

Parapharyngeal abscess associated with the second pharyngeal pouch

T. TAKIMOTO, M.D., M. ITOH, M.D., (Fukui, Japan)

Abstract

Peritonsillar or parapharyngeal abscess is not at all a rare disease. Usually the abscess is recognized as the underlying consequence of acute tonsillitis. However, the abscess may be caused by an internal fistula related to the second pharyngeal pouch. Presented here are the clinical, radiological and pathological aspects of an internal fistula with a parapharyngeal abscess related to the second pharyngeal pouch.

Key words: Peritonsillar abscess; Branchioma.

Introduction

Branchial cleft anomalies arise from incomplete resolution of the branchial cleft remnants. Anomalies of the second branchial cleft are by far the most common abnormalities, accounting for up to 90 per cent of all branchial cleft anomalies (Taylor and Burwell, 1954). Most cysts and fistulae related to the second branchial anomalies are found deep in the sternocleidomastoid muscle or along its anterior border; either lateral cysts (Bailey's classification types I to III; Bailey, 1933) or external fistulae originating from the second branchial cleft. Branchial cysts (Bailey's classification type IV) and internal fistulae related to the second pharyngeal pouch near the pharyngeal wall or the faucial tonsillar region are extremely rare (Boysen *et al.*, 1979; Takimoto *et al.*, 1989; Dilkes *et al.*, 1990).

We report here a very rare case of a parapharyngeal abscess associated with the second pharyngeal pouch.

Case report

A 22-year-old male presented as an emergency with a five-day history of sore throat and trismus. He had repeatedly suffered from pain and swelling on the left side of the neck for several years. A provisional diagnosis of peritonsillar abscess was made. The patient was admitted and placed on intravenous antibiotics (benzylpenicillin).

On examination, there was some anteromedial displacement of the left tonsil with peritonsillar swelling and bulging on the left side and signs of acute tonsillitis with erythema and oedema of the left tonsil. Furthermore, a small opening was also found cranially in the posterior faucial pillar. There was no fistula along the anterior edge of the right sternocleidomastoid muscle. The rest of the physical examination was negative. The fistular tract was gently probed and found to course in an inferolateral direction. Mucopurulent discharge then appeared from the opening. A CT scan demonstrated a poorly defined mass above and lateral to the left tonsil (Fig. 1).

When the peritonsillar swelling and discharge from the internal fistula had reduced, the fistula and cyst were excised together with the tonsil. The fistula penetrated the superior pharyngeal constrictor muscle and a small cystic mass continuous with the fistula was found in the parapharyngeal space at operation under general anaesthesia. The wound healed well and the post-operative course was uneventful.

Histopathology

The wall of the cyst was lined partially by stratified squamous epithelium with lymphoid tissue (Fig. 2). The remainder of the wall was lined with connective tissue.

Discussion

The second branchial cleft separates the second and third branchial arches and, with the second pharyngeal pouch, forms the second branchial membrane. The branchial cleft and membrane usually disappear whereas the endoderm of the second pharyngeal pouch gives rise to the palatine tonsil and tonsillar fossa (Bailey, 1933; Proctor, 1955). Although a second branchial anomaly occurs more commonly than other branchial anomalies,

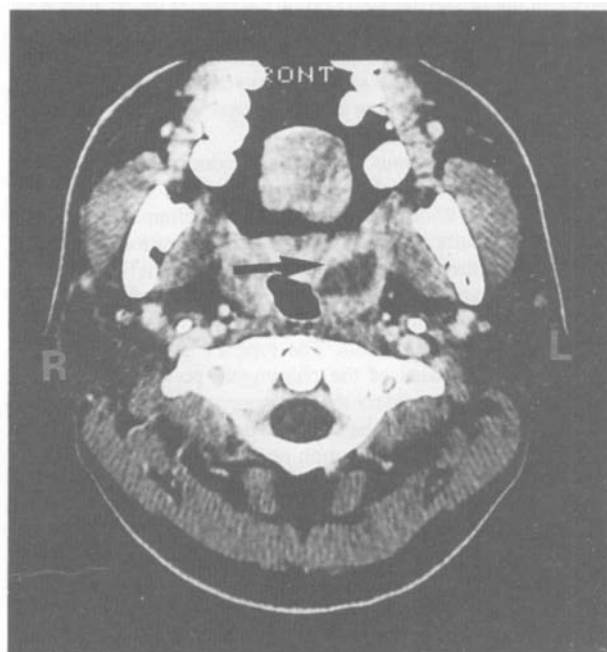


FIG. 1

CT scan demonstrated a cystic mass (arrow) above and lateral to the left tonsil.



FIG. 2

Photomicrograph of cyst wall lined by stratified squamous epithelium with lymphoid tissue (H & E $\times 100$).

lies, internal cysts and fistulae related to the second pharyngeal pouch are very rare (Boysen *et al.*, 1979; Takimoto *et al.*, 1989; Dilkes *et al.*, 1990). When one is present, the bacterial infection following upper respiratory tract infection may result in inflammation in the peritonsillar or parapharyngeal area through this fistula.

Boysen *et al.* (1979) described the infections of an internal fistula related to a second pharyngeal pouch being misinterpreted as episodes of tonsillitis. In our patient, erythema and oedema of the tonsil with peritonsillar swelling was suggestive of a peritonsillar abscess. However, the internal fistula could be followed through the superior constrictor muscle at operation. The pathological findings of the removed cyst revealed pseudostratified epithelium with subepithelial lymphocyte infiltration. These findings indicate that bacterial infection following acute tonsillitis resulted in inflammation in the peritonsillar and parapharyngeal area through an internal fistula related to the second pharyngeal pouch.

In the literature, to our knowledge, only two cases of peritonsillar or parapharyngeal abscess related to the second pharyngeal pouch have been reported (Boysen *et al.*, 1979). However, these anomalies may occur more often than presumed. Peritonsillar abscess is not at all a rare disease. The abscess has been generally recognized as the underlying consequence of acute tonsillitis. The abscess may be caused by an internal fistula related to the second pharyngeal pouch. One must be aware of the existence of the second branchial fistula. The key to the diagnosis of the internal fistula related to the second pharyngeal

pouch is a high index of suspicion in a patient with recurrent, unilateral infections of the tonsillar region.

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Address for correspondence:

T. Takimoto, M.D.,
Department of Otolaryngology,
Fukui Prefectural Hospital,
2-8-1 Yotsui,
Fukui 910,
Japan.