INTRODUCTION

Malignant tumours in a pharyngeal pouch are extremely rare and the reported incidence ranges from 0.3 - 10\%\textsuperscript{1}. This is more likely to be associated with long standing untreated pharyngeal pouch. It has also been reported in the pouches treated with Dohlman's procedure and endoscopic pharyngeal pouch stapling\textsuperscript{2-4}. Treatment may consist of pharyngo-laryngectomy and radio-therapy. We present a case where a pharyngeal pouch carcinoma was treated successfully with excision of the pouch and tumour and preservation of speech and swallowing.

CASE REPORT

A 79-year old Caucasian male attended the neurology department with a 4 months history of progressive dysphagia. His dysphagia was suspected to be neurological in origin. Speech and Language Therapy assessment was followed by Videofluoroscopy (VF) which revealed a large pharyngeal pouch. Subsequently he was referred to us for surgical management. There was no history of recurrent chest infection or weight loss but the patient complained of food sticking in the throat. The patient gave a history of long-term heavy smoking with moderate alcohol consumption for most of his adult life. His past history also included exposure to asbestos during his work at a shipyard. He was known to have pleural plaque disease and early emphysema.

Physical examination revealed a right sided level II neck lump (4 x 3 cm). Flexible naso-pharyngo-laryngoscopy showed some pooling of saliva in the hypopharynx.

Fine needle aspiration cytology of the neck lump revealed metastatic squamous cell carcinoma. Magnetic resonance imaging scan suggested a tumour involving the anterior wall of the pharyngeal pouch (Figures 1a and b). There was a 3 cm right level II/III node with thrombosed internal jugular vein on the right side. Multiple pleural plaques consistent with previous asbestos exposure were documented but no other lung abnormality was noted.

The patient underwent endoscopic examination under general anaesthesia which showed a tumour in the anterior wall of the pharyngeal pouch extending to the lateral pharyngeal wall and also involving the postcricoid region. The oesophagus was normal.

Biopsy of the anterior wall of the pouch showed carcinoma in situ but the biopsy from the lateral wall of the pouch showed poorly differentiated (spindle cell) squamous cell carcinoma. The tumour was clinically staged as T3N1M0.

The patient underwent open excision of the pouch along with partial pharyngectomy and right modified radical neck dissection involving levels II-V. The resection specimen included a multinodular tumour mass on the
mucosal surface, 2.5 cm wide x 3.1 cm long, visible above the pouch with a further 1.5 cm extending inferiorly into the pouch (Figure 2). Histologically, the tumour was a combination of invasive moderately differentiated squamous carcinoma, in places keratinising, and showing lymphovascular space invasion, and exophytic ulcerated spindle cell squamous carcinoma (Figure 3). There was extensive background squamous carcinoma in situ both within the pouch and the adjacent pharyngeal mucosa. Lymph node metastases from the moderately differentiated squamous carcinoma component were identified in levels II-V, including a 55 mm mass in level III with extracapsular spread.

The surgical defect was closed primarily due to available adequate residual pharyngeal tissue. A tracheostomy was performed and a Nasogastric (NG) feeding tube was also inserted at the end of the operation. The tracheostomy tube was removed at 3 weeks. The NG tube was used for 4 weeks until normal swallowing was demonstrated on VF. He received adjuvant radiotherapy.

At 8 months post-treatment, the patient developed local recurrence deep to the ipsilateral trapezius muscle which was treated with local excision followed by radiotherapy. A 40 mm mass of moderately differentiated keratinising squamous carcinoma, without the spindle cell component, was excised, apparently replacing a lymph node and showing extracapsular spread. Another 10 months on (18 months post-initial treatment), a further mass was removed from the right supraclavicular region. This consisted of a 65 mm presumed lymph node metastasis comprising moderately to poorly differentiated squamous cell carcinoma with extracapsular spread.

During 4 years of follow-up, he remained disease-free with respect to his pharynx with normal speech and swallowing.

**DISCUSSION**

The exact incidence of pharyngeal pouch tumours is difficult to ascertain with less than 50 cases published in the English literature. It has been suggested that it is underreported.5,6 The pathological studies have indicated the fundus and the lateral wall to be the most common sites of tumour within the pouch.7 In this case, the tumour involved the lateral wall.

Advanced age of the patient and long standing history of the pouch are known risk factors for development of cancer in the pharyngeal pouch. Chronic irritation and inflammation caused by static food in the pouch is thought to cause carcinogenesis. Asbestos exposure is the only known risk factor for malignant mesothelioma; asbestos exposure is also associated with lung cancer, especially in cigarette smokers, and has been implicated in the causation of various cancers: stomach carcinoma, colon carcinoma, oesophageal adenocarcinoma, sinonasal squamous cell carcinoma and laryngeal carcinoma. Exposure to cement dust has been reported to increase the risk of pharyngeal cancer in Swedish construction workers.8-10 This patient used to work in a shipyard where he was exposed to asbestos. To the best of authors’ knowledge, this is the first reported case of asbestos exposure and squamous cell carcinoma arising in a pharyngeal pouch.

A pharyngeal pouch can present with a variety of symptoms including feeling of something in the throat, dysphagia, cough, weight loss, regurgitation, recurrent aspiration with chest infection. Persistent and progressive dysphagia would suggest malignancy.4 Large and medium sized tumours in the pharyngeal pouch can be detected by contrast swallow, CT/MRI and endoscopy. Most of the early tumours may not be detectable by usual investigations and carcinoma in situ is detected on histological examination of the excised specimen.

Endoscopic stapled diverticulotomy is the standard of care in the United Kingdom.6 However, where a tumour is suspected in the pharyngeal pouch, pharyngectomy with resection of the pouch is the minimum surgical intervention required with detailed histological examination of the resected specimen. In this patient, the tumour had extended beyond the confines of the pharyngeal pouch along with cervical nodal metastases. However, it was resected completely with preservation of the larynx and consequently normal speech and swallowing.
To conclude, the carcinoma of the pharyngeal pouch is a very rare tumour. Progressive dysphagia should alert to the possibility of malignancy in the known pharyngeal pouch and should prompt surgical intervention. Preservation of larynx and residual pharynx following surgery for carcinoma of the pharyngeal pouch is a realistic and achievable goal with preservation of speech and swallowing.


REFERENCES