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Case Report

Midline epidermal inclusion cyst of neck in children: a diagnostic dilemma: case report and review of literature

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ABSTRACT

Painless midline neck swellings have been a challenging confrontation for any surgeon, mostly due to numerous diagnostic possibilities at this location. Common ones include thyroglossal cyst, epidermoid cyst, dermoid cyst, enlarged lymph nodes, vascular anomaly etc. Due to a different treatment modality for each entity, proper diagnosis is necessary. We are presenting two cases of midline epidermal inclusion cyst having unique clinical and radiological features, creating a diagnostic query.

Keywords: Dermoid cyst, Lymphatic malformation, Midline neck swelling, Paediatric, Thyroglossal cyst

INTRODUCTION

Midline epidermoid cysts are benign lesions. The incidence is 1.6 to 6.9% of all cysts of head and neck region. It occurs in areas of embryonic fusion and are a fluid-filled protrusion cysts originating from follicular infundibulum. They usually present in adults and are rarely noticed before puberty.[1,2] A variety of congenital developmental anomalies arise from head and neck because of the complex embryologic structures and many fusion planes in this region.[3] We describe a series of two pediatric patients with midline epidermal inclusion cyst.

CASE REPORTS

Case 1

A 14 years old male child presented to us with complaints of swelling in submental region since 4 years of age. Initially it was very small but gradually increasing in size with age. Patient was otherwise symptom free. Except for cosmetic problem, there was no history of any pain, redness, dysphagia or change in voice. On clinical examination, a painless, cystic swelling, 5 cm x 5 cm in size, was present in the midline of neck that moved with deglutition and with protrusion of tongue. With a probable diagnosis of thyroglossal cyst further investigations were done. Ultrasound showed a midline globular complex cystic lesion with multiple discrete nodular echogenic floating lesions inside it.

There were also fine internal echoes seen within the lesion. The cyst was well capsulated having vascularity in its wall only. Fine comet tail signs were seen from the wall of the lesion. The lesion moved upward on protrusion of tongue. Both thyroid lobes were mildly heterogenous in echo texture and a tiny hypoechoic nodule noted in isthmus measured 3-4 mm. Ultrasound features were suggestive of dermoid cyst (Figure 1a).

Otherwise, systemic examination was normal. Due to disparity in clinical and radiological diagnosis Ultrasound guided FNAC was done that revealed numerous neutrophils in a background of amorphous debris, occasional scattered nucleate as well as anucleate squamous cells, with possible diagnoses of thyroglossal cyst or a suppurative lymph node. Thyroid function test

was done showing normal T3 and TSH but a raised T4 level. To rule out multiple diagnoses, CT scan was done that suggested the swelling to be a dermoid cyst (Figure 1b). With varied differential diagnoses, exploration of neck was planned. Excision of the cyst was done in toto (Figure 1c). The cut section of the cyst appeared to be filled with creamy material. Specimen was sent for histo-pathological examination. Patient was managed conservatively in post-op period and discharged on pod 2.

On gross pathological examination, specimen was filled with pultaceous material with varied wall thickness ranging from 0.1 to 0.3 cm. A solid area/ hemorrhage was present within the wall measuring 0.8 cm in maximum dimension. On microscopic examination, features suggested an epidermal inclusion cyst with an area of ulceration with accumulated macrophages and giant cells. Now patient is on 3 monthly regular follows up and asymptomatic.

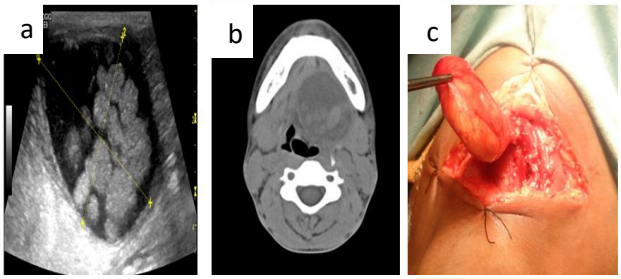

Figure 1: (a) Globular complex cystic lesion with multiple discrete echogenic nodules. (b) CT scan showing midline neck swelling. (c) Intra-operative image of Midline epidermal inclusion cyst showing adhesion with neighbouring muscles.

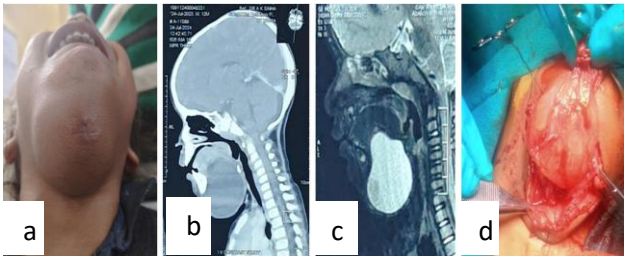

Figure 2: (a) Clinical image showing swelling in submental region with healed scar over it. (b) Sagittal film of CT showing cystic swelling in submental region. (c) Sagittal film of MRI showing cystic swelling in submental region. (d) Intra-operative image showing cyst.

Case 2

2-years-old male child was brought to us with chief complaints of swelling in submental region for 3 months of age. It was insidious in onset, gradually progressive in nature. Past history of redness and purulent discharge from swelling was present 1 year ago for which incision and drainage was done outside at private hospital. On examination a soft, oval swelling of size 6×4 cm present over submental region, there no local rise of temperature, non-tender and was partially trans illuminant in nature. Healed scar present in submental region. No redness over swelling (Figure 2a).

Patient was further evaluated ultrasound was suggestive of a well-defined cystic lesion of size 3.5×1.6 cm seen in submental region with multiple moving echoes seen within the lesion and multiple small soft tissue component seen along the wall of lesion showing minimal vascularity. Further CECT was done which was suggestive of dermoid cyst (Figure 2b). MRI done outside was suggestive of dermoid or infected lymphoma cyst at floor of mouth (Figure 2c).

Patient was planned for excision biopsy with differential diagnosis of lymphatic malformation, intra-operative findings suggestive of a globular cyst of size 6×4 cm in submental region extending till floor of mouth, the anterior wall of cyst adhered to muscle and skin at site of previous incision and turbid putty material found as content of cyst. Cyst was excised in toto and sent for histopathology (Figure 2d). Histopathological examination is suggestive of epidermal inclusion cyst. Patient was managed conservatively in post-op and discharged on pod 1. Patient is on 3 monthly follow up and has no recurrence.

DISCUSSION

Midline neck swellings are a common surgical entity in pediatric population. Almost 12% are of congenital origin. Important differential diagnoses are delphian node adenopathy, epidermal inclusion cyst, thyroid mass, dermoid cyst, laryngocele, ranula, parathyroid adenoma etc.[4] Head and neck region are a frequent habitat of the benign cutaneous cysts. The dermoid and epidermal inclusion cysts are developmental cysts of head and neck region with a reported incidence of 1.6 to 6.9 %.[5] The epidermal inclusion cysts are formed from skin derivatives having cystic enclosure of epithelium within the dermis and it enlarges by gradual filling of keratin and lipid rich debris.[6]

It is usually solitary and becomes evident in young to middle aged persons. The other common differential, dermoid cyst occurs due to defective closure of midline whereas the thyroglossal cysts are due to persistence of remnants after thyroid migration.[7] Few cases of hydatid cyst of neck due to echinococcal infection have also been reported in the past.[8] Haemangiomas and lymphatic malformations are also frequent in cervical areas.[9,10] Each of the above-mentioned differentials have different treatment modality and outcome. Due to varied clinical presentation and different modality of surgical treatment, accurate diagnosis is necessary. The clinical diagnosis of epidermal inclusion cyst is done usually at surgery due to its typical cystic appearance and creamy fluid content. In

both these cases, our initial clinical and radiological suspicion roamed over dermoid, thyroglossal cyst and lymphatic malformation. But on exploration, it turned out as an epidermal inclusion cyst that was confirmed by histopathology later on.

CONCLUSION

Due to varied differentials and separate treatment modalities of midline neck swellings, preoperative diagnosis is mandatory. Proper diagnosis helps us to plan surgery, reduces related complications and morbidity.

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