IntroductIon

First branchial cleft cysts (FBCCs) are extremely rare causes of parotid swellings and comprise less than 1% of all branchial anomalies. They are frequently misdiagnosed due to their rarity and unfamiliar clinical signs and symptoms. We present a case of Type I FBCC masquerading as a parotid tumor.

Case Report

This was a case report of a 22-year-old female with an unremarkable medical and family history who presented to us with a painless swelling in the left parotid region of 2 years duration, examination revealed a well-circumscribed 3 cm x 3 cm swelling in the left parotid region [Figure 1]. The facial nerve function was preserved and there was insignificant cervical lymphadenopathy. A magnetic resonance imaging scan of the parotid region confirmed the nature and extent of the swelling in the left parotid gland [Figure 2]. Aspiration cytology from the cyst revealed an acellular proteinaceous material with occasional squamoid cells, degenerating lymphoid cells and histocytes. The cyst reappeared in a few days time; she was hence taken up for surgery. The intra-operative finding showed the cystic lesion within the substance of

A Type I first branchial cleft cyst masquerading as a parotid tumor

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ABSTRACT

Branchial cleft anomalies are caused by incomplete regression of the cervical sinus of “His” during the 6th and 7th weeks of embryologic development. Although congenital in origin, first branchial cleft cysts (FBCCs) can present later in life. FBCCs are rare causes of parotid swellings, accounting for <1% of all the branchial cleft abnormalities. The diagnosis of FBCCs is a clinical challenge; the condition is often overlooked and mismanaged. We report a case of Type 1 FBCC in a 22-year-old female with an asymptomatic 3.5 cm x 2.5 cm sized cystic mass. It was removed completely under the impression of a cystic tumor of the parotid. On histopathology, the cyst had a squamous epithelium-lined wall with lymphoid aggregation which was characteristic of a branchial cleft cyst. A good understanding of the regional anatomy and embryology can lead to an early diagnosis and thereby effective management of FBCC.

Key words: First branchial cleft cyst, facial nerve, parotid tumor
the superficial lobe of the parotid gland. A left superficial parotidectomy preserving all the branches of the facial nerve was successfully done, no fistulous tract was identified. The histopathology showed a cystic lesion measuring 3.5 cm × 2.5 cm × 2.5 cm surrounded by normal parotid tissue all around. The cyst was lined with ulcerated stratified squamous epithelium; the cyst wall showed lymphoid tissue with deep seated investigations of the squamous cells, the lumen was filled with necrotic debris, features suggestive of a branchial cleft cyst [Figure 3]. She is disease free and continues to be on follow-up for over 2 years.

**DISCUSSION**

Branchial cleft anomalies are caused by incomplete regression of the cervical sinus of “His” during the 6th and 7th weeks of embryologic development. They can be cysts, sinuses or fistulae. Cystic type of anomalies is more common rather than fistula or sinus type. Cystic type can occur clinically from the first to fourth branchial cleft.

The location of a branchial cleft cyst is determined by which branchial cleft failed to obliterate during embryological development, with the second branchial cleft being the most commonly recognized lesion. The common clinical presentation of a first branchial cleft abnormality includes a swelling in the preauricular region (24%), parotid (35%) or cervical region (41%). FBCC are rare causes of parotid swellings, accounting for less than 1% of all the branchial cleft abnormalities. Although congenital in origin, FBCCs can present later in life, a median age of around 18 years. The diagnosis of FBCCs is a clinical challenge; the condition is often overlooked and mismanaged. Branchial cleft cysts are often infected following repeated upper respiratory tract infection and are found as rapidly expanding cystic mass in the neck. A history of multiple incision and drainage procedures for an abscess in the upper neck area is a characteristic finding of branchial cleft cysts. The relationship between the facial nerve with the cyst warrants early identification and complete exposure of the course of the nerve, herein lies the technical challenge of performing a safe and complete excision. A good understanding of the regional anatomy and embryology is therefore imperative; it can lead to an early diagnosis and thereby effective management of FBCCs.

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