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Teratoma in parotid: a rare case report

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ABSTRACT

Teratomas are tumors in which more than a single cell type is derived from more than one germ layer. Sacrococcygeal teratoma is the most common site of neonatal teratoma. Teratoma in parotid region is a very rare entity. Due to lack of any pathognomonic feature, it is difficult to diagnose preoperatively. Superficial parotidectomy is done to remove the mass and also to reduce the chance of recurrence. A definitive diagnosis is drawn after the histopathological study. Thus teratoma should be kept in mind while evaluating a case of a soft tissue mass of parotid area & malignancy should be ruled out.

INTRODUCTION

The term teratoma, derived from the Greek *teraton* meaning "a monster", was coined by Virchow in 1869 for a tumour originating in the sacrococcygeal region. Teratomas originate from misplaced embryonic, pluripotent germ cells that lose influence during embryologic development.[1] Teratomas are the most common extragonadal germ cell tumors of childhood, consisting of tissues from at least 2 of the 3 germ layers.[2] Teratomas were described first in 1953 by Willis as a tumor that contained tissues different from the affected organ.[3]

Teratomas are anatomically classified as gonadal (testis or ovary) or extragonadal (brain, face, neck, mediastinum, retroperitoneum, and sacrococcygeal region). Sacrococcygeal region is the most common site of congenital teratoma.[4] Histologically, teratomas are classified as mature or immature on the basis of the presence of the immature neuroectodermal elements within the tumour. Mature teratomas comprise only mature elements, such as the skin, hair, fat tissue, cartilage, bone, and glands. Immature teratomas contain immature elements, such as neuroepithelial tissue and immature mesenchyme.

Parotid is a very rare site of teratoma. No specific investigation can diagnose it preoperatively. Surgery is the definitive mode of management. Postoperative histopathological study gives the definitive diagnosis. Keeping in mind, the chance of recurrence and intact facial nerve function, superficial parotidectomy is the modality of treatment.

Here we present a case of teratoma of parotid area.

CASE REPORT

An 18years Hindu male patient presented to our OPD with a painless, slowly progressive swelling in left parotid region without any significant family & personal history. There was no pain, facial asymmetry or any history of trauma. It was present just inferior to left ear pinna. The mass was of size 4x5cm, non tender, freely mobile, soft to firm in consistency, having smooth surface (figure-1).

Fine needle aspiration cytology came out to be of inflammatory lesion. Ultrasonogram (USG) of left parotid area revealed a complex, multi-loculated, hypoechoeic lesion. The lesion showed multiple, thick walled loculi of thick collection. CT (computed tomography) of that area revealed a heterogeneously hypodense space occupying lesion of size 3x4cm, containing fat & calcification with multi-locular cystic component with wall enhancement (figure-2).Considering all above findings, especially after radiological investigation, the lesion was provisionally diagnosed to be a teratoma or lipoma with saponification. After proper haematological investigations, patient was prepared for surgery. Superficial parotidectomy was

ABREVIATIONS : OPD- outpatient department, FNAC- fine needle aspiration cytology, USG- ultrasonogram, CT- computed tomogram

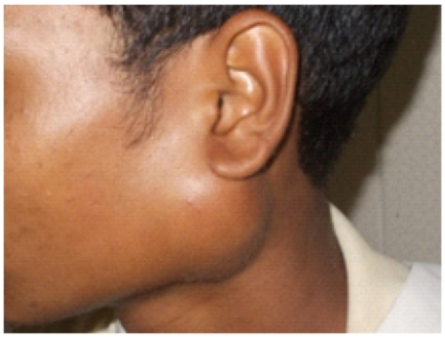

Fig 1

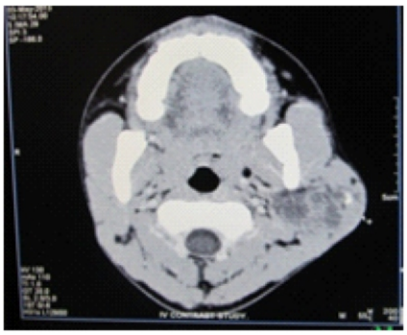

Fig 2

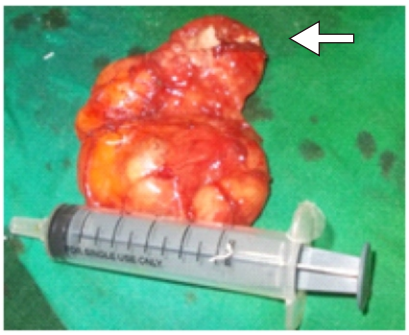

Fig 3 Post-operative specimen with a tooth impacted on its wall (arrow)

done without any intraoperative complication. The mass was well encapsulated without involving the facial nerve.On gross examination, the mass was 6x3cm size, variable in consistency with an uneven surface (figure-3). On cut-section, brownish, thick, nonfoul smelling, mucoid discharge released with a tooth embedded on its wall.

Histopathology revealed a cyst wall with keratinisation of the squamous epithelium and the presence of skin annexes (hair follicles, sweat glands, sebaceous glands) with features of chronic inflammation.

DISCUSSION

According to the Iraqi cancer registry 2004, Parotid gland tumors account for 0.21% of all tumors. 66.6% of salivary gland tumors originate in parotid. Benign mature cystic teratomas in the head and neck region are uncommon. They represent fewer than 5% of all pediatric neoplasms.[5] However, mature cystic teratomas of salivary gland are even rarer.[6] Parotid gland development requires interactions between the epithelium and mesenchyme. This might explain the presence of ectomesenchymal components in benign cystic teratoma of parotid gland.

Parotid is a very common site for cysts which may be congenital or acquired. Congenital cysts may be branchial cleft cyst, branchial pouch cyst, congenital duct cyst or dermoid cyst. Acquired cysts may be of traumatic, neoplastic, calculi or parasitic i.e. hydatid cyst. Cysts can occur at any site of parotid. However, parotid is a very rare site for dermoid. Clinically it is very difficult to get a clear cut diagnosis. There is no special finding on physical examination. There is also no pathognomonic feature in imaging. However, CT gives more specific information on the fat, proteinaceous fluid and calcification using the Hounsfield values determination. The presence of fatty portions of the tumour which probably represents sebum, is virtually pathognomonic of a teratoma [7] CT is better than Ultrasound at defining the teratoma extent, relation to the surrounding organs and in evaluating the cyst wall. The important other differential diagnosis like lipoma, congenital cysts & hydatid cysts should be taken into account. From the imaging studies the benign nature of the cyst confirmed and surgery is planned.

The recommended management for head and neck teratomas is surgical excision. This is curative and recurrence is rare [8] Recurrence rate depends upon the degree of histological immaturity. Adjuvant chemotherapy is often used in malignant and metastatic cases.[6]

Parotid teratomas have a well defined capsule, so dissection is not difficult. Though recurrence is a rare complication, superficial parotidectomy is planned. Special precaution for the facial nerve is taken into consideration. Postoperative histopathology gives the final diagnosis. The microsection reveals keratinisation of stratified squamous epithelium with derivatives of skin appendages like hair follicle, sweat gland, sebaceous gland. Teratomas have heterogeneous histological characteristics. Up to 90% of childhood teratomas contain derivatives from all 3 embryonic germ layers.[9] Approximately 20% to 40% of childhood teratomas contain some immature tissues.[10,11] Malignant change in teratomas was higher in adults than in children, with incidences of 26% and 10%, respectively.[12]

Although this is a congenital tumor, it presented to us in the 2nd decade of life of the patient & as this type of tumor is exceedingly rare in clinical practice, teratoma as a differential diagnosis was not considered. Only pre-operative CT drew our attention to such a possibility. Moreover, the potential for malignant transformation in adult puts a greater responsibility on clinicians to keep the patients under regular follow up.

CONCLUSION

Though rare, still teratoma makes an important differential diagnosis of parotid lesions. Due to lack of any pathognomonic preoperative findings, postoperative excisional biopsy gives the final diagnosis. A Surgeon should be aware of its reccurence (though rare) and malignant transformation nature, so superficial parotidectomy is the sole treatment of choice.

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