

Squamous Cell Carcinoma Arising in Zenker's Diverticulum: A Case Report and Review of the Literature

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Cite this article as: Hajjar WM, AlMutairi OT, Jameel MA, et al. Squamous Cell Carcinoma Arising in Zenker's Diverticulum: A Case Report and Review of the Literature. Turk Thorac J 2018; 19(4): 228-30.

Abstract

The occurrence of squamous cell carcinoma (SCC) arising in a Zenker's diverticulum is a very rare incident. Complete excision of the diverticulum is considered as the procedure of choice for SCC in the pharyngeal pouch. Histopathological assessment of the pouch is the only modality to rule out SCC. Here, we report a case of a 71-year-old male with 20 years of history of Zenker's diverticulum, who recently presented with a history of weight and appetite loss. A barium swallow confirmed Zenker's pouch, the patient underwent diverticulectomy and cricopharyngeal myotomy; a histopathological examination of the specimen revealed a fungating mass of SCC within the pouch. This report highlights the suggestion of considering SCC not only in patients with a long history of Zenker's diverticulum but also when there is a clinical suspicion with new symptoms for a more aggressive management for diagnosis and complete excision of the pouch.

KEYWORDS: Zenker's diverticulum, squamous cell carcinoma, pharyngeal pouches

Received: 18.10.2017

Accepted: 25.12.2017

Available Online Date: 19.06.2018

INTRODUCTION

Pharyngeal pouches were first described by Ludlow in 1769, and after more than a century, Zenker published a full clinical pathological description in 1877 [1,2]. The occurrence of squamous cell carcinoma (SCC) arising in Zenker's diverticulum is a very rare entity. However, the published incidence rates fall between 0.3% and 7% among occasional reports in the literature [3]. SCC in the pouch is diagnosed mainly after obtaining full histopathologic examination of the specimen following surgical resection [4]. For this reason, the procedure of choice for suspected SCC in the pouch is by complete surgical excision of the pouch. We report a rare case of recurrent Zenker's diverticulum and SCC development in the pouch.

CASE PRESENTATION

A 71-year-old British male patient presented to our institute with a history of dysphagia and regurgitation for the past 20 years. Endoscopy was done earlier, and he was diagnosed with Zenker's diverticulum. He underwent endoscopic stapling of the diverticulum in the years 2006, 2009, and 2011 without any symptomatic improvement. At that time, he denied any history of weight or appetite changes. He complained of new symptoms such as dysphagia and regurgitation mostly to soft food and liquids, which aggravate with coughing, and also of a decrease in weight and appetite. The patient is a smoker and an occasional alcohol consumer.

On physical examination, it was found that he was healthy, and all systems exam were unremarkable. All laboratory investigations were normal.

Barium swallow showed pharyngeal pouch as Zenker's diverticulum (Figures 1, 2). A written consent was obtained from the patient for surgery and publications.

The patient underwent left neck incision, diverticulectomy, and cricopharyngeal myotomy under general anesthesia. Postoperative recovery was uneventful. He was discharged home after few days in a good stable condition. Histology results showed an esophageal pouch consisting of a cyst-like lesion measuring 4.0×3.5×1.0 cm³ (Figure 3). The cyst wall was thickened. The inner mucosal surface showed fungating mass lesion measuring 1.5×1.0×0.5 cm³, tan white in color, and friable in consistency. The resection margins were free of the lesion and were marked with staples. Microscopic results showed moderately differentiated SCC (Figures 4a, b).

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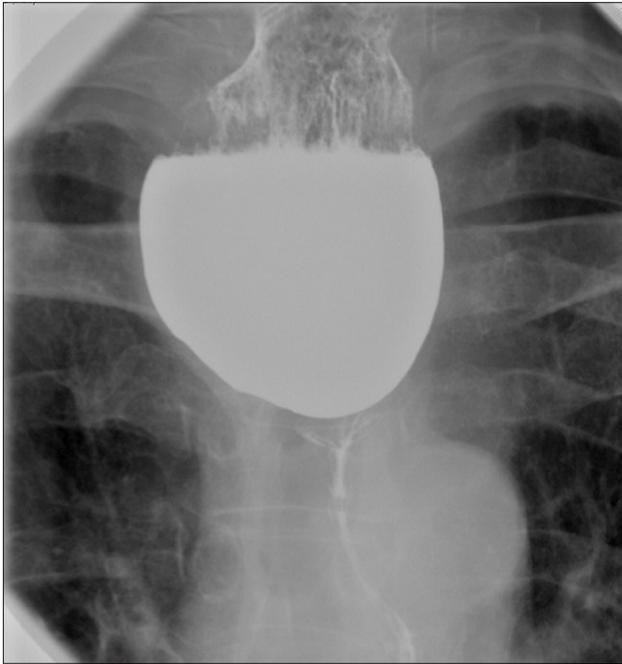


Figure 1. Barium swallow, anteroposterior view showing club-like diverticulum demonstrating large Zenker's diverticulum



Figure 2. Barium swallow, lateral view showing the Zenker's diverticulum

DISCUSSION

The occurrence of SCC in a Zenker's diverticulum was first described by Halstead [5] in 1904 and subsequently reported in the literature as a very rare entity [3]. However, SCC in the pouch was usually diagnosed mainly after obtaining full histopathologic examination of the specimen following complete surgical resection [4,6]. Malignancy of the esophageal diverticula was mostly reported to be in the cervical esophagus, and the common locations of the malignancy in the pouch usually include the fundus or the lateral wall of the



Figure 3. The resected Zenker's diverticulum specimen "pouch" consisted of a cyst-like lesion measuring 4.0x3.5x1.0 cm3

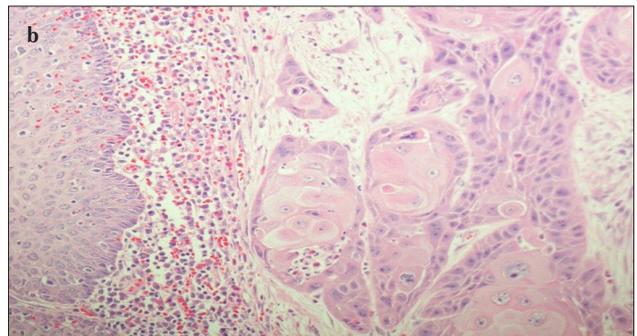
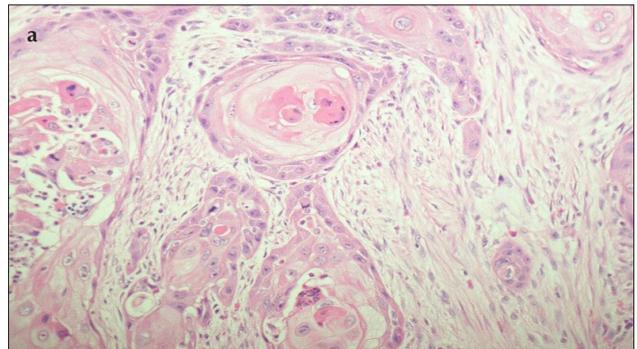


Figure 4. a, b. Microscopic appearance of the mass revealed an invasive, moderately differentiated squamous cell carcinoma. All resection margins were free, and there was no evidence of lymph vascular invasion (a); another view Figure 4a, the mass revealed an invasive, moderately differentiated squamous cell carcinoma (b)

distal two thirds of the pouch [4,7]. The risk factors for developing cancer of the pouch are the patient's old age, large pouch size, and long pouch life duration; a high frequency of food retention and manual emptying of the pouch by digital pressure increases cancer risk from the prolonged and direct irritation and inflammation [4-8]. Signs and symptoms suggesting malignancy of the pouch according to frequency, are changes in the character of dysphagia, rapid dysphagia progression, and less frequently weight loss, pain, blood in the regurgitated materials, and pouch recurrence after treatment [4].

Some reported cases of early SCC of the pouch showed normal morphology on endoscopic observation and did not present any alerting clinical symptoms or signs [6-8]. Contrast imaging and endoscopic observations are used to diagnose most of the cases of Zenker's Diverticulum but it could miss carcinoma in situ because the detection rate usu-

ally is less than 10%, where histopathological assessment of the complete resected pouch is the definitive modality of diagnosis [4]. However, Acar et al. recently reported that FDG-PET/CT could contribute to the diagnosis of SCC arising from a Zenker's diverticulum [9].

Siddiq and Sood [6] reported that the most common modality for treating Zenker's diverticulum is by endoscopic stapling or by diverticulectomy.

In our case, the patient had Zenker's diverticulum for 20 years and received multiple treatments endoscopically with recurrence. Recently, he complained of dysphagia, regurgitation, and weight loss, all of which support the literature review of the risk factors of SCC arising in Zenker's diverticulum.

In conclusion, the discrepancies in the reported cases suggest that SCC arising in Zenker's diverticulum is underreported in the English literature. The occurrence of SCC in the pouch is very rare. Clinical suspicion must be sought in patients with progressive dysphagia, weight loss, loss of appetite, blood in the regurgitated materials, and recurrence of the pouch. Carcinoma in situ within the Zenker's pouch has a high failure rate of detection, which is an area of concern. We advise complete surgical excision of the pouch for all patients with clinical suspicion regardless of their diagnosis with SCC or carcinoma in situ or not, to relieve the symptoms, prevent the complications of delayed recognition, and to maximize the therapeutic intervention.

Informed Consent: Written informed consent was obtained from the patient who participated in this study.

Peer-review: Externally peer-reviewed.

Author contributions: Concept - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Design - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Supervision - W.M.H.,

O.T.A., M.A.J., S.A.A., E.R.; Materials - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Data Collection and/or Processing - W.M.H., O.T.A., M.A.J., S.A.A.; Analysis and/or Interpretation - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Literature Search - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Writing - W.M.H., O.T.A., M.A.J., S.A.A., E.R.; Critical Reviews - W.M.H., O.T.A., M.A.J., S.A.A., E.R.

Conflict of Interest: Authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

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