

Unusual Site for Branchial Cyst Occurrence

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Case Report

Abstract: Branchial cleft cysts typically present as a unilateral, fluctuant soft tissue swelling that is localized deep to the anterior border of sternocleidomastoid in the lateral aspect of the neck. They are often discovered late in childhood or early adulthood. The author presents an unusual case of branchial cyst occurring above the parotid gland in a 7 year male child [Figure1]. Such site can be mistaken for a tumor of the parotid gland. Early intervention and surgical excision was opted with no post op complications.

Keywords: Branchial cyst, parotid region.

Introduction

Branchial cysts (also known as lateral cervical cysts/ lymphoepithelial cysts), predominantly present in the lateral aspect of the neck. Typically, a fluctuant swelling is felt deep to the sternocleidomastoid at the junction of its upper third and lower two thirds. They often present in the second and third decades of life. Diagnosis is usually made clinically. Fine needle aspiration can also facilitate diagnosis. Radiology may also be helpful if the cyst is large, in an unusual localisation or if the swelling pulsates. Excision is the treatment of choice to aid in diagnosis, for cosmetic reasons and to prevent possible infection of the cyst. It has been postulated that the cyst represents the remains of pharyngeal pouches or clefts. Branchial cysts are uncommon findings in the oral cavity, major salivary glands, cervical lymph nodes, tonsils, thyroid gland, juxtabronchial and pancreas. They are often multicentric and may be unilateral or bilateral.



Figure 1: Branchial Cyst over left parotid region



Figure 2: Exision Branchial Cyst

Case Report

A 7 year old male child came to the surgery outpatient department with complain of swelling over left side of cheek in the parotid area which became apparent since 2 months and was gradually increasing in size [Figure1]. It was not associated with fever or pain. Swelling was cystic, fluctuant, non pulsatile and irreducible. Transillumination test was negative. There was no history of trauma. Patient was negative for HIV. FNAC, Ultrasonography and MRI scan [Figure 3(a)] & [Figure 3(b)] were done.

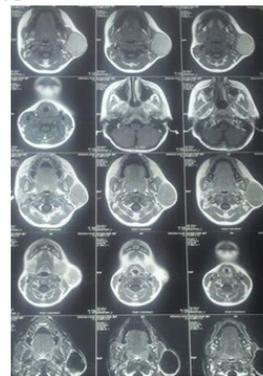


Figure 3(a): Plain MRI



Figure 3(b): Contrast MRI

Discussion

Occurrence of branchial cyst in parotid region is very rare. Hunczowski described the first branchial cyst in 1789 ⁽¹⁾; however, the first surgical treatment of a

branchial cyst was reported by Langenbeck in 1859⁽²⁾. The first branchial cyst of the parotid gland was described by Hildebrandt in 1895 (this was at a time when HIV infection was unknown)⁽³⁾. In the mid-1980's, the association between branchial cyst of the parotid gland and HIV infection was first reported. These are probably related to intraparotid lymphadenopathy associated with HIV infection (Mandel and Reich, 1992)⁽⁴⁾. Since then, once the diagnosis of a branchial cyst is established, HIV testing is recommended, as it can be the first presentation of HIV infection⁽⁵⁾. Parotid branchial cysts are common in the third decade of life with a mean age of 44 years and a male to female ratio of 3:1⁽⁶⁾. Branchial cysts can occur within the lymph nodes in the parotid gland and on the surface of the gland. The cysts appear to be painless, slow-growing, firm, elastic and fluctuant masses and may vary in size from 0.5 cm to 5 cm in diameter. In most of the cases the superficial lobe of the parotid gland is involved. The differentiation of a branchial cyst and cystic degeneration within squamous cell carcinomatous metastases to a lymph node must always be borne in mind when interpreting FNA, imaging and in planning the surgical approach.

Their embryological origin still remains controversial and many theories have been suggested. Four of the most common theories are outlined as the following⁽⁸⁾;

- The Branchial apparatus remnant theory
- The Cervical Sinus Theory
- The Thymopharyngeal Duct Theory
- The Lymph Node Inclusion Theory

The first two theories also known as classic theory; holds that the cysts develop from the remnants of the branchial cleft because it occurs in the area of the embryonic gill apparatus. However for this present case, the Lymph Node Inclusion theory or so called recent theory would seem the most feasible explanation for the lymphoepithelial cyst which was found in the parotid gland. Where this theory considers that the cysts arise from cystic changes in parotid gland epithelium that become entrapped in the upper cervical lymph nodes during embryonic life (Bashkar and Bernier, 1959)^(9,10). Possible Swellings at the Angle of the Mandible⁽⁷⁾ - Branchial Cleft Cyst, Neoplasms, Hemangioma, Lymphangioma, Pleomorphic Adenoma (Mixed Tumor), Warthin Tumor, Angiolipoma, Mucoepidermoid

Carcinoma, Lymphoma and Leukemia, Neurofibroma, Rhabdomyosarcoma, Metastatic Adenopathy, Parotitis and Parotid Abscess, Tuberculosis and Atypical Mycobacterial Infection, Human Immunodeficiency Virus Infection, Sarcoidosis.

Although a variety of processes may affect the pediatric parotid gland and periparotid region, modern imaging may suggest a specific diagnosis. This information can in turn be used to guide therapy and plan a surgical approach. Complete surgical removal remains the only acceptable form of treatment.

Conclusion

The occurrence of branchial cyst in the parotid region is a rare case and surgical excision should be done for cosmetic purpose and to prevent infection [Figure2].

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