LARYNGOPYOCELES

By E. GLATZ (Bath)

LARYNGOCELE, the seat of the pyocele, is a pathological enlargement of the appendicular structure of the laryngeal ventricle. This enlargement can be of quite insignificant size and can remain so for a lifetime without causing any symptoms. One finds them inadvertently, though very rarely, in X-rays of the larynx. Once they start to enlarge, they do it in a fashion not unlike a hiatus hernia of the stomach. They can reach considerable size and lead to definite symptoms. These can be purely laryngeal, such as hoarseness, breathlessness, stridor, etc. This happens when the herniation of the ventricular appendix is confined to the intralaryngeal space, i.e. when the enlarged sac lies between the thyroid ala and its intralaryngeal mucosal lining. This variety presents itself as a bulge above the vocal cord. If the enlargement takes the opposite direction, then it burrows along the inner surface of the thyroid ala in an upward direction and eventually herniates through the thyrohyoid membrane and appears as a lateral swelling of the neck. In both varieties the neck of the sac remains short and narrow and terminates in the laryngeal orifice of Morgagni's Ventricle (see Fig. 1).

The usual classification of Laryngoceles is (a) Internal (Intralaryngeal), (b) External (swelling in the neck), (c) Mixed—combined Internal and External. A fully developed Laryngopyocele is of the mixed variety.

Laryngoceles are comparatively rare. Until recently they were rarely encountered, or even thought of by laryngologists and still less by the general surgeon in cases of swelling of the neck. In recent years they have received more attention in the literature and we have become more conscious of their existence. Their symptomatology and treatment have been well defined and their removal does not present any major surgical problem.

Laryngoceles are situated in an area where one would expect to find them exposed to infections following respiratory diseases, or pharyngeal septic episodes. This is not the case. The relative immunity of the sac against infections may in my opinion be due to two factors. One is the presence of the intralaryngeal bulge pressing on the neck of the sac which itself has a narrow lumen, thereby providing a certain degree of protection against the entrance of infected material through the mouth of the laryngeal ventricle. The second factor in a mixed type is that the cervical muscles exert a pressure on the external end of the sac and are

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apt to milk back any septic material into the larynx (Fig. 1). This happens sometimes with an audible sound of regurgitation.

Laryngopyocele can presumably develop only, when for some length of time the tissues around the orifice of the ventricle become œdematous

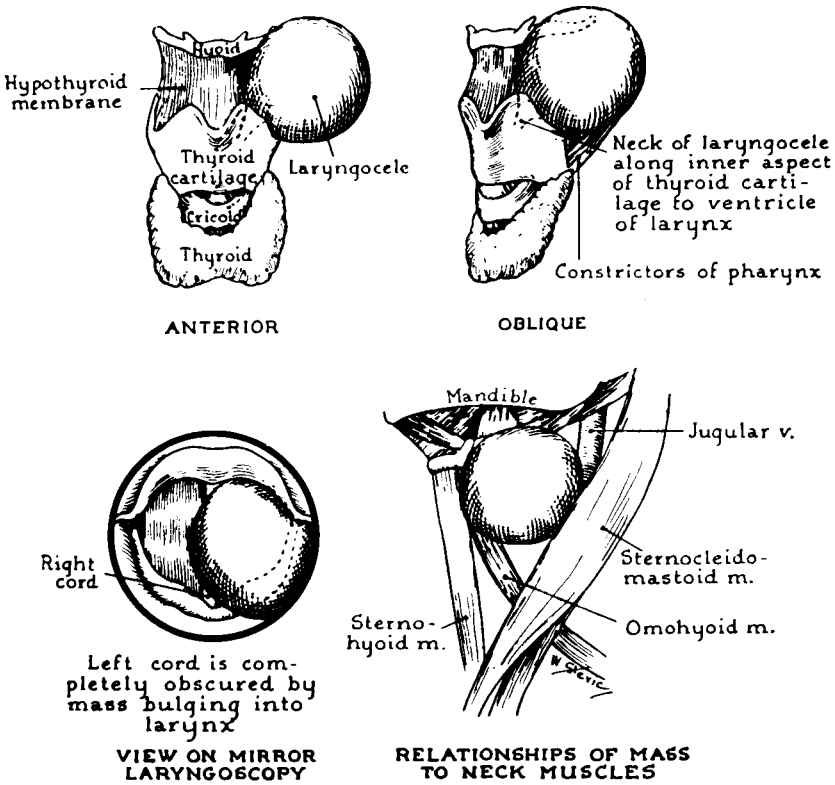


FIG. 1.

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and exert a valvular action against the emptying capacity of the sac. Freedman found in a pyocele granulations at the point of entry from the ventricle and thought that the granulations were damming back secretions in the sac.

Laryngopyocele is said to be an extremely rare disease. Terracol and Guetta (1954) says "While laryngocele is a rare condition, laryngopyocele is a medical curiosity." Once a laryngopyocele develops and is not recognized as such, it can be a fatal disease. The very fact that it is so rare harbours the danger of diagnostic fallacies. To my knowledge there were only eight cases described in the literature, some of them fatal.

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Chalier and Dunet (1920), Kistner (1924), Tapia (1932), Zöllner (1932), Terracol (1953), Mays (1954), Chessen and Luter (1955), and Beautyman (1959). As late as in 1959 Beautyman and his co-workers in the summary of their case have this to say: "Occasionally laryngoceles become infected and cause death from asphyxia through emptying of their contents into the larynx, trachea and bronchial tree. The importance of prompt diagnosis and treatment are stressed. It is pointed out that the principal difficulty in the diagnosis of this condition is ignorance of its existence."

One wonders whether laryngopyocele is as rare as that. This seems to be more than doubtful. We have only to look back into the pre-antibiotic past and recollect the cases of parapharyngeal abscesses. They were drained through a cervical incision. Often enough they led to mediastinitis, or septicæmia. I am not at all sure now what was really happening in the parapharyngeal space then, and whether some, in fact, were laryngopyoceles. During the past thirty years the author has had the opportunity to deal with one case of laryngopyocele (see below). It is a good guess that he might have missed some during those three decades. If he did, then he probably was in good company.

Case Report

Mr. R. B., 57 years old, was admitted under my care to the E.N.T. Dept. in Bath on November 2nd, 1957. There was a large and painful swelling of the left neck, some stridor and severe dysphagia. There was a previous history of frequent bronchitis. He had noticed a swelling in the left cervical region for about a year. This had enlarged and become tender during the past ten days during an attack of influenza. For the previous 24 hours he was in great discomfort.

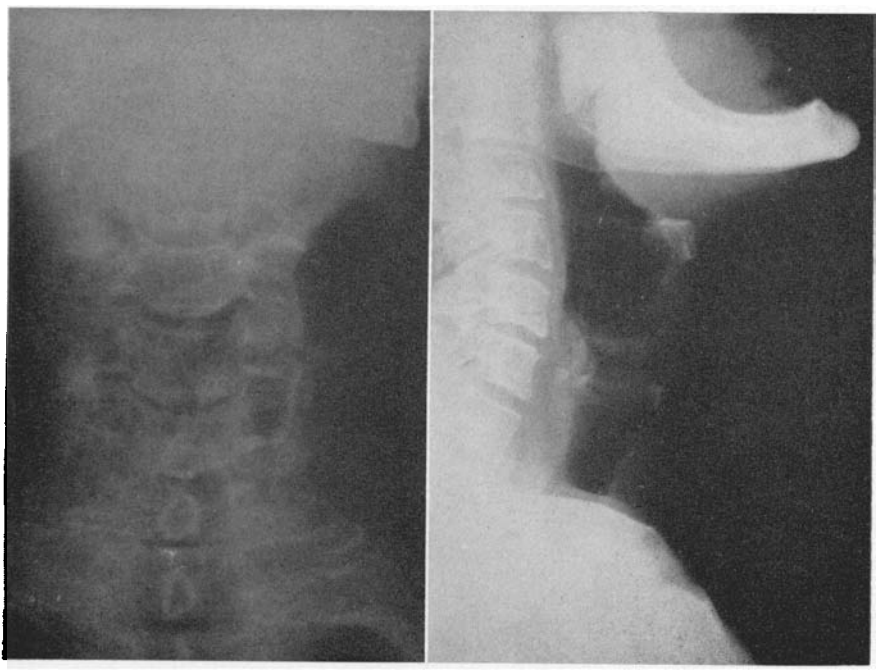
On admission: Ill looking man; temperature 101°F.; marked inspiratory stridor; slight trismus and marked dysphagia. Extensive, tender swelling of the left neck. The left hypopharynx bulged with red, smooth swelling. The swelling commenced at the lower pole of the tonsil, filling the left pyriform fossa. The left arytenoid fold and inner surface of the left thyroid cartilage were also bulging, hiding the left vocal cord from view. The entire larynx was displaced to the right. Systemic penicillin and streptomycin were started. Towards the evening the stridor became more pronounced necessitating tracheotomy. Blood Count reported by Dr. H. Gibson, Hb. 105 per cent., Total whites: 10,000, Polymorphs 74 per cent., Eosinophils 2 per cent., Lymphocytes 20 per cent., Monocytes 4 per cent. B.S.R. Westergren fall in one hour = 98 mm. (maximal). Granulocytes showed left shift ++ with toxic degeneration+.

Diagnosis: Parapharyngeal abscess, or secondary infection around a growth. Because of the previous history of a cervical swelling and of

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the suspicious intralaryngeal bulge it seemed also possible that this might be a case of an infected laryngocele.

On the following day the intralaryngeal bulge was more marked. The patient was taken to the theatre. In the tonsil position, with a long bladed Davis's gag in place, the intralaryngeal bulge was incised under general anæsthesia using a cuffed and inflated tracheal tube through the tracheostoma. The incision produced a fountain-like gush of pus. The



FIGS. 2 and 3.
X-rays taken two days after evacuation of the Pyocele.

cervical swelling started to collapse and after gentle pressure on the neck emptied itself entirely. Five ounces of pus were produced. A residual flaccid intralaryngeal swelling still remained. The diagnosis of a laryngopyocele seemed almost certain. The X-rays taken two days later clinched the diagnosis. These showed now a large and empty left laryngocele and a rudimentary one on the right side (Figs. 2 and 3). Culture of the evacuated pus grew *Streptococci pneumoniae* ++, resistant to penicillin. The treatment was changed to Tetracycline. The patient made a speedy recovery and was decanulated on the fifth day. Tomographs taken the same day still showed a bulge above the left vocal cord (Fig. 4). He left hospital on the November 20th and was put on the waiting list for removal of his laryngocele.

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2.1.58. A bulging on inner surface of left thyroid ala slightly more marked than at the time he left hospital. The left cervical region also appeared fuller than before.

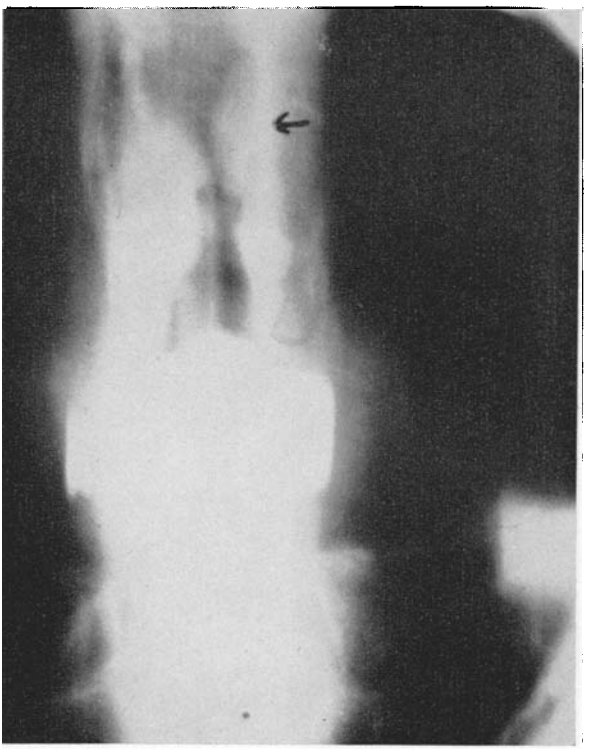


FIG. 4.
Tomograph five days after evacuation.

4.8.58. Excision of a mixed type of laryngocele (Fig. 5). The dissection was easy in the absence of infection.

Report on specimen by Dr. R. Bishton:

Gross: Sausage-shaped thin-walled cyst (6 cm. long × 2 cm. diameter) apparently filled with air. Section taken from fibrous tissue sheath.

Histology: The loose connective tissue external to the sheath shows no malignancy and consists of connective tissue with a few muscle fibres (Fig. 5).

Summary

A case of laryngopyocele is presented. Diagnostic difficulties are discussed. A two-stage operation is suggested; (a) Intralaryngeal incision in the acute stage; (b) Excision of laryngocele in the quiescent stage.

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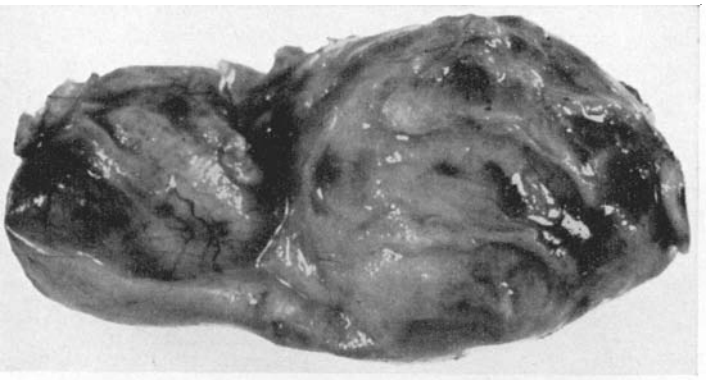


FIG. 5.
Excised Laryngocele.

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