

The Esophageal Surface of the Larynx, a Landmark during Laryngoscopy

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The structures of the oropharyngeal airway and the opening of the larynx as seen during orotracheal intubation have been well described. The esophageal surface of the larynx, however, is not generally considered a landmark for intubation, because this structure comes into view only if the laryngoscope blade has been passed posterior to the larynx as if for intubating the esophagus. We, however, consider the esophageal surface of the larynx important for the following reasons: 1) its recognition indicates that the laryngoscope

blade has been inserted too far and that withdrawing the blade will bring the glottic opening into view; 2) there are characteristics of the structure which are easily identifiable.

METHODS

During routine laryngoscopy for endotracheal intubation, the laryngoscope blade was deliberately inserted posterior to the larynx into the esophagus in an effort to expose the esophageal surface of the larynx. This was done in 20 patients, and the esophageal surfaces in five of the patients were photographed. The larynges of three recently-deceased humans were examined also, with the structures oriented so that the esophageal surfaces were at the angle which would be seen by the laryngoscopist.

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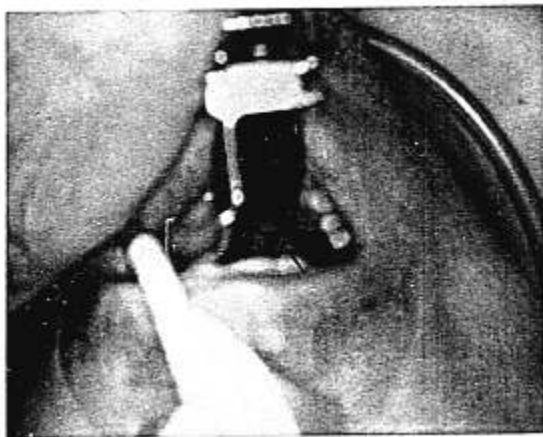
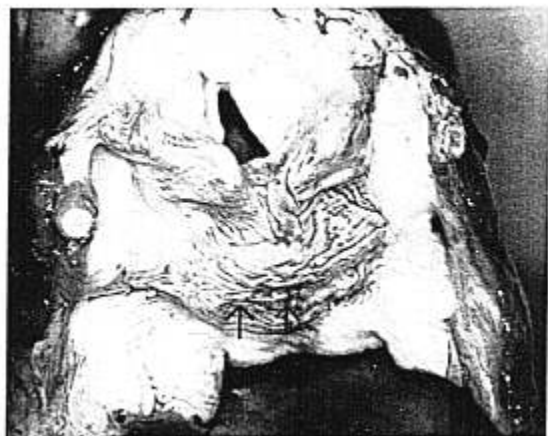


FIG. 1. Esophageal surface of the larynx as viewed with a Magill blade. The glottis is anterior and proximal to the structure visualized. Note transverse folds of mucosa and convexity in sagittal and transverse planes. A nasogastric tube passes posterior to the bulge in the mucous membrane produced by the cricoid cartilage.

FIG. 2. Esophageal surface of a larynx removed at autopsy. Area indicated by arrows is the part indicated in figure 1. Note the loose folding of mucosa.



RESULTS

The esophageal surface of the larynx is convex posteriorly in both sagittal and transverse planes (fig. 1). The mucosa overlying it is loosely attached to the underlying structures and, because of the looseness of the attachment, can be pinched or picked up with a forceps. The mucosa is often furrowed in transverse folds resembling rugae (fig. 2). This is the only structure in the oropharynx that has transverse folds, or rugae. When the larynx is cut in the sagittal plane, it is found that the convex portion of the structure is made of the posterior portion of the cricoid cartilage.

DISCUSSION

Although it is a minuscule point, recognition of the posterior surface of the larynx by the inexperienced laryngoscopist allows him to orient himself properly and then to correct his attempts at intubation. Instead of further attempting to locate the larynx distally, the proper maneuver is to withdraw the laryngoscope blade. Its convexity in the transverse and sagittal planes and the loosely attached mucous membrane, frequently arranged in transverse folds, which cover it identify the structure without doubt.

Surgery

PREVERTEBRAL SURGERY Neurologic syndromes can develop during prevertebral operations under epidural anesthesia. The causes are damage to the cord from trauma, ischemia, infection, and chemical damage. A normal blood pressure is essential for the maintenance of blood flow and oxygen supply to the cord. Surgeons and anesthesiologists must work together to prevent these syndromes. When they do occur, a thorough work-up, including physical check-up, laboratory tests, and radiographic, angiographic, and electromyographic studies, should be done. (*Usabiaga, J. E., and others: Neurological Complications of Prevertebral Surgery under Regional Anesthesia, Surgery 68: 304 (Aug.) 1970.*)