

Branchial cyst—to endoscope or not?

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Abstract

Cervical cystic metastases are uncommon, originating predominantly from an oropharyngeal primary. Pre-operative differentiation from a branchial cyst can prove difficult. Three cases which presented clinically as branchial cysts but were subsequently found to be cystic metastases are described, and the literature is reviewed. Endoscopy, ipsilateral tonsillectomy and blind biopsies of Waldeyer's ring, combined with excision of the cervical lesion are recommended in patients over 40 years old.

Introduction

The origin of branchial cysts has been a cause of much debate but their management has, hitherto, been uncontentious. After an ENT clinical examination and carotid angiography, where appropriate, excision biopsy is performed (Maran and Buchanan, 1978). The role of endoscopy and blind biopsies has not, however, been fully considered.

Three cases are described which presented clinically as branchial cysts but were subsequently found to be cystic metastases from oropharyngeal primary tumours. In two cases, the diagnosis was made at endoscopy as a secondary procedure following histopathological analysis of the excised cyst. In the third case, endoscopy at the initial operation was negative but subsequent blind biopsies proved positive.

Case reports

Case 1

A 44-year-old woman presented to the ENT department with a four-month history of a constant left-sided neck swelling. Full ENT examination revealed a normal upper aero-digestive tract and 10 mls of yellow fluid were aspirated from a cystic mass in the anterior triangle of the neck. A branchial cyst was diagnosed and resected at operation. Histopathological analysis subsequently showed the wall to be infiltrated by poorly differentiated squamous cell carcinoma. She was readmitted for endoscopy and a palpably indurated left tonsil was excised. Histologically this proved to be a moderately differentiated squamous cell carcinoma and radiotherapy was initiated.

Case 2

A 56-year-old man was diagnosed as having a branchial cyst after presenting with a three-month history of a cystic mass in the upper third of the left anterior triangle. At operation, pharyngolaryngoscopy was normal and the cyst was excised. Histology showed a squamous cell carcinoma within the cyst. Further examination under anaesthesia of his larynx, pharynx and nasopharynx again proved normal and blind biopsies were taken. The left tonsil contained squamous cell carcinoma and a course of radiotherapy was administered.

Case 3

A 66-year-old woman had her suspected left branchial cyst

excised by a general surgeon. Histopathological analysis revealed a cyst with moderately differentiated squamous cell carcinoma in the wall. She was readmitted as an ENT patient and on examination under anaesthesia of her upper aero-digestive tract, a palpable nodule on the posterior aspect of the tongue was biopsied. This proved to be a squamous cell carcinoma and radiotherapy was commenced.

Discussion

Clinically, branchial cysts present as continuous (80 per cent) or intermittent (20 per cent) swellings anterior to the sternocleidomastoid muscle in the upper third of the neck. They occur more commonly in males and the peak age incidence is in the third decade. Seventy per cent are cystic on palpation and 30 per cent are solid (Maran and Buchanan, 1978). Cervical metastases from an oropharyngeal primary are commonly single, unilateral and show a predilection for the upper jugular nodes (Richard and Micheau, 1977). Typically, the patient is male and in his sixth decade (Batsakis, 1981). Although commonly solid, cystic metastases to this region can occur (Micheau *et al.*, 1974; Micheau *et al.*, 1990) and can be difficult to differentiate clinically from branchial cysts (Foss *et al.*, 1991). The management of the cystic mass in the upper third of the anterior triangle of the neck remains unclear.

Ultrasonography can confirm the lesion to be cystic. It cannot, however, differentiate between a branchial cyst and cystic metastases as the architecture within the cyst is similar (Loughran, 1991). Computed tomography is likewise unhelpful (Foss *et al.*, 1991).

The role of fine needle aspiration has been examined by Granstrom and Edstrom (1989). Of 42 patients presenting with cystic masses in the lateral aspect of the neck, nine proved to be malignant. Of these only three fine needle aspirates were positive. They believed malignant cells to be increasingly shed into the cyst as they found positive results in masses present for the longest period of time. This effect was supported by Foss *et al.* (1991), who reported an initially negative result that subsequently became positive. Their high false negative result (67 per cent) led Granstrom and Edstrom to conclude that fine needle aspiration was of limited value in assessing these patients.

Endoscopy and biopsy of suspicious areas only, can produce a false sense of security. Although two of the case we report had an abnormal endoscopy and biopsy proved positive, one had a normal endoscopy and the primary was only detected by blind

biopsy. Two similar cases have been described where endoscopy was normal but blind biopsies revealed occult malignancies (Marlowe *et al.*, 1984; Foss *et al.*, 1991). It would seem appropriate to biopsy sites where a likely primary may exist even if this is normal at endoscopy. The vast majority of cystic metastases are attributable to a malignancy of Waldeyer's ring (Batsakis, 1981) and tonsillectomy as a 'grand biopsy' on the ipsilateral side of the lesion has been suggested because of the occurrence of micro-invasive squamous cell carcinoma of the tonsil which may only be discovered on serial sections of the tonsil (Marlowe *et al.*, 1984).

Frozen sections of the excised cystic lesion are unreliable. Of the two cases of cystic metastases where this has been done, one confirmed the malignancy (Micheau *et al.*, 1990) but the other did not (Foss *et al.*, 1991). Blind biopsies should not, therefore, be withheld on the basis of frozen section results from the cervical lesion.

In Granstrom and Edstrom's series of 42 patients with cystic masses 11 patients presented over the age of 40, including all nine malignancies. The three patients presented above were also older than 40 years. When the peak age incidence of branchial cysts and cervical metastases from an oropharyngeal primary are also considered, endoscopy, ipsilateral tonsillectomy and blind biopsies of Waldeyer's ring is prudent in the older patient.

Conclusion

Cervical cystic metastases, particularly from the oropharynx can occur. Pre-operative differentiation from branchial cysts may not be possible as ultrasonography, computed tomography, fine needle aspiration and frozen sections are often misleading. We now advocate endoscopy, ipsilateral tonsillectomy and blind biopsies of Waldeyer's ring, combined with excision of the cervical lesion in patients over 40 years old.

Key words: Cyst, branchial; Endoscopy

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