THE REMOVAL OF FOREIGN BODIES FROM THE UPPER END OF THE ESOPHAGUS.*

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The upper end of the esophagus is that portion included between the clavicle below and the cricoid cartilage above. In this area foreign bodies usually lodge because these two points are the narrowest in the esophagus. We may say that the removal of foreign bodies is limited to this area meaning about an inch and a half or two inches in length. Success in this work depends upon two factors. A proper position of the patient's head and the manipulation of a short instrument of sufficient diameter to see and to work through. Foreign bodies, especially if flat, lodge in the esophagus with the edges lateral. As a rule they are located back of the middle line which accounts for the fact that the ordinary esophagoscope slips over the anterior plane and the entire esophagus is examined without finding the object. Such cases have been reported by skilled operators. The method of throwing the patient's head over the end of the table probably has something to do with failure to locate the foreign body at once, since the tense muscles tend to force the object back. In my own work I long ago discarded extension of the head in examining the upper end of the esophagus. I am convinced that relaxation of the muscles is the most important point in the examination and this can be obtained only with the patient's head straight on the table. The elasticity of the tissues allows great freedom of movement and by manipulation with the instrument the right angle of the throat becomes straight. The foreign body immediately comes into view and is seized with forceps and removed.

One who has tried extension of the head with its difficulties and then turns to the straight method will at once perceive the advantages of the latter. There are operators who are skillful in extension but they have become so, by long experience. When the novice attempts it, it is so difficult that he is tempted to give up in despair.

METHODS OF EXAMINING THE UPPER END OF THE ESOPHAGUS.

Extension: This method has reached a high state of perfection through the work of Dr. Chevalier Jackson, and Dr. J. W. Boyce who has developed a position of the head known as the "Boyce posi-

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tion." Dr. Jackson emphasizes the fact that the head must be held just right which necessitates a trained assistant. In this method the head and shoulders are pulled over the end of the table and held by an assistant. The objections to extension are the tenseness of the neck-muscles, which must be overcome by pulling and the position of the instrument which is suspended in the air with the left hand and which cannot be long held on account of the strain on the forearm. For these reasons I think a simpler method is to be preferred.

2. *Flexion*: This method was worked out by Dr. H. P. Mosher in 1908. Under general anesthesia the patient's head is turned to the left until the cheek almost touches the plane of the table. The head is then flexed on the chest. The operator sits at the left, facing the head and introduces the special spatula between the left bicuspid teeth. The tongue is pushed to the opposite side and the cricoid cartilage lifted which exposes the esophagus to the clavicle. So far as I know this method cannot be used without general anesthesia which exposes the patient to unnecessary risk. This objection does not apply to extension in which the patient's head can be forcibly held over the end of the table. It is, however, more difficult to hold the head than in the position which I will now describe. All I have said above applies to children, since a satisfactory examination can nearly always be made in adults under local anesthesia with the patient sitting.

3. *Straight position*: The position of the head is the same as in the straight method of direct laryngoscopy which I worked out in 1908. In this method the head lies straight on the table. In children up to 8 years of age no anesthetic is needed. Cocain is dangerous and since the method is designed to make esophagoscopy simple and practically free from danger, general anesthesia is not used. The little patient, securely pinned in a sheet, is placed on the table. The head is held by an assistant while the arms and legs are attended to by nurses. Jackson's old child's speculum is introduced between the incisor teeth and pushed rapidly down behind the larynx, which is gently lifted, exposing the upper end of the esophagus for about two inches or to the clavicle. The instrument may be pushed below the cricoid cartilage if desired. Since the speculum has a diameter greater than the average esophagoscope, one sees much better through it. Because of the relaxation of the muscles and the position of the instrument from above downwards and backwards, it is practically impossible to miss a foreign body which, once seen, is easily removed. With this method esophagoscopy can be done anywhere since no special assistants are needed. Since

developing the method I have used no other in the examination and treatment of the upper end of the esophagus. In adults the examination can nearly always be made with the patient in the sitting position under local anesthesia. The head is only slightly extended and the same instrument with a modified handle is used.

The speculum is introduced and the larynx pulled forward. In most cases a good view of the upper end of the esophagus is obtained. If necessary the tube may be passed down below the cricoid cartilage for half an inch or more. In this way I have succeeded in diagnosing tumors and foreign bodies. In three patients foreign bodies have been removed. From my experience I believe all foreign bodies can be removed through the esophagoscope. The most dangerous part of the work is the general anesthetic and with the further development of esophagoscopy practically all patients will be examined without it. Skillful operators use no anesthetic in children but claim that in adults ether is necessary to secure proper relaxation. This is not in accord with my experience. For many months I have succeeded in passing the esophagoscope with the patient sitting and prefer it to the prone position.

A contemporary in an article published recently makes the following statements: "Although the esophagoscope has greatly aided in the management of impacted foreign bodies in the esophagus, it has not and cannot entirely supplant the older methods. There are not a few cases in which the time-honored methods of operating are simpler, easier and quite as effective as esophagoscopy." He then describes the removal of common pins and fish bones with the old bristle bougie which he describes as an instrument than which none is more generally useful and effective and which can be employed with almost perfect safety. For the removal of coins and buttons often nothing is better than the old, bent esophageal forceps or a straight, smooth, blunt-pointed, toothless, eight-inch hemostat. He then cites several cases of foreign bodies in the upper end of the esophagus which he failed to locate for a long time with an ordinary esophagoscope because the instrument repeatedly slipped over the object.

I cannot agree with the conclusions of the author. To me it is clearly obvious that a short, wide esophagoscope in the hands of a careful, skillful operator, is far safer than blind groping with any forceps. The majority of fatalities in foreign bodies have been due to the blind use of forceps and bougies. I have never failed to locate and remove a foreign body within a few minutes with the instrument described above, and I attribute my success to the fact that

it is practically impossible to miss seeing the object in the esophagus. Since adopting the straight position of the head, I have found the work much easier. The operator stands to the left of the patient facing the head and passes the instrument with the left hand leaving the right hand free for operative work. In a recent article by a contemporary, attention is called to the advantages of the short, wide speculum in the location and removal of foreign bodies from the upper end of the esophagus in children.

In the *New York Medical Journal*, September 4, 1909, I reported the following case: A child 2 years old, while playing in the street, picked up a lead disc the size of a five-cent piece and attempted to swallow it. That night she vomited several times and was unable to swallow solid food. Two days later she was taken to St. Joseph's Hospital, where it was found she was only able to swallow a little liquid. A radiograph, taken that day, showed a shadow at the seventh cervical vertebra. The next day the patient was etherized and the upper end of the esophagus examined with Jackson's child-speculum in the extended position. On pulling the larynx upward the disc was seen tightly wedged in the esophagus in a lateral position. Jackson's short forceps was passed through the tube and the disc removed.

It will be seen that the use of the short, wide instrument is by no means new.

To illustrate the improved technic in the management of foreign bodies at the upper end of the esophagus in children, I wish to cite the following case: A little girl, 2 years old, was brought to St. Joseph's Hospital with a five-cent piece in the esophagus. The radiograph showed the nickel just below the cricoid cartilage. For a week the child had swallowed liquid food only. The little patient and held by an assistant. No anesthetic was used. Jackson's old speculum was passed back of the larynx which was easily lifted. The foreign body immediately came into view located in the back was pinned in a sheet and placed on the table with the head straight part of the esophagus with edges lateral. Pfau's extension forceps was passed, the coin seized and promptly removed. The whole procedure did not take two minutes. The child scarcely had time to cry and was taken from the table unhurt. In less time than it would have taken to get ready for the extended position the foreign body was removed.

The straight method with the short instrument makes esophagoscopy one of the simplest procedures in surgery.

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