitutes a recognised therapeutic method described in the texts of Oribasius, Aetius of Ameda (sixth century) and Alexander of Tralles (Raeder, 1933; Olivieri, 1950; Puschmann, 1963).

St. Theodore from Sykeon cured the 'deaf' son of a Jewess from Nicaeapolis, who was taken to him by a Jew called Jujulus, using a puff of air in his ears (Festugière, 1970). In all likelihood the boy suffered from otitis. In this case Aetius and Alexander of Tralles describe a method of introduction of hot steam produced from a cauldron of boiling water or vinegar and which is covered air-tight with only one extended pipe which reaches the patients' ear so that the steam is introduced into the external auditory canal (Olivieri, 1950; Puschmann, 1963). However, a similar method of puffing in air containing finely ground herbs with a straw is referred to by Aetius in cases of inflammation of the ear. In diseases of the

throat and nose the same physician recommends blowing of such air into them (Olivieri, 1950). In hagiographical texts many cases of inflammation of the larynx causing aphonia are cured by the church personnel blowing into the mouth in this way. A characteristic case is that of a young boy, living in a village near Anastasioupolis during the reign of Maurice (582–602), who could only speak a little, Saint Theodore blew into his mouth three times and his speech was restored (Festugière, 1970).

Manipulations-possible concealed operations

St. Thecla's biographer, Basil, Bishop of Seleucia (fifth century), suffered from a very painful and seemingly incurable disease of the ear, as he writes, so much so that he could not hear and had tinnitus. The Saint appeared at night (obviously the physician of the Church during incubation) and held the lobe of the ear which he pulled to and fro with the result that plentiful pus ('ichor') came out and the symptoms stopped (Dagron, 1978). Clearly, with the manipulation of the physician, a rupture of the ear drum occurred. In many miracles, such as in the 'mute' and the 'deaf' in the Life of Saint Symeon Stylites the Younger, the treatment was carried out with introduction of the fingers of the Saint in the ears and mouth of the patient (Den Ven Van, 1962). This latter manipulation could be interpreted as the application of the method referred to by Aetius, that is repeated pressing of paristhmia and tonsils in cases of inflammation using the little finger with the aim of all the accumulated pus escaping (Olivieri, 1950).



FIG. 3

Saints Cosmas and Damien (Code 2, f. 197v. Panteleimon Monastery, Mount Athos).

In a case of otitis of the right ear of Theodosius, brother of Ephraem, abbot of the Monastery of St. Eugene, the Patron Saint of Trapezous (Trebizond), despite a variety of treatments by official physicians, an obstruction of the auditory canal appeared together with aphonia and oedema of the head around the ear extending to the throat. In all probability the disease began as otitis and extended to the larynx. Relatives summoned a monk from Palestine who knew herbal treatments. The latter supplied them with holy myrrh from St. Demetrios of Salonica with which they sprinkled the affected area. This treatment led to the release of abundant pus from the ear (possibly due to rupture of the eardrum). After that the pain and deafness persisted and his condition could not be cured by the physicians of the area of Trebizond and Sebastia who were again requested to help. The wife of the patient turned to the famous monastery of St. Eugene. The Saint made the sign of the cross over the affected area and immediately from the 'spiral area of the ear' (obviously the biographer, Metropolitan Bishop of Trebizond John Lazaropoulos – 14th century, having anatomical knowledge, means the internal ear and especially the area of the cochlea) a low sound was heard and plentiful blood and pus escaped and the patient's hearing, speech and health were restored. The miracle perhaps indicates an automatic rupture of the eardrum after a manipulation or possibly surgical intervention of the type of myringotomy by the physicians of the monastery (Papadopoulos-Kerameus, 1897). In the *Life of the Saint*, physicians Cosmas and Damien (fourth century) (Figure 3), the well-known Saints Anargyri (that is, the saints who cured without reward), a case of laryngitis of a man is referred to, caused by his drinking cold water. This condition resulted in aphonia and strangulation of the throat. His treatment was curious because one of the Saint-physicians, introduced 'a straw of a flute into the patient's mouth, thus effecting the escape of gastric air and liquids over a period of four days and his recovery' (Rupprecht, 1935). A possible explanation is that the straw which the Saints inserted may have been used as an intubation tube, a suitable treatment if there was difficulty in breathing due to diseases of the upper respiratory system.

Surgical operations

Incision in tonsillar abscesses

Apart from the above possible concealed operations, others are referred to in the hagiographical texts which are more apparent. Such a characteristic case is referred to in the Life of St. Peter of Atroa. A certain notary named Nicostratus presented with a disease of the throat which almost suffocated him. He was advised by skilful physicians but they all disappointed him and he reached the point when he could only just breathe and speak. In this condition he approached the Church, where 'the Saint made the sign of the cross and, as if practising a surgical operation, opened the area where he suffered and removed the liquid which had collected there'

(Laurent, 1956). In all probability an incision of a tonsillar abscess was made, an operation familiar to Byzantine physicians of his era. Its technique is accurately described by Aetius (Olivieri, 1950) and, mainly, Paul of Aegina (seventh century) (Briau, 1855).

Tracheotomy

A shepherd boy in an agricultural area near Corinth suffered from an almost fatal 'Synanche' (= laryngitis or pharyngitis), (Lascaratos, 1996). The treatment was carried out by Eumenios, a monk and obviously a physician of the Church of St Athanasius the Athonitis (10th century), (Figure 4), who used a lancet immersed in the blood of the Saint with which he pricked the throat of the boy, after sedating him so he would sleep all night. In the morning the boy awoke healthy and ate (Noret, 1982). The operation must have been performed in the Xenon of the Church, although the miracle is referred to as having been effected in the area where the boy lived which the monks visited to cure him, clearly in order to exaggerate the miraculous treatment. Another boy called Andronicus, who suffered from 'oedema of the larynx' which was probably due to deep neck infection, 'causing almost complete strangulation of the breathing and aponia', was taken by his mother to the Saint Theodosius the Younger (13th century).



FIG. 4

St. Athanasius Athonites (Code E 194, f. 1v. Megiste Lavra Monastery, Mount Athos).

The biographer confirms that 'the boy saw the Saint as a monk who pricked his throat with his walking stick and released the pus. His throat presented an incision as if made with a blade and his clothes were full of pus and blood, but he could now speak and breathe comfortably' (Nicodemos, 1974). The fact that the biographer mentions that the boy could talk comfortably after the 'operation' is obviously due to the result being exaggerated. The operation performed by the monk-physician in the two above instances was probably the well-known laryngotomy (= tracheotomy). The most detailed description of this technique comes from the texts of Paul of Aegina (Briau, 1855), who copied it from the lost work of the Greek surgeon Antyllus (second century, A.D.), who in his turn had been taught this method by his famous teachers of the Pneumatic School of Alexandria: Archigenes, Heliodorus and Leonidas (first century A.D.) (Neuburger, 1910). However, there is indication that the method was used under the name 'bronchotomy' still earlier by the physician Asclepiades (first century B.C.) (Guthrie, 1944). It is certain that the experienced surgeons of Byzantium applied the method, as they did with a great number of surgical operations, in the Xenones of Byzantium (Neuburger, 1910).

Incision in atresia of external auditory canal

In the *Life of St. Theodore of Sykeon*, another case is referred to, namely that of a congenital deaf-mute knife grinder who was healed by the Saint through the blowing of air into mouth and ear. However, the patient, describing the miracle, confirmed that he realised that the Saint had opened his ear with a hammer (Festugière, 1970). In such cases it is likely that a well-known operation was carried out for the stenosis or atresia of the external auditory canal described in detail by Paul of Aegina. The physician performed an incision of the membrane which occluded the canal with a straight, sharp-pointed bistoury (scalpellus in Latin) and following this he removed the remains with circular movements (Briau, 1855).

Removal of foreign bodies in the ear and pharynx

In other cases, however, deafness referred to in hagiographical texts can be due to foreign bodies entering the external auditory canal. In these cases the removal occurs with a special instrument called 'milotris', an ear speculum with a plate at its end (Milne, 1976), or a small hook or a 'tricholavis' (tweezers) or a straw which is sucked in by the mouth or, finally, with a small stick with wool at its tip, dipped in glue or resin with the aim of attaching the foreign body to remove it (Raeder, 1933; Puschmann, 1963).

Alexander of Tralles uses another method of provoking a sneeze with medicines, with the mouth and nose closed so as to bring out the foreign body with the sudden pressure of the air (Puschmann, 1963). This of course presupposes the existence of a perforated eardrum. It must be noted that, centuries before the description of the Eustachian tubes,

communication between the mouth and ear was known, as an extract from the Papyrus Ebers indicates (Weir, 1990). The Byzantine physicians were obviously familiar with this ancient knowledge.

If none of the above methods of the Byzantine physicians was successful, then they proceeded to surgical intervention for removal of the foreign body by post-auricular incision, which Paul of Aegina describes (Briau, 1855). The removal of a foreign body from the pharynx of an 18-year-old boy, son of an inhabitant of the town of Philea, called Melimoras, was attributed to a miracle of St. Cyril the Phileot (12th century). The text maintained that a fly entered the patient's nose and reached his pharynx with the result that the boy presented for a whole year with frequent attacks of loss of consciousness with spasms, grinding of teeth and foam from the mouth. His parents took him to the Church of the Saint where the authorities placed on his forehead the Saint's skull and inserted 'something' in the pharynx which reached his chest (the text does not clarify exactly what was used in order probably to stress the supernatural element). The youth immediately was restored to health (Sarcologos, 1964). The clinical picture is complicated and obviously there are two illnesses involved, that is probably frequent epileptic seizures attributed by the biographer of the Saint to the entry of a fly into the pharynx. But in the text the treatment seems to have had the aim of removing the foreign body with possible insertion of an instrument into the pharynx.

As the hagiographical texts have as a single purpose the exaggerated account of the saints' miraculous powers, frequently their narrative is complicated and not clear, as in this last case where the removal of the foreign body was ascribed by the writer to a period a year later than the actual event. This method is reminiscent of the technique of removal of foreign bodies from the pharynx as described by Paul of Aegina and Aetius. Firstly Aetius recommends the excitation of a cough or sneeze by using various medicines, while Paul of Aegina the bringing on of vomiting with a feather or finger which tickles the palate or the swallowing of a large chunk of bread. Both these writers, in the case of failure of these methods, recommend the repeated swallowing by the patient of a small piece of sponge which is covered by a linen cloth, tied by string. Following that, repeated pulling of the string until the foreign body (usually a fishbone) is attached to the sponge and is brought out together with it (Briau, 1855; Olivieri, 1950).

Infusion with special instruments into the ear

Another method of treatment for otitis, that maybe was performed in some miraculous treatments of the 'deaf' referred to above, was the infusion of a lukewarm solution of several substances dissolved in water using special syringes called 'otenytes' (it means, in Greek, instrument for infusion into the ear). This method is referred to by Galen (*De compositione medicamentorum secun-*

dum locos. Lib. III) and adopted by Alexander of Tralles (Kühn, 1826; Puschmann, 1963).

Phlebotomy

A young soldier from the Castle of Sura, a small town near the river Euphrates, who presented, as a complication of leprosy, with difficulty in speaking and an obstruction of the nose to the extent that he could not breathe, turned to the Church of St. Symeon Stylites the Younger. In this Church his nose was opened and his breathing restored after treatment of three days' duration with phlebotomy in many parts of the body. The satisfactory result of this 'celestial phlebotomy', as the text writes, was the escape of a suppurating malodorous bloody liquid from his palate until his nose and the rest of his body were clear (Den Ven Van, 1962).

Phlebotomy was a widespread method in that age for a variety of diseases and was performed not only on the basilic vein of the elbow but also on the veins of the forehead, nostrils and the lobes of the ear and obviously the hagiographical text means these areas. The method was also practised in many diseases of the larynx and in cases of epistaxis, as Aetius and Paul of Aegina describe (Briau, 1855; Olivieri, 1950). It is worth noting that the hagiographical text, describing the fruitless endeavours of the official physicians summoned previously to clear the nostrils of the patient, refers to methods well-known from the medical texts of Aetius (Olivieri, 1950). More particularly, the *Life* refers to the fact that the nose was repeatedly cleared with 'milothis' that is wool of sheep impregnated with several substances and oil, which was introduced deep into the nose with the aid of a suture which passed from the nose to the mouth and was cleared with palindromic movements (Den Ven Van, 1962).

Conclusion

In Byzantine hagiographical texts a significant number of actual conservative or surgical treatments is referred to. These took place in the churches or neighbouring Xenones, some of which possessed special departments (surgical, ophthalmological, gynaecological, pathological) such as the famous Xenon of Pantocrator (Figure 5), established by the



FIG. 5

The famous Xenon of Pantocrator of the 12th century (Woodcut of the 19th century).

Emperor John II, Comnenus, in the 12th century (Codellas, 1942). In these infirmaries experienced physicians and surgeons took on the form of the saints and proceeded to real treatment or operations during the nightly incubation. From the study of otolaryngological cases contained in the hagiographical texts, it appears that in actuality conservative treatments and some surgical operations (incision of tonsillar abscesses, tracheotomy, removal of foreign bodies from the ear and pharynx, myringotomy, incision in stenosis or atresia of the external auditory canal etc.), were carried out.

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