

CASE REPORT ΕΝΔΙΑΦΕΡΟΥΣΑ ΠΕΡΙΠΤΩΣΗ

Zenker's diverticulum presented with chronic dry cough and recurrent pulmonary infections

A 76-year-old male presented chronic dry cough, recurrent pulmonary infections and dysphagia. Cervical computed tomography (CT) and esophagogram revealed an intermediate-sized Zenker's diverticulum in the posterior wall of the upper esophagus. The patient underwent diverticulectomy without cricopharyngeal myotomy, which is a therapeutic option for elderly patients. Zenker's diverticulum should be included in the differential diagnosis of patients with manifestations such as chronic dry cough, recurrent pulmonary infections and dysphagia, especially in the elderly.

Zenker's diverticulum is a rare (2 per 100,000), pulsion-type diverticulum of the upper esophagus, which is mainly presented in the elderly and is ten times more common than other esophageal diverticula. It is a false diverticulum, since the mucosa and submucosa protrude through an area of natural weakness and it does not involve the muscular layers of the posterior wall, creating a pouch. This protrusion generally occurs in Killian's triangle, an area between the inferior constrictor and cricopharyngeal muscles.¹⁻⁴ Here, the case of a 76-year-old male with chronic dry cough, recurrent pulmonary infections and dysphagia due to Zenker's diverticulum is presented, the latter having been found during investigation of the patient's symptoms.

CASE REPORT

A 76-year-old male was referred to our department due to chronic dry cough, recurrent pulmonary infections and dysphagia.

ARCHIVES OF HELLENIC MEDICINE 2011, 28(5):698-701
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2011, 28(5):698-701

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Εκκόλπωμα Zenker που
παρουσιάστηκε με χρόνια ξηρό
βήχα και επαναλαμβανόμενες
αναπνευστικές λοιμώξεις

Περίληψη στο τέλος του άρθρου

Key words

Chronic cough
Diverticulectomy
Dysphagia
Pulmonary infections
Zenker's diverticulum

Submitted 2.3.2011
Accepted 10.3.2011

Physical examination was negative and he underwent a chest X-ray and a cervical and chest CT scan. The two CTs revealed a diverticular sac of the esophagus (fig. 1) and in light of this an esophagogram with contrast swallow (water barium) was mandatory. It revealed an intermediate-sized diverticulum (Van Overbeek system) in the posterior wall of the upper esophagus filled with barium (fig. 2). The patient underwent surgery and the diverticulum was approached with a left cervical incision of 6 cm in length parallel to the internal rim of the left sternocleidomastoid muscle. Subsequent to the preparation of the diverticular neck (fig. 3a), the diverticulum was removed using a stapler (endo-GIA 45 mm). Myotomy of the cricopharyngeal muscle was not performed. The postoperative course was normal and the patient was discharged from the hospital on the sixth postoperative day.

The histological examination of the removed sac confirmed the clinical diagnosis of a diverticulum with a diameter of 3.6 cm and thickness of 0.6 cm. Microscopic examination revealed submersions of the integumentary squamous epithelium in the connective tissue in addition to chronic inflammation with sites

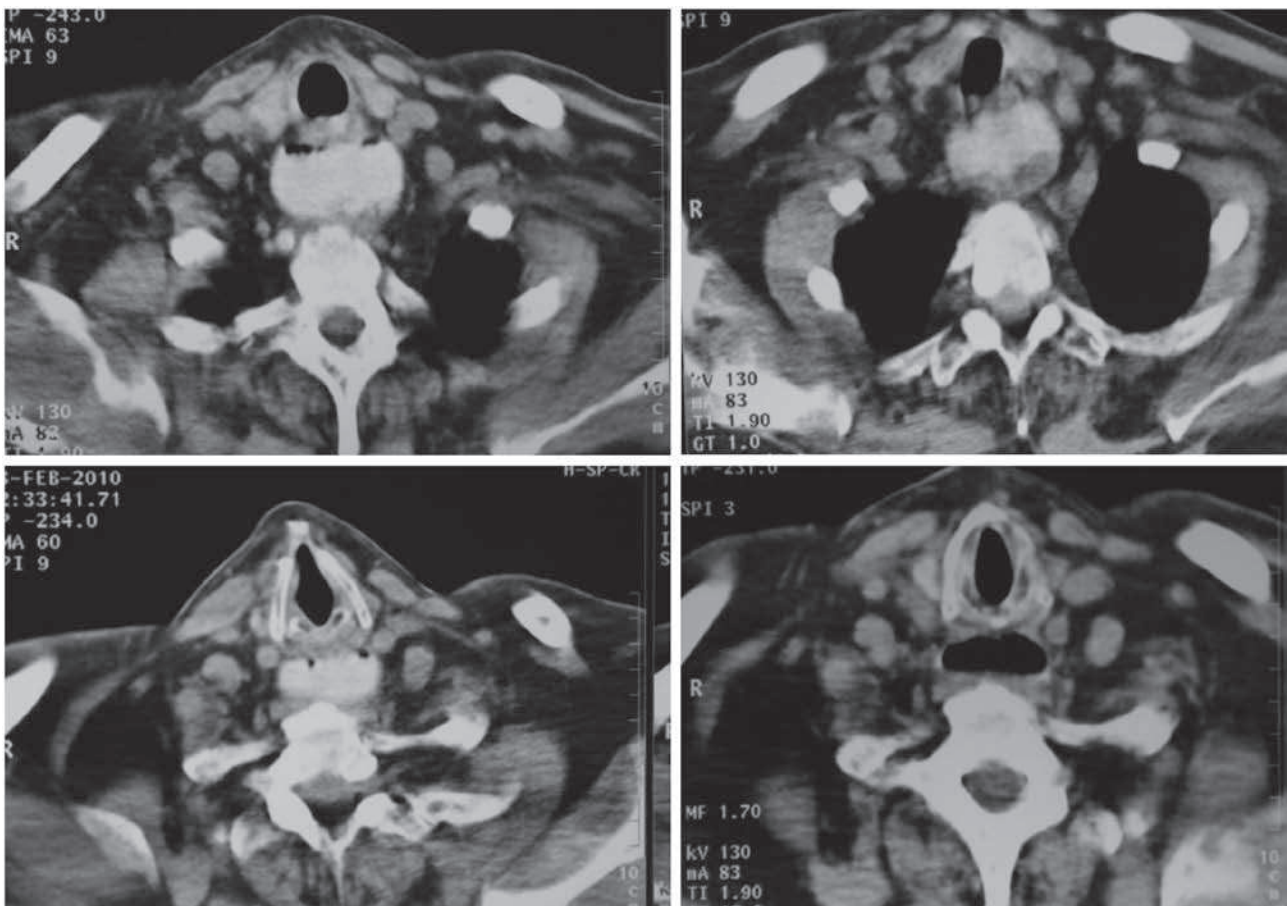


Figure 1. Cervical CT scan of the neck showing Zenker's diverticulum.

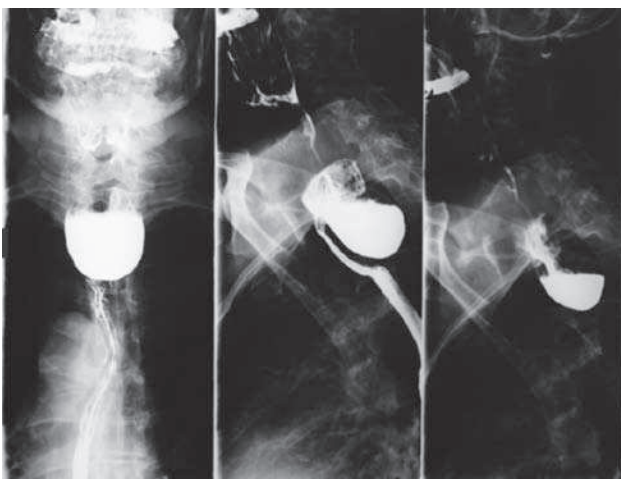


Figure 2. Esophagogram showing Zenker's diverticulum.

of focal erosion of the epithelium and sites of focal epithelial hyperplasia. No evidence of malignancy was found.

In the six month and one year follow-up the patient was in good health and symptom-free.

COMMENT

Chronic dry cough can be due to many diseases of the upper and lower respiratory tracts as well as to esophageal disease such as Zenker's diverticulum, which may be the cause, especially in elderly patients.⁵⁻⁸ Recurrent pulmonary infections can be attributed to asthma, immunodeficiency situations, airway obstructions, chronic obstructive pulmonary disease, tuberculosis, and aspiration etc. Recurrent pulmonary infections due to aspiration can be present in cases of Zenker's diverticulum.⁹⁻¹¹

Dysphagia can be divided into two categories: Oropharyngeal and esophageal. The former can be caused by head or neck tumors, cricopharyngeal bar, neurological diseases and other disorders. The latter can be caused by esophageal cancer, strictures, spasms or achalasia, gastro-esophageal reflux, Zenker's diverticulum, and other disorders. Dysphagia is a common symptom of Zenker's diverticulum and is, therefore, a possible diagnosis in elderly patients.^{9,12,13}

Zenker's diverticulum, first described by Ludlow in

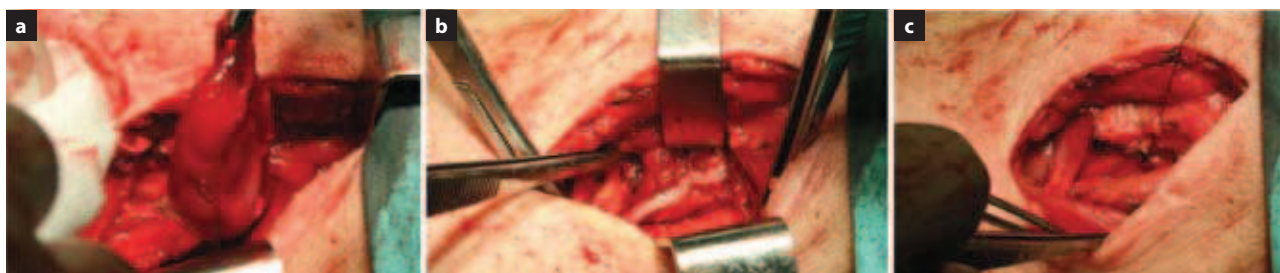


Figure 3. (a) Zenker's diverticulum at surgery. (b) Posterior upper esophageal wall after diverticulectomy. (c) Neck after diverticulectomy.

1796, is a false pharyngo-esophageal diverticulum of the posterior upper esophageal wall, mainly diagnosed in the elderly. In Zenker's diverticulum, mucosa and submucosa protrude through muscular layers of the posterior wall of the upper esophagus in Killian's triangle, creating a pouch. The protrusion is attributed to chronic increased pressure over esophageal areas of weakness. Abnormal esophageal motility and upper esophageal sphincter dysfunction result in discoordination of the swallowing mechanism, thus creating high intraluminal pressure. The lack of muscle fibers in Killian's triangle forms a weak esophageal wall. Since the weakest portion of this area is located posteriorly, this becomes the location of the pulsion diverticulum formation.¹⁻⁴

Patients may be asymptomatic, present symptoms such as dysphagia, regurgitation and chronic dry cough, or present severe complications, such as recurrent pulmonary infections due to aspiration.^{1,2} Gurgling noise on swallowing is a pathognomonic clinical sign, but rare.¹⁴ In our case, the sign was absent and the patient presented dysphagia, chronic dry cough and recurrent pulmonary infections, probably due to aspiration. In such cases, CT is mandatory. The CT which we performed revealed a diverticular sac of the esophagus. The next step was to study the esophagus. An esophagogram was performed which revealed the intermediate sac extending one and a half vertebrae bodies in length (Morton and Bartley classification), which also excluded other pathologies of the esophagus that might have co-existed, such as hiatal hernias or gastroesophageal reflux disease.¹⁵ Esophagoscopy is not obligatory and many authors avoid performing it due to increased risk of perforation.¹

Up to 30% of patients present aspiration pneumonia, especially nocturnal. Less frequent complications of Zenker's diverticulum are compression of the trachea and esophageal obstruction in cases of large diverticula.¹⁴ Transformation in squamous cell carcinoma has been reported in 0.3–0.5% of patients.¹⁶

All Zenker's diverticula require surgical management, due to the high risk of complications, with the exception of asymptomatic diverticula of small dimensions. Traditionally, surgical management includes cricopharyngeal myotomy and exclusion of the diverticular pouch. Cricopharyngeal myotomy is performed to alleviate the increased pressure zone. Despite the fact that many authors consider it mandatory in all patients, we did not perform it because we believe that it offers little in the case of elderly people. Exclusion of the diverticular pouch, which functions as a reservoir of food and secretions, can be carried out using endoscopic or external techniques.¹⁷⁻²⁰ Endoscopic techniques include: transoral tissue bridge dissection with CO₂ laser, electrocautery and endoscopic staple diverticulostomy.^{18,19,21} The disadvantage of endoscopic techniques is the high risk of recurrence, particularly if the size of the diverticulum exceeds 3 cm. Their advantage is that the procedure can even be performed as a day case if there are no post-operative complications.²⁰ Open surgery can be carried out by diverticulopexy that involves attaching the pouch to the prevertebral fascia so that the patch is suspended. This technique can be applied only in the case of small diverticula of up to 4 cm.²² Diverticulectomy is the gold standard. The defect can be closed by suturing with silk or by stapler.¹⁷ We performed an open surgery using diverticulectomy, rather than diverticulopexy, since the diameter of the diverticulum was 3.6 cm. In addition, the possibility of recurrence for diverticula over 3 cm in diameter treated by an endoscopic technique is 10–12%.¹⁹

In conclusion, Zenker's diverticulum should be included in the differential diagnosis of patients with manifestations such as chronic dry cough, recurrent pulmonary infections and dysphagia, especially in the elderly. Size and symptoms determine the management. If the diverticulum is asymptomatic and of small dimensions no surgical management is required. If it is up to 6 cm in length, endoscopic or open procedure can be used. When the diverticulum exceeds 6 cm, an open approach is generally required.²³

ΠΕΡΙΛΗΨΗ

Εκκόλπωμα Zenker που παρουσιάστηκε με χρόνια ξηρό βήχα και επαναλαμβανόμενες αναπνευστικές λοιμώξεις

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Αρχεία Ελληνικής Ιατρικής 2011, 28(5):698–701

Ανδρας 76 ετών παρουσίαζε χρόνια ξηρό βήχα, επαναλαμβανόμενες αναπνευστικές λοιμώξεις και δυσφαγία. Οι αξονικές τομογραφίες και το οισοφαγογράφημα που διενεργήθηκαν ανέδειξαν την παρουσία ενός μεσαίου μεγέθους εκκολπώματος Zenker στο οπίσθιο τοίχωμα του ανώτερου οισοφάγου. Ο ασθενής υποβλήθηκε σε εκτομή του εκκολπώματος χωρίς μυοτομή του κρικοφαρυγγικού μυός, γεγονός που μπορεί να αποτελέσει θεραπευτική επιλογή στους ηλικιωμένους ασθενείς. Το εκκόλπωμα Zenker πρέπει να περιλαμβάνεται στη διαφορική διάγνωση ασθενών με εκδηλώσεις όπως ο χρόνιος ξηρός βήχας, οι επαναλαμβανόμενες αναπνευστικές λοιμώξεις και η δυσφαγία, ειδικά στους ηλικιωμένους.

Λέξεις ευρητηρίου: Αναπνευστικές λοιμώξεις, Δυσφαγία, Εκκόλπωμα Zenker, Εκτομή εκκολπώματος, Χρόνιος βήχας

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