CASE REPORT

Congenital Dermoid Inclusion Cyst over the Anterior Fontanelle: report of two cases

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Abstract

Congenital dermoid inclusion cyst over the anterior fontanelle (CDIC) is an uncommon cystic lesion. It is a benign and curative lesion. In these two cases a soft, cystic mass located over the anterior fontanelle. The cyst had no intracranial extension and was easily excised intact. The clinical and image findings of the cysts were described and compared with the usual dermoids. Many different types of lesions over the children's skull exist and some are commonly diagnosed in daily practice. Congenital dermoid inclusion cyst over the anterior fontanelle (CDIC) is a rare and benign lesion.

Introduction

Dermoid cyst is a pathologic term for a cyst lined by squamous epithelium containing skin appendages (hair follicles, sebaceous, and sweat glands). It has been classified into three categories: (1) Teratoma type congenital dermoid cyst, (2) Acquired implantation dermoid cyst, (3) CDIC resulting from the inclusion of displaced dermoid cells along the embryonic fusion line.[1,2] Dermoid cysts of the head and neck are thought to be mostly of the CDIC type, which is usually around the anterior fontanelle.[3]

Most lesions found around the anterior fontanelle in infancy are dermoid cysts.[1] Other important pathologies are encephalocoele, meningocoele, sebaceous cyst, lipoma, haemangioma, and cephalohematoma. Precise physical examination and neuroimaging can be useful for differential diagnosis.[4,5] Congenital dermoid cysts of the anterior fontanel

Dermoid cysts of the anterior fontanel are excised for cosmetic reasons, to prevent infection, to obtain histological diagnoses, and to rule out malignancy.[6,7] The best procedure is a complete resection of the cystic mass with removal of the wall by blunt dissection of the tumour from the underlying tissue (dura or cranium) through an ellipsoid incision bordering the mass.[2]

Case 1

This 4 years old boy came from Gazipur, Bangladesh seen in April 2014, was the product of a full-term normal pregnancy and normal delivery. At birth, a small soft mass over the anterior fontanel was noted which progressively enlarged. The developmental milestones were normal. Neurological examination was normal. Examination of the head revealed a mass overlying the position of the anterior fontanel, measuring 5×4×3 cm. Radiograph of the skull revealed a soft tissue

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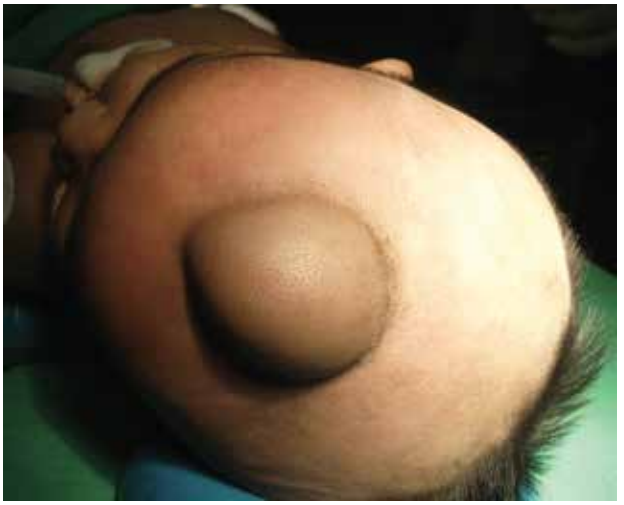


Fig. 1: Preoperative

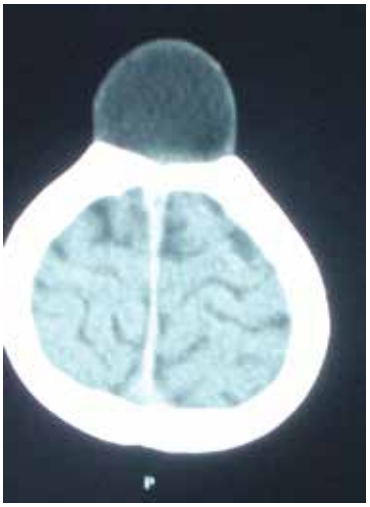


Fig. 2: CT axial

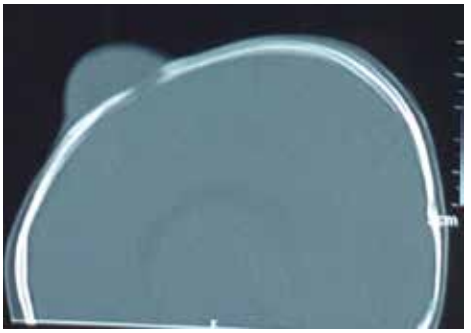


Fig. 3: CT bone window

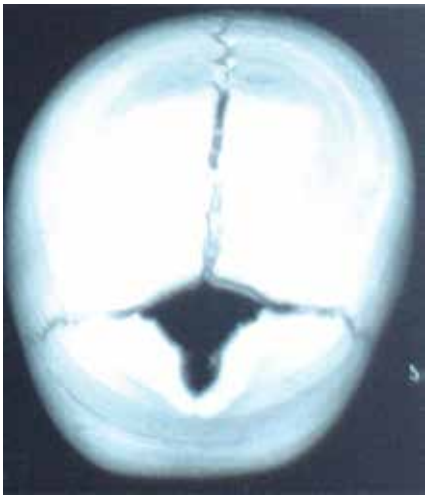


Fig. 4: CT 3D

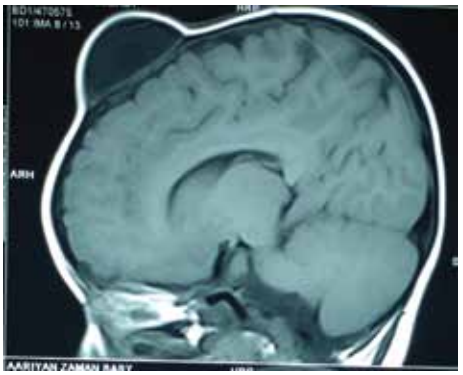


Fig. 5: MRI T1W1

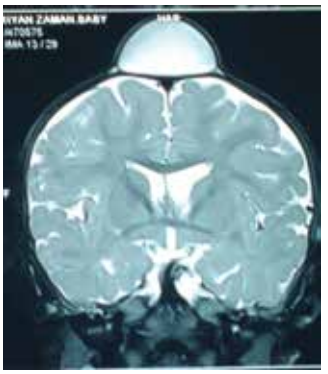


Fig. 6: MRI T2W2

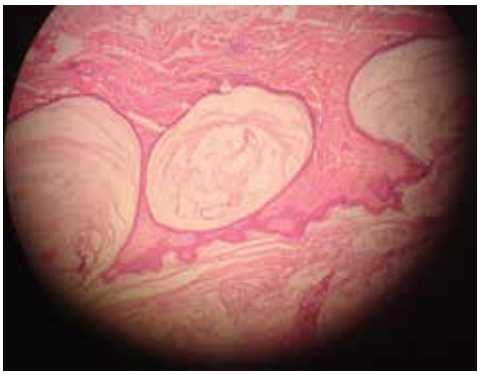
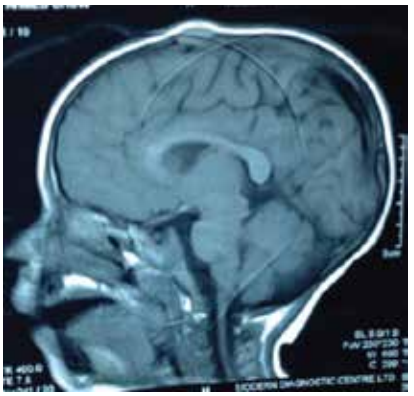


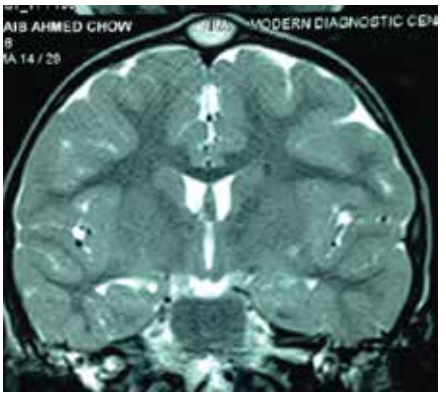
Fig.7 Histopathology

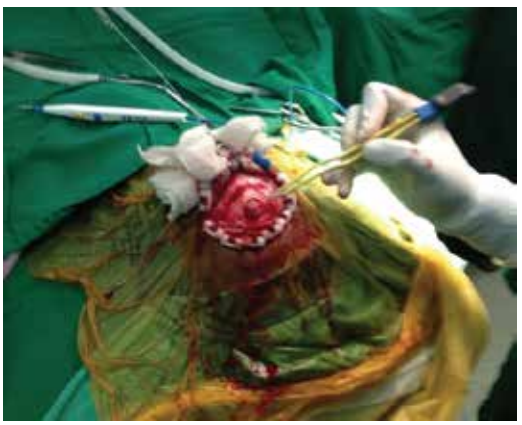
shadow over the anterior fontanel. Ultrasonography showed a hypoechogenic mass having a well defined sonolucent interior with a clear wall separating it from sagittal sinus and intracranial content. Computed tomography scan demonstrated a well shaped hypodense lesion, non-enhanced by the contrast and without intracranial communication. Magnetic resonance imaging (MRI) showed a low-intensity mass on both T1-weighted imaging (T1WI) and diffusion-weighted (DWI). Hyper intense on T2 weighted image. Cyst was aspirated and clear fluid was obtained. At surgery a thin-walled, translucent cyst could easily be dissected from the areolar subgaleal tissue and excised intact. There was no connection to the overlying skin or intracranial structures.

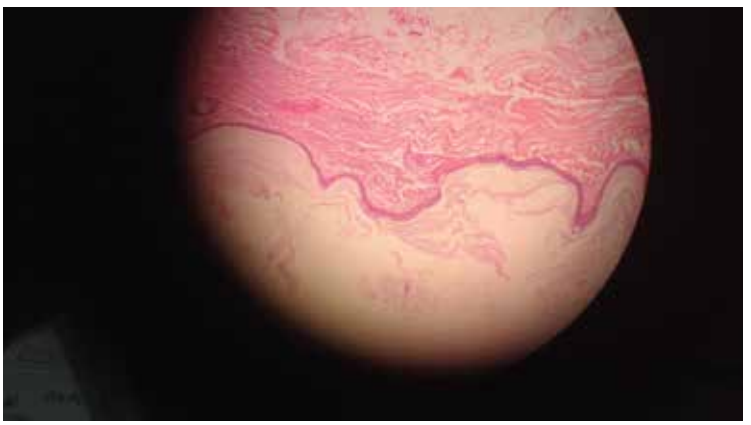
Case 2

This 2 years old boy came from Mirpur, Dhaka, Bangladesh seen in May 2014 was the product of a full-term normal pregnancy and normal delivery. At birth, a small soft mass over the anterior fontanel was noted which progressively enlarged. The developmental milestones were normal. Neurological examination was normal. Examination of the head revealed a mass overlying the position of the anterior fontanel, measuring 3 × 2 × 2 cm. Ultrasonography and image findings same as case 1. At surgery a thin-walled, translucent cyst could easily be dissected from the areolar subgaleal tissue and excised intact. There was no connection to the overlying skin or intracranial structures.









In the past, some authors injected air or contrast medium (Pantopaque), others used ventriculography, in order to show interconnection between the cyst and intracranial cavity.[12] Currently, CT and MRI are considered the best examination methods, to confirm its extracranial position.[13,14] Encephalocele, meningocele, hemangioma, lipoma, cephalohematoma, sebaceous cyst, pilonidal cyst and sinus pericranii are important parts of the differential diagnosis.[15,16] There are no reports about neurological abnormality or any recurrence of the lesion. The surgical indication is based on preventing subsequent infection, pathological diagnosis and an aesthetic aspect.

Conclusion

This lesion is a benign, simple and easy to treat by surgery and free of significant surgical complication. Therefore, we are including our cases in order to provide a long-term view of this condition. We predict our results will prove that CDIC is a benign and curative lesion.

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