

A HISTORY OF TONSILLECTOMY:

TWO MILLENIA OF TRAUMA, HÆMORRHAGE AND CONTROVERSY

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THE evolution of modern surgery has been rapid. Operations, which fifty years ago were unthought of, are now being performed as daily routine procedures. While the most spectacular advances have probably been in cardiac surgery, there have been major advances in all the surgical specialities. Some operations, however, have been practised for many years with varying degrees of popularity. One such procedure is tonsillectomy (tonsillotomy), which has been performed for over two thousand years, its popularity waxing and waning with the century. While recent advances are of great interest both to medical and lay persons, it is both interesting and instructive to trace the history of this operation back to the earliest times.

Operations have been performed on the tonsil from the earliest times. The first mention of tonsillectomy refers to Hindu medicine about 1000 years B.C. In West's Review of the History of Medicine there is the following reference:—

“When the phlegm and blood are deranged in the soft palate and tonsils, they become large and like a full bladder, accompanied with thirst, cough and difficulty in breathing. When troublesome, they are to be seized between the blades of a forceps, drawn forward and with a semi-circular knife, the third of the swelled part is removed. If all be removed, so much blood may be discharged as will destroy the individual. If too little is removed, it will produce an increase in the swelling with fainting, swimming of head.”

Celsus (25 B.C.-A.D. 50), a Roman aristocrat, who lived about the time of Christ, described a method of complete removal of the tonsil (tonsillectomy) as distinct from partial removal.

“They ought to be disengaged all round by the finger and removed. If they are not separated by this method, it is necessary to take them up with a blunt hook and separate them with a scalpel; then to wash them with vinegar and anoint the wound with a styptic application.”

This description leads one to believe that tonsillectomy was a relatively common procedure at this time. However, the casual reference to the control of bleeding might indicate that Celsus did not perform this operation himself.

Galen (A.D. 121-201) was apparently the first writer to advocate the use of a snare for amputating the tonsil. It is believed that the snare became a more popular method of removing tonsils than that described by Celsus. This method continued to be used until some four hundred years later when Aetius (A.D. 490) advocated again partial removal of the tonsil. He thought that only the part of

the tonsil which projects and is easily seen should be removed, that is about half of the enlarged gland. "Those who extirpate the entire tonsil remove, at the same time, structures which are perfectly healthy, and, in this way, give rise to serious hæmorrhage."

Paulus Aegineta (A.D. 625-690) describes clearly and precisely a method of complete tonsillectomy, describing the prevention and treatment of post-operative bleeding. He wrote:—

"When, therefore, they are inflamed, we must not meddle with them; but when the inflammation is considerably abated, we may operate, more especially upon such as are white, contracted and have a narrow base. But those which are spongy, red and have a broad base, are apt to bleed.

"Therefore, seating the person in the light of the sun, and directing him to open his mouth while one assistant holds his hand and another presses down the tongue with a wooden spatula . . . we take a hook and perforate the tonsil with it, and drag it outwards as much as we can without drawing its membranes along with it, and then we cut it out by the root with a scalpel suited to that hand, for there are two such instruments, having opposite curvatures.

"After ligation, the patient must gargle with cold water or oxycrate; or, if hæmorrhage occurs, he may use a tepid decoction of brambles, roses or myrtle leaves."

Some 1,200 years are to follow before such a refined technique is described again. Unfortunately, after the death of Paulus, Europe descended into the Dark Ages, and tonsillectomy fell into disrepute. In fact, when the School at Salerno was at its height, tonsil surgery was limited to lancing of peritonsillar abscesses.

In 1509 Ambroise Pare, writing of tonsillectomy, thought it to be a bad operation, advocating gradual strangulation, using a ligature. If the tonsils were very big, he advocated a preliminary tracheotomy. Guilleameau, a pupil of Ambroise Pare, was also a strong advocate of this method. He pulled the tonsil out of its bed and then a noose of thread or wire was slipped around its base and tightened until the circulation was cut off. Needless to say, this method attained no great popularity with the patient, as it was accompanied by severe infection, not to speak of intense pain. Indeed, one writer of this era was moved to record these words about tonsillectomy:—

"This procedure is liable to resolve itself into physical combat between the surgeon and his patient."

About 1600 Peter Lowe, the founder of the Royal Faculty of Physicians and Surgeons of Glasgow, described the various methods of performing tonsillectomy in use at that time:—

1. *The Snare*: This was used as a method of strangulation.

"Knit the Ecrescence with a strong thread, then tyē it faster and faster every day until such time as it be cut and fall away of itself."

2. *The Ligature*: He considered this dangerous because it caused much loss of blood, and was very painful.

3. *Excision*: Lowe thought this method inadvisable. He says:—

"Pull them away with crossett or other instruments either whole or in pieces."

Surgeons of these times were cautious against removing too much tonsillar tissue, because of the accepted physiology of the tonsils at that time. It was thought that the secretions of the nose were formed in the brain and entered the nasal cavity through the cribriform plate of the ethmoid. The function of the tonsils was thought to be to absorb the secretions and send them back. If large amounts of tonsillar tissue were removed the secretions then gathered in the larynx, causing hoarseness. With these ideas in mind, one can readily appreciate why this operation had many opponents. Dionis, writing in 1672, was completely opposed to the operation.

“Some of our ancestors propose the separation and evulsion of these glands, which operation they very easily performed. I refer you the methods which they propose to do it, which I think very cruel . . . for the function these glands being to separate and filtrate the sacroities which serve to moisten the tongue, larynx and œsophagus; these parts must find themselves deprived of that dew, which is of great use in tempering of the air in the lungs, and sliding the nourishment into the stomach.”

Heister also denounced the operation in these words:—

“This operation is not only too severe and cruel, but also too difficult in the performance to come into the practice of the moderns, because of the obscure situation of the tonsils.”

Although very much in the minority, a courageous French surgeon at this time maintained “l’operation necessaire n’est ni dangereuse ni difficile.”

In 1828, Physick of Philadelphia, a pupil of John Hunter, modified an instrument designed by Benjamin Bell for removing the uvula, and used it as a tonsil guillotine. He wrote:—

“It is easy to cut off the whole or any portion that may be necessary of the enlarged tonsil. The operation can be fulfilled in a moment of time. The pain is very little, and the hæmorrhage so moderate that it has not required any alteration in four cases in which the Doctor has recently performed it.”

This tonsillotome became the recognised instrument for removal of the tonsils for over eighty years. Most of the changes during these years were modifications of the original guillotine itself. Fahnestock of Philadelphia and Morrell McKenzie produced important modifications of the original guillotine.

Morrell McKenzie wrote of post-operative bleeding following guillotining of tonsils:—

“As regards hæmorrhage after excision of the tonsils, I have only once met with a case where bleeding appeared actually to endanger life . . . and this was before I had discovered the means of arresting tonsillar hæmorrhage. . . .

“Half tsp. of tanno-gallic acid sipped at intervals is excellent. During deglutition, the styptic fluid is worked into the cut surface of the tonsil, and hæmorrhage is effectively restrained in all cases. Marsh-Mallows give great relief by forming a coating over the wounded surface and thus protecting it.”

In 1861 Borelli revived the old method of enucleation with the finger, as described by Celsus. It is evident that he appreciated the constant adherence of the lower portion of the tonsil, for he wrote:—

“A small piece which does not afford sufficient purchase for the finger in order to be torn away is generally left at the inferior part. It only requires, however, to be seized with forceps, when it can be separated by a slight movement of torsion.”

The first sign of a permanent change from partial to complete removal of the tonsils came in 1897. Ballenger in the U.S.A. realised that partial removal failed to alleviate symptoms completely in a large majority of cases. He began to remove the tonsil with its capsule, using a scalpel and forceps. His results, using this new technique, were so much better than partial removal, for a time the guillotine fell into disrepute in America.

Some ten years later, dissection tonsillectomy was pioneered in this country by George Waugh of Children's Hospital, Great Ormond Street. In 1909 he published, in the *Lancet*, his account of nine hundred cases of dissecting out the tonsils complete with capsule, using fine dissecting forceps and curved scissors. The operation was performed with the patient lying on his back with the head extended. The tongue was held out of the way with a stitch, and the mouth held open with a gag between the last molar teeth. Waugh became a great opponent of guillotine tonsillectomy, giving his reasons in these words:—

“Even in highly skilled and experienced hands, the complete removal of tonsils by means of a guillotine is a task of such technical difficulty as to be, except in a few rare cases, quite impossible.”

In the following year Whillis and Pybus in Britain and Sluder in America pointed out that a guillotine with a fairly blunt blade instead of a sharp one could be used in such a way as to enucleate the tonsil complete in its capsule. Whillis and Pybus gave the following figures for their series:—

Tonsil completely enucleated in its capsule -	-	-	74%
” ” ” capsule incomplete -	-	-	13.5%
” ” ” in two pieces -	-	-	9%
” ” ” in three pieces -	-	-	0.5%
Incompletely enucleated -	-	-	3%

From this time onwards the value of complete removal of the tonsil has been accepted. In recent years the most satisfactory results have come from tonsillectomy by dissection, but in many parts of Britain enucleation of the tonsil is still performed with considerable success.

The improvements in surgical technique in this operation have been associated with advances in anæsthesia. In the early days no anæsthetic agent was used. In 1772 nitrous oxide was introduced and ether and chloroform appeared about the middle of the nineteenth century, and these agents allowed the operation to be performed with some degree of safety. The introduction of intubation by Magill after the First World War gave the surgeon adequate time and satisfactory conditions in which to perform the operation.

Like many other operations, tonsillectomy waxes and wanes in popularity. The eagerness with which the lay public advocate tonsillectomy for all manner of complaints has undoubtedly led to unnecessary operating. Also, from time to time, some prominent citizen undergoes tonsillectomy, and the consequent publicity leads to a spate of operations on the tonsils. However, this operation, like most others, when performed on selected cases, gives excellent results.

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