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Unusual inflamed thyroglossal cyst

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Abstract
The authors report a case of an unusual inflammatory reaction in a thyroglossal cyst. It consisted of broad papillary intraluminal projections covered by histiocytes and occasional multinucleate giant cells. This benign process should not be confused with a true papillary neoplasm, a rare complication of a thyroglossal cyst.

Key words: Thyroglossal cyst; Inflammation

Introduction

A thyroglossal cyst is a congenital anomaly resulting from retention of an epithelial tract between the thyroid and its origin, the foramen caecum, in the floor of the pharynx (Allard, 1982; Katz and Hachigian, 1988). It is the most common congenital cyst in the neck accounting for up to 70 per cent of such lesions (Topf *et al.*, 1988). A thyroglossal cyst is discovered most frequently in childhood (Hoffman and Schuster, 1988) but may become symptomatic at any age (Katz and Hachigian, 1988). It usually presents as a painless swelling in the midline of the neck, below the hyoid bone and may become painful increasing rapidly in size in association with infection (Katz and Hachigian,1988; Cumberworth and Bradley, 1989).

Histologically, a thyroglossal cyst is lined by pseudostratified ciliated columnar epithelium and/or squamous epithelium. The supporting wall of the cyst consists of fibrous tissue and frequently contains heterotopic thyroid tissue and accumulations of chronic inflammatory cells (Allard, 1982; Hoffman and Schuster, 1988).

It is often complicated by infection, occasionally by fistula, and rarely by carcinoma (Topf *et al.*, 1988). It is estimated that carcinoma complicates thyroglossal cysts in one per cent of cases (Allard, 1982; Ronan *et al.*, 1986; Topf *et al.*, 1988), with a total of approximately 150 cases being reported (Yildiz *et al.*, 1993). The most common type of malignancy is papillary adenocarcinoma, presumably arising from the heterotopic thyroid tissue (Ronan *et al.*, 1986). Some cases of squamous carcinoma (Colloby *et al.*, 1989) and anaplastic carcinoma (Woods *et al.*, 1993) have been reported.

Case report

A 35-year-old woman presented with a six-month history of a painless swelling in the midline of her neck. There was no history of previous irradiation. Clinical examination revealed a 3 × 2 cm cystic mass that was palpable above the thyroid cartilage. The remainder of her head and neck examination was unremarkable. The Sistrunk procedure (removal of the cyst together with the central portion of the hyoid bone) was performed. The post-operative course was uneventful and she was discharged four days later to be followed-up periodically in the outpatient clinic.

Pathological findings

The surgical specimen measured 3 × 2 × 2 cm. It was

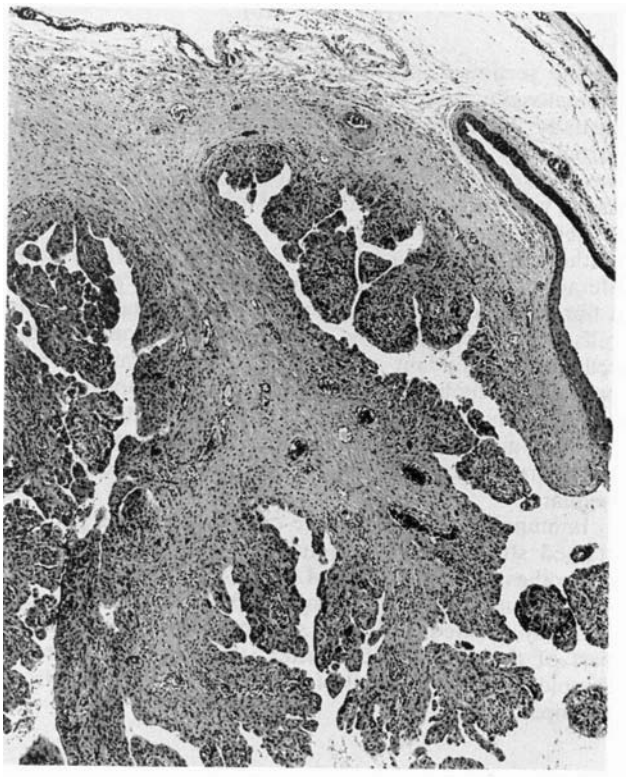

FIG. 1

The wall of the cyst is partially lined by atrophic squamous epithelium. In the other part, the epithelium is replaced by a branching papillary proliferation projecting into the lumen of the cyst. (H & E; × 32).

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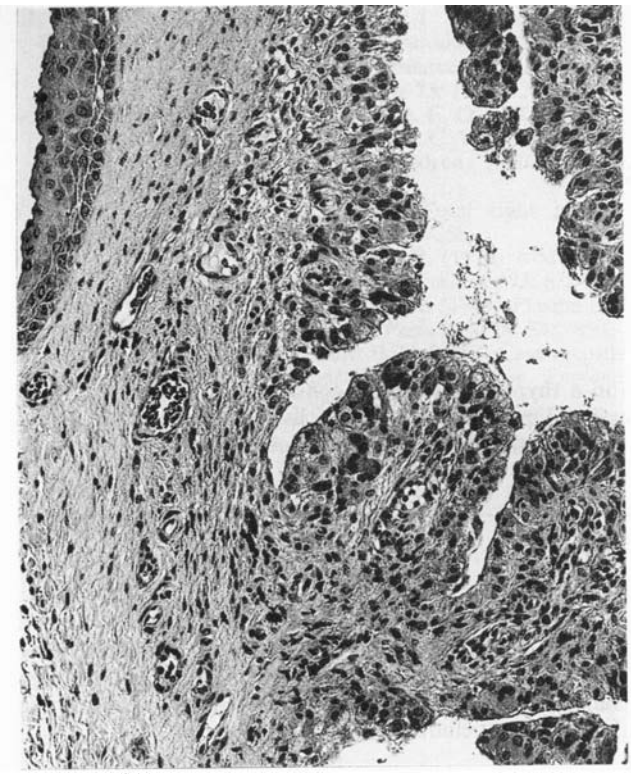

FIG. 2

Papillae consisting of a fibrovascular core with focal mononuclear cell infiltration, are covered by multilayered epitheloid cells. There are also scattered multinucleate giant cells. (H & E; × 120).

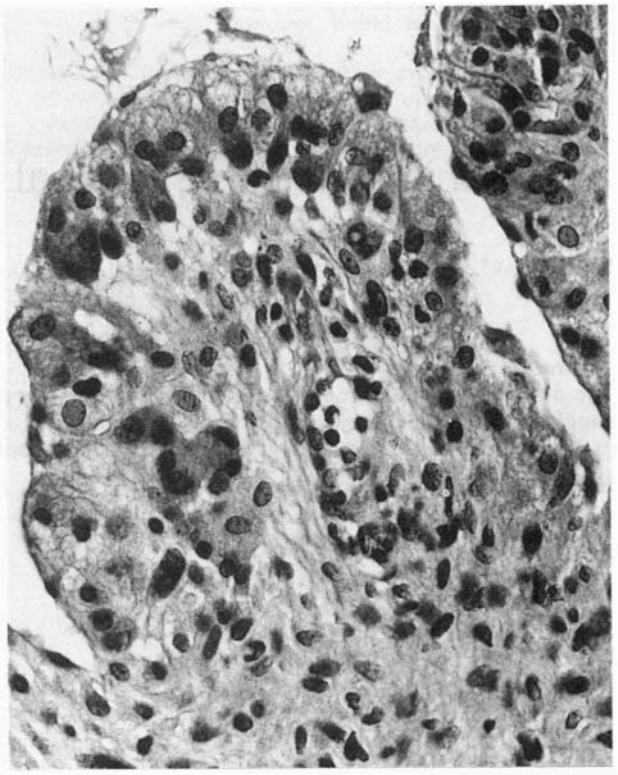

FIG. 3

Higher magnification of a papillary structure. (H & E; ×310).

serially sectioned, processed routinely, and stained with haematoxylin and eosin. Histologically, the cyst was partially lined by ciliated columnar epithelium and partially by squamous epithelium. The wall of the cyst was thickened and consisted of fibrous and granulation tissue, with focal mononuclear cell infiltration, and a focus of heterotopic thyroid tissue. In a part of the cyst, the epithelium was replaced by a branching papillary proliferation projecting into the lumen (Figure 1). Papillae had a fibrovascular core with focal infiltrates of mononuclear cells, and were lined by epithelium-like, monomorphic cells with abundant eosinophilic, finely granular and partially vacuolisated, poorly defined cytoplasm and central monomorphic nuclei. There were scattered multinucleate giant cells with the nuclei arranged around the periphery (Figures 2 and 3). Mitoses were scanty and regular.

Immunohistochemically, the cells covering the papillae stained strongly with anti-human macrophage/histiocyte antibodies i.e. CD68 and MAC 387, but not with anti-keratin and anti-thyroglobulin antibodies. The former antibody reacted with the squamous epithelium lining part of the cyst and the latter stained the heterotopic thyroid tissue in the wall of the cyst (all antibodies from Dakopatts).

Discussion

A thyroglossal cyst does not usually present a diagnostic problem to the pathologist. Two features are most helpful in distinguishing a thyroglossal cyst from other neck cysts i.e. the midline position in the neck and heterotopic thyroid tissue in the wall of the cyst. The latter is reported to be demonstrated in three to 45 per cent of cases (Allard, 1982; Hoffman and Schuster, 1988). In our experience it can be found even more frequently, if the cyst is serially sectioned. Detailed histological examination is essential not only to establish the diagnosis of a thyroglossal cyst, but also to exclude one serious complication, namely, carcinoma (Allard, 1982; Cumberworth and Bradley, 1989).

We report a case of an unusual inflammatory reaction in a thyroglossal cyst. While non-specific chronic inflammation is usually present in the wall of the cyst (Allard, 1982), this case is unusual in that the inflammatory reaction consisted of broad papillary projections which had a fibrovascular core and were covered by epithelium-like monomorphic cells of histiocytic nature as demonstrated by immunohistochemistry.

This benign process should not be confused with a true papillary neoplasm which is a rare but well documented complication of a thyroglossal cyst.

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