

PHARYNGOCELE: A CASE REPORT OF A RARE CAUSE OF BILATERAL NECK SWELLING

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ABSTRACT

Pharyngocele is a rare condition of the lateral pharyngeal wall, characterized by local bulging through one of the weak areas of the pharynx and very few cases regarding pharyngocele have been reported in the literature. Historical review and description of a new case of this rare condition in a 32-year-old male who presented with bilateral pharyngocele is reported.

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Introduction

Pharyngocele is a lateral pharyngeal bulging thought to be caused due to frequent repetitive increases in the intrapharyngeal pressure and loss of the muscular resilience associated particularly with advancing years. Pharyngocele was first described by Wheeler⁽¹⁾ in 1886 in a patient who had been in the army and took a considerable pride in his ability to command a full brigade in the parade ground with his own voice. It will be interesting from historical point of view to mention that artificially created large pharyngocele or pouches have been described among native Indians who enlarge their tonsillar fossae by digital manipulation so that coins can be hidden there and be delivered when required by tilting the head forwards and effecting a vomiting motion⁽²⁾. This diverticulum probably lies between the superior and middle constrictor muscles, and if not used or maintained constantly it would disappear⁽²⁾.

Lateral pharyngeal diverticula or pharyngoceles arise from the posterior faucial pillar, and from the upper or lower part of the pyriform fossa, being emphasized by raised intrapharyngeal pressure. They might be of two types. One congenital type attributed to a branchial cleft remnant, which opens into the pharynx usually at the lower pole of the tonsillar fossa by the posterior faucial pillar. Most of these arise from the second branchial cleft and they are usually unilateral. The second type is acquired. The precipitating factor for their appearance being raised intrapharyngeal pressure causing protrusion or dilatation of pharyngeal mucosa through areas which

are developmentally deficient in muscle, as those of the base of the pyriform fossa.

Anatomically the pharyngeal wall has two weak areas laterally. One superior area situated at the junction of the superior and middle pharyngeal constrictor muscles located at the region of inferior pole of the tonsil and lateral side of the vallecula. The other inferiorly situated between the middle and inferior pharyngeal constrictor muscles and the thyrohyoid membrane located in the region of the base of the pyriform fossa which is the most likely site of the pharyngocele.

Case Report

A 32-year old male professional musician was referred from his military unit to the ENT clinic of Queen Alia Military Hospital complaining that he develops large swelling in both sides of the neck when he plays his musical instrument (Trumpet) accompanied with minimal discomfort in his neck since many years. He reported that this swelling was increasing in size gradually through the last few years. There were no complains, symptoms or history of any medical or family disease.

Head and neck examination of the patient was normal except for the presence of an external swelling in both sides of the neck, lateral and slightly above the thyroid cartilage and anterior to the upper one third of the sternocleidomastoid muscle when he increases his intrapharyngeal pressure by performing Valsalva's maneuver (Fig. 1). Indirect laryngoscopy and fiberoptic endoscopy of the larynx and hypo pharynx revealed

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normal vocal cords and supra laryngeal structures but wide and deep pyriform fossa bilaterally, no opening at the base of the pyriform fossae could be seen. Antero-posterior and lateral soft tissue neck plain X-ray was normal but with Valsalva's maneuvers it showed a huge air sac at the region of the hypo pharynx bilaterally (Fig. 2). Barium swallow performed with an increase of the intrapharyngeal pressure showed delineation of the barium in the pyriform fossa on both sides (Fig. 3). Neck ultrasound, done with an increase of intrapharyngeal pressure, revealed air containing sacs bulging on both sides of the neck. A neck axial CT scan without and with increased intrapharyngeal pressure was performed for further evaluation and showed huge air sacs bulging in both pyriform fossae (Fig. 4). All these investigations confirmed the diagnosis of bilateral pharyngocele.

No surgery was performed on our patient in view of the minimal complaint and the lack of severe symptoms such as dysphagia, regurgitation of undigested food or nocturnal coughing and choking which some patients with pharyngocele may have. He was advised to stop playing the trumpet and to change to another non-wind musical instrument. The patient was seen three months later and he was doing well with conservative treatment.

Discussion

True lateral pharyngeal diverticula which penetrate the thyrohyoid membrane are very rare⁽³⁾, and few cases have been reported in the literature. As discussed earlier the lateral pharyngeal wall has anatomically two weak areas between the upper and the middle, and between the middle and inferior pharyngeal constrictor muscles and if certain mechanical factors are present in addition to a degree of weakness within that individual, bulging of the mucous membrane will appear and become exaggerated as time progresses⁽⁴⁾. This is especially true if there is continuous and long standing increases in the intrapharyngeal pressure as in glassblowers or wind musical instruments players, as was the case in our patient who was in a musical military unit and was playing a wind instrument (Trumpet) for 15 years.

Protrusions from the pharyngeal wall were described by Ludlow in 1764 and later by Zenker.⁽⁴⁾ Since that time many descriptions of the protrusions or hernias from this area have appeared in the literature as: diverticulum, pharyngeal pouch, pharyngocele, arocele, branchial cyst, pulsion pouch, pulsion diverticulum, and lateral pharyngeal diverticulum. The first radiological documentation of pharyngocele was reported in 1944 by Hankins⁽⁴⁾.

Patients with pharyngocele are in their fifth or sixth decade of life but it can occur in young adults as well⁽⁵⁾. Pharyngocele is a vary rare condition according to

Montini and Ostri⁽⁶⁾ in 1987 but Wilson⁽⁷⁾ in 1962 suggested that it is not uncommon if looked for especially in the elderly. Norris⁽⁴⁾ in 1979 reported 24 cases with pharyngocele over two years and he mentioned that pharyngoceles are usually unilateral and the age range of patients with pharyngocele recorded in the literature is from 31 to 75 years with a mean of 51.8 and a median of 54 years and the gender predilection is strongly male with an 8 to 1 ratio⁽⁴⁾.

Differential diagnosis of pharyngoceles should be made from laryngoceles because whilst laryngoceles are air sacs arising from the laryngeal ventricle and saccule and expand into the neck through the thyrohyoid membrane as external type of laryngoceles or stay within the larynx presenting as internal laryngocele⁽¹⁾, the pharyngoceles are air containing sacs arising from the floor of the pyriform fossa and expanding through the thyrohyoid membrane into the neck (Fig. 5). Barium swallow during Valsalva's maneuver makes the diagnosis of pharyngocele very easy. Differential diagnosis of pharyngocele should be made also from internal jugular phlebectasia; this is a saccular dilatation of the internal jugular vein, which presents as an anterior neck mass that appears on straining. Neck Doppler Ultrasound will show significant difference in the size of the internal jugular vein during rest and during Valsalva's maneuver⁽⁸⁾.

Soft tissue neck X rays, barium swallow and CT scan with increased intrapharyngeal pressure are all very helpful in demonstrating the presence of a pharyngocele.

Sonography is a new method for diagnosing pharyngoceles; Chevallier *et al* reported a case of pharyngocele in a 25 year-old with left cervical mass diagnosed by sonography. This mass had sonographic properties of air and it communicated with and extended to the pyriform sinus as well as deforming the left lamina of the thyroid cartilage.⁽⁹⁾

Our patient had large bilateral pharyngoceles. He was a young fit soldier, and fortunately he had no severe symptoms like neck discomfort, throat pain, dysphagia, regurgitation or sensation of food sticking, dysphonia or pulmonary manifestations. Some patients with pharyngoceles may complain of one or more of these symptoms and may make surgical treatment a consideration.

Treatment of pharyngocele in general is conservative and no treatment or surgery is required if there are no severe symptoms. Conservative treatment consists of healthy dietary habits, good oral hygiene, and avoidance of increases of intrapharyngeal pressure. In patients with the severe symptoms mentioned above surgical excision through an external neck approach might be considered. In fact very few cases of pharyngocele, which have been reported in the literature, were treated surgically.



Fig. 1. Showing swelling of both sides of the neck without and with Valsalva's maneuver

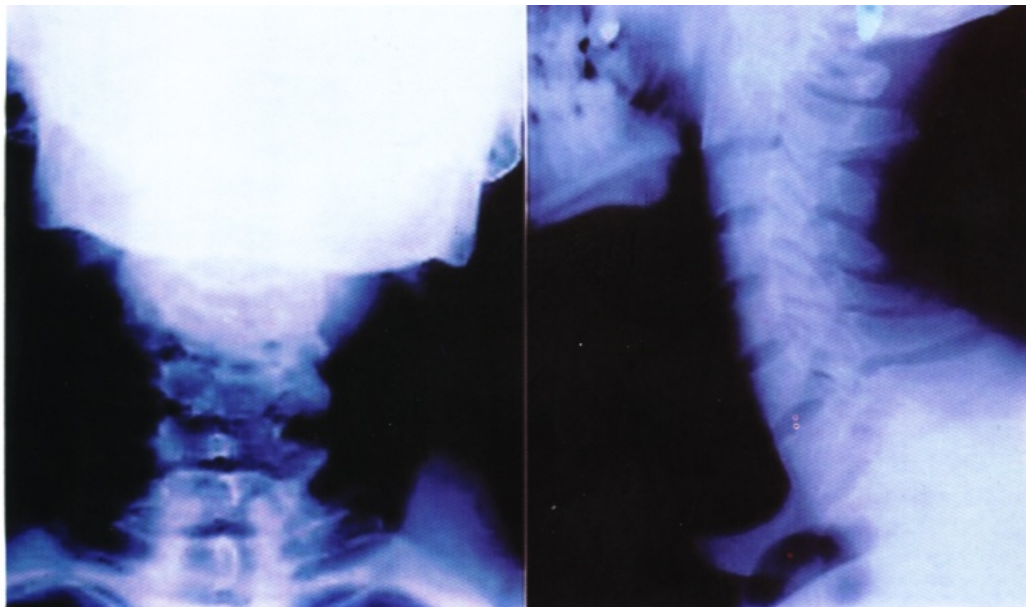


Fig. 2. Showing AP and LAT view soft tissue neck X-ray, huge air sacs bilaterally

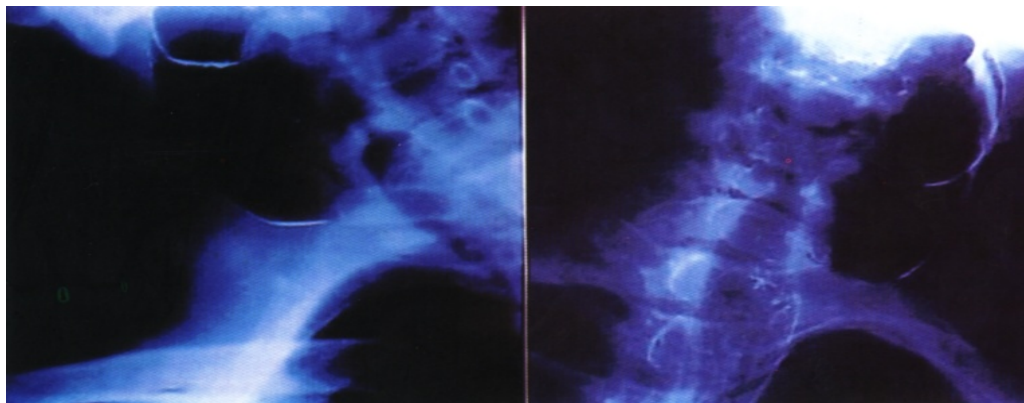


Fig. 3. Barium swallow showing delineation of Barium at both pyriform fossae

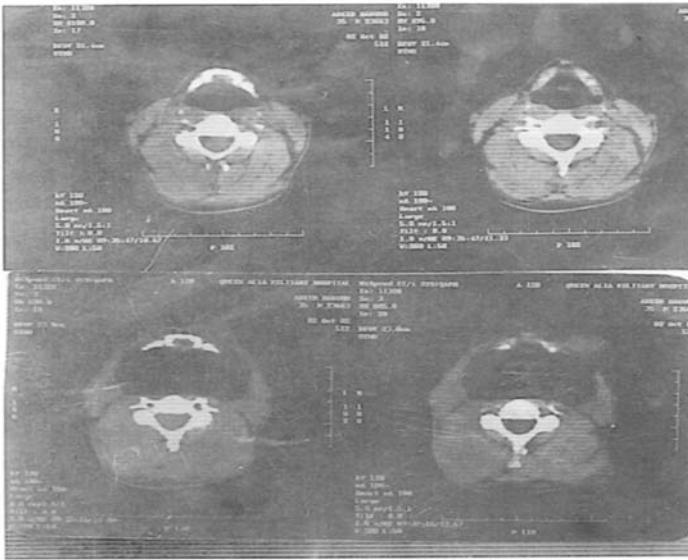


Fig. 4. Axial CT scan neck without and with Valsalva's maneuver showing huge air bulging of both pyriform fossae

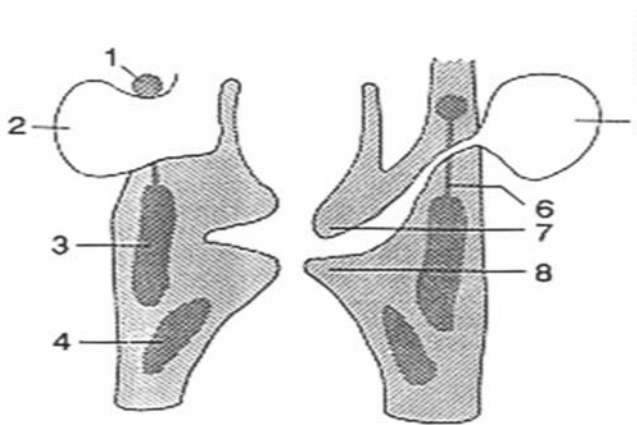


Fig. 5. Diagram showing the difference between a pharyngocele 2 and a laryngocele 5

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