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CASE REPORT

Subgaleal dermoid cyst of the anterior fontanelle in a child



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Abstract The congenital inclusion dermoid cyst (CDIC) of the anterior fontanel is a benign, slow-growing lesion. Subgaleal location of dermoid cyst is extremely uncommon. We report a case of 14 year old female who had subgaleal dermoid cyst of the anterior fontanel where the cyst could be excised completely with good outcome. Computed tomography scan is the investigations of choice as it will show the greater details of the lesion and its relation to the underlying structures. Characteristic scalloping of the outer table of cranium on radiographs can help to differentiate intracranial extension from extracranial location of the lesion.

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1. Introduction

The congenital inclusion dermoid cyst (CDIC) of the anterior fontanel is a benign, slow-growing, non-tender, soft swelling which is covered with intact skin and accounts for 0.1–0.5% of all cranial tumors (1–6). Total subgaleal location of dermoid cyst of the anterior fontanel is extremely uncommon (7,8). We report a case of subgaleal dermoid cyst of the anterior fontanel where the cyst could be excised completely with good outcome (9).

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2. Case report

A 14 year old female patient presented with the history of scalp swelling over anterior fontanel since birth. The swelling was gradually increasing in size. Now for last one month it was associated with dull aching type headache. There was no history of fever, vomiting, seizures or altered sensorium. Her general and systemic examination was unremarkable. Neurological examination including higher mental functions was normal. In cranial nerves, motor and sensory examination was normal. Local examination revealed a firm, non-tender, non-pulsatile, non-compressible swelling over the anterior fontanel. There was no bruit over the swelling, transillumination test was negative and the skin over the swelling was healthy and covered normal hair. Computed tomography (CT) demonstrated an extracranial homogenous hypodense midline swelling, overlying and covering the anterior fontanel (Figs. 1 and 2). The patient underwent total excision of the swelling.

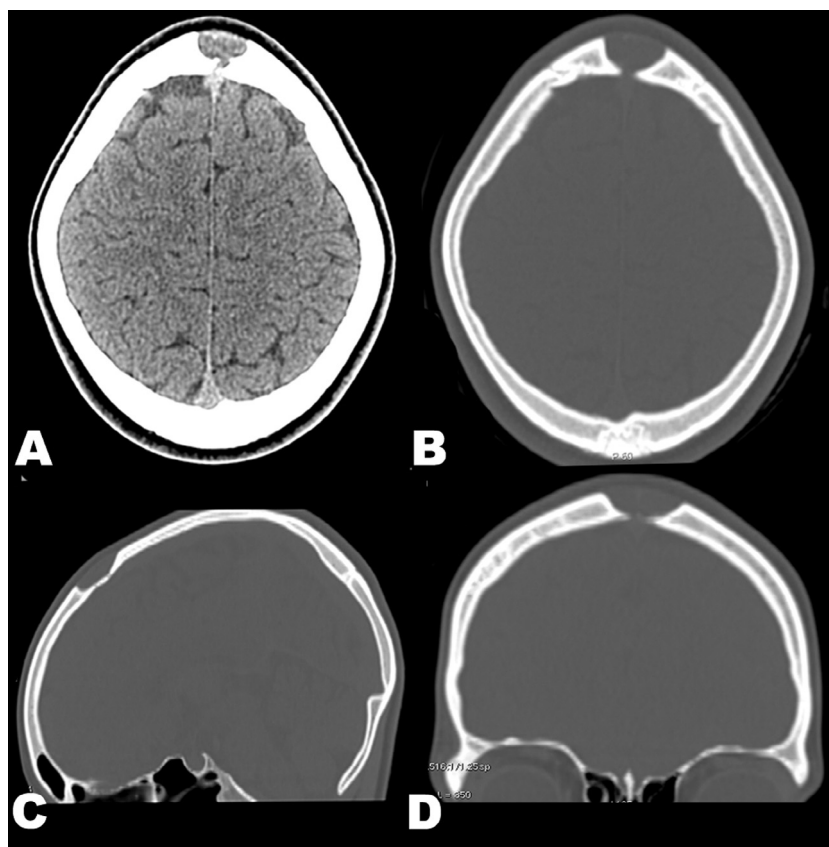


Fig. 1 Axial plain CT images brain window (A) and bone window (B) showing soft tissue swelling at the confluence of the sutures; there was smooth scalloping of adjacent bone with just a focal breach of the inner table. Sagittal and Coronal bone window images (C, D) showing the relations of the lesion with underlying sinus.



Fig. 2 3D Volume rendered image (A) Soft tissue lesion of the vertex in better detail, (B) and (C) showing the remodeling and depression of the skull bones at the bregma caused by the lesion.

The swelling was found between the galea aponeurotica and pericranium (Fig. 3). There was no tissue connection either to the overlying skin or to the intracranial extension. Cyst wall lined by stratified squamous epithelium and lumen showed keratinous material and subepithelial fibrocollagenous tissue showed sebaceous glands, ducts and congested blood vessels (Fig. 4). The postoperative course was uneventful and the later outcome was good without recurrence.

3. Discussion

Dermoid cysts are developmental tumors that develop from germ cells displaced between the 3rd and 5th week of embryogenesis, when the ectoderm folds into the neural tube and lies along the midline at the neural groove closure (5,10–12). Histologically, these cysts have a fibrous capsule, lined by squamous epithelium and contain clear fluid with some adnexal appen-

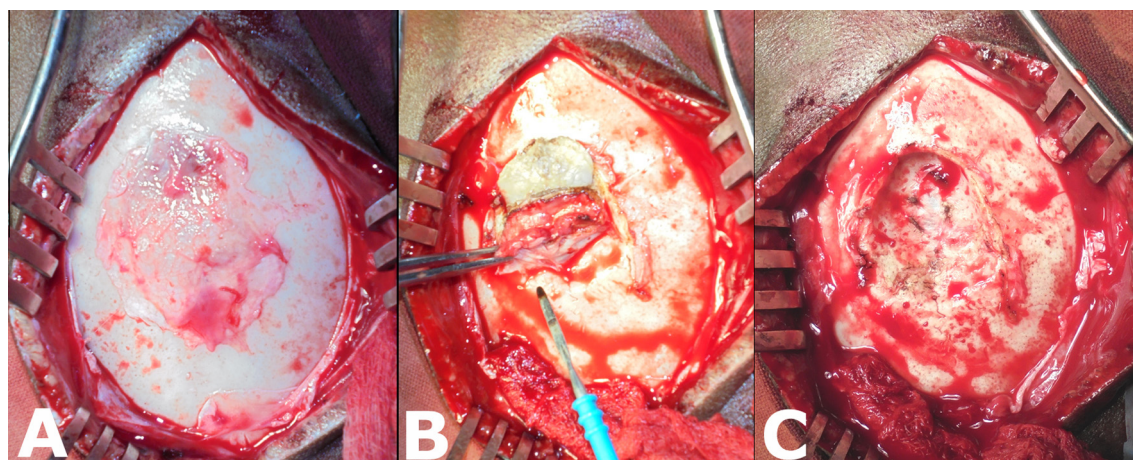


Fig. 3 Intra-operative photographs showing (A) minimal elevation above the cranium and intact pericranium over the swelling suggestive of subgaleal location, (B) complete excision of the swelling with capsule and (C) intact inner table of the calvarium.

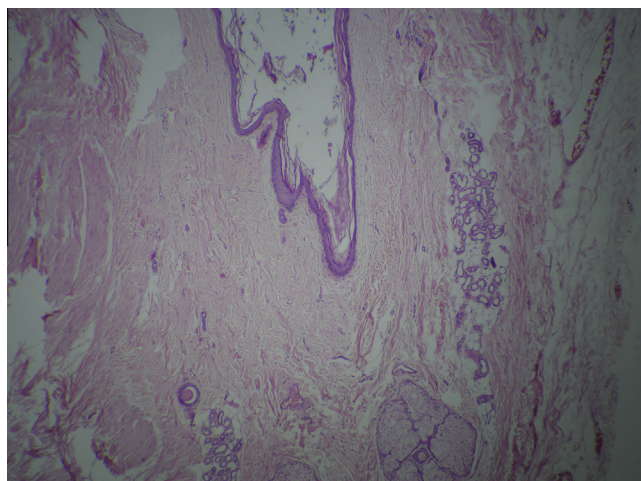


Fig. 4 Cyst wall lined by stratified squamous epithelium and lumen showing keratinous material and subepithelial fibrocollagenous tissue showing sebaceous glands, ducts and congested blood vessels (H&E, X100).

dage structures (i.e. hair follicles, sebaceous and sweat glands) (13–17). Usually these lesions present at birth as a soft, fluctuant, non-pulsatile, non-tender mass (which is covered by normal skin) over the anterior fontanel (3,17–23). A number of cystic lesions in the anterior fontanel region (including sebaceous cysts, lipomas, hemangiomas, anterior meningoencephalocele, cephalhematoma, subgaleal hematoma, lymphangioma, sinus pericranii and abscess) need to be included in the differential diagnosis of dermoid cyst in a child (1,3,5,17,19,22,24–28). Skull radiographs can show the soft tissue shadow over the anterior fontanel and associated erosion and flattening or depression of the skull bones with sclerotic margins (1,3,17,29). Characteristic scalloping of the outer table of cranium on radiographs can help to differentiate intracranial extension from extracranial location of the lesion (1,27,29,30). Computed tomography scan is the investigations of choice as it will show the greater details of the lesion and its relation to the underlying structures (1,17,18,31). Total excision of the sub-

galeal dermoid is the mainstay of the treatment (3,5,7,12,17,18,20,22,32–34). Complete surgical excision helps in confirming the diagnosis, prevents subsequent infection and restores the esthetics (3,5,7,12,17,18,20,22,32–34).

4. Conclusion

In summary, although these lesions present at birth, however many factors have been attributed for delayed presentation including parents' ignorance (5). Following completion of the lesion (5,19,33).

Conflict of interest

Author states that there is no Conflict of Interest.

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