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Acquired lateral pharyngeal diverticulum*

by

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Introduction

We report a case of acquired lateral pharyngeal diverticulum which presented on a radiograph as a large pharyngeal pouch.

Case report

A 61-year-old man was admitted to hospital with a one-year history of dysphagia. He complained of pain and a sensation of suffocation during swallowing. Food often stuck in his throat, a painful condition only alleviated by vomiting. He was unable to ingest solid food. Physical examination and routine laboratory studies revealed no abnormalities and no abnormal mass was palpated in the neck. Several laryngeal examinations including direct laryngoscopy under general anaesthesia were normal. After the patient had swallowed, the frontal radiograph during a Valsalva manoeuvre showed a localized bulging of the left hypopharyngeal wall (Fig. 1). The symptoms worsened and a new barium X-ray examination with video-tape recording showed that the bulging of the left hypopharyngeal wall had progressed, though a true isthmus could not be demonstrated. Residual barium was noted within the recess after the main bolus had passed (Fig. 2). A neck exploration was then performed. At first the diverticulum could not be identified. An overpressure was then established through the nose by means of a Sengstaken tri-lumen tube with a cuffed tube in the larynx and an adhesive plaster over the lips. The diverticulum immediately appeared penetrating the thyrohyoid membrane just above the left superior laryngeal nerve. The neck of the diverticulum was ligated and the sac left *in situ*. The patient remains completely free of symptoms five months after the operation.

Discussion

True lateral pharyngeal diverticula penetrate the thyrohyoid membrane and are very rare (McMyn, 1957; Bachman *et al.*, 1968; Komisar, 1983). They may be congenital (remnants of the branchial duct system) or acquired. Because the condition is infrequent there is some confusion concerning the differentiation between congenital diverticula, acquired diverticula and simple localized bulging of the lateral pharyngeal wall. The classification of lateral pharyngeal protrusions given by Bachman and co-workers (1968) is very useful in distinguishing these conditions.

To understand the lateral pharyngeal protrusions a familiarity with the anatomy of the hypopharyngeal wall is necessary. The lateral wall is formed by the thyrohyoid membrane which acts as a floor. Several muscles lie in close apposition to the membrane and afford additional support to the lateral wall of the upper hypopharynx. These muscles, however, fail to overlap completely so that a portion of the thyrohyoid membrane receives no muscular support. Lateral to this 'weak area' there is only areolar tissue in which run the great vessels of the neck.

Especially in elderly persons, these 'weak areas' of the lateral pharyngeal wall are quite large or thin, or both, and the elevated pressure during the pharyngeal stage of swallowing or a Valsalva manoeuvre causes lateral bulging of these areas, most often bilaterally. These pouches, which cause no symptoms, are also named pyriform recesses, or just 'ears', and may vary in size from very small up to 1.5 cm. in diameter. Abnormally large pharyngeal pouches up to a diameter of 2 to 3 cm. can be the result of persistence of increased intrapharyngeal pressure (as in trumpet players) or of pathological weakness of the lateral wall. Artificially-created large pouches have been described among native

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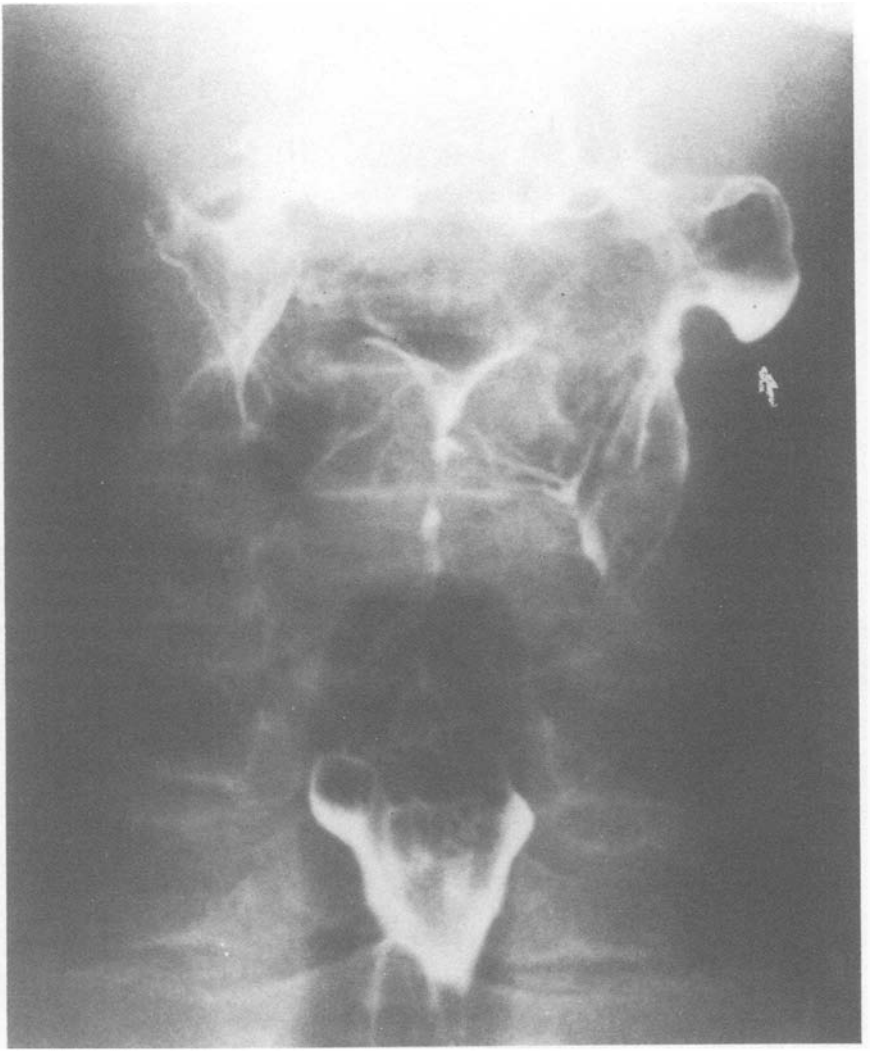


FIG. 1
X-ray (antero-posterior view) during swallowing showing localized bulging of the left hypopharyngeal wall (arrow).

Indians who enlarge their tonsillar fossae by digital manipulation so that coins can be hidden there (Atkinson, 1952). Our patient had no social or occupational history suggesting chronically increased intrapharyngeal pressure.

Acquired lateral pharyngeal diverticula are of the pulsion type, and are most often unilateral. The location and aetiological factors appear to be the same as in cases of prominent hypopharyngeal 'ears'. Radiographically they are best visualized in the frontal view and appear as a barium-filled sac of varying size connected to the bulging hypopharyngeal 'ear' by a short neck. In the cases described by Backman and co-workers (1968) the isthmus between the hypopharyngeal bulge and the sac of the diverticulum was short and somewhat wide, apparently because once the thyrohyoid membrane is penetrated the neck of the sac begins to dilate. According to their radiographic criteria the diverticulum in the present case belongs to the abnormally large pharyngeal pouches because it did not have an isthmus. However, the operation

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FIG. 2
X-ray (antero-posterior view) after swallowing showing retention of barium in recess (arrow).

revealed an acquired lateral pharyngeal diverticulum which had protruded *through* the thyrohyoid membrane. Apparently it is difficult from X-ray examination to differentiate between these two conditions.

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