

Unusual Cause of Bumpy Head in Neonates: Calcified Cephalhematoma

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Abstract

Cephalhematomas, which are usually a complication of assisted delivery, might get calcified in a minority of newborns, resulting in a hard palpable skull swelling. This is a matter of concern for both the parents and the clinician as it might lead to osseous deformities and craniosynostosis, apart from the cosmetic deformity. Hence, its identification in the early stages might help in appropriate management of the child. We present a case of a 1 month old child with hard scalp swelling which gave an appearance of double skull on radiological examination. As the child did not have any neurological deficit, follow up was preferred as the management plan. We also discuss the complications and other management plans of this condition.

Keywords: calcified cephalhematoma, ossified haematoma, scalp swelling, cephalhematoma,

Introduction

Cephalhematomas are post traumatic subperiosteal blood collections, usually seen in <1% of the new-borns born through assisted vaginal delivery (forceps, vacuum) [1, 2]. It can also be seen after a normal vaginal delivery. Usually, they resolve within first few weeks of life [3]. However, if they persist even after that, they might calcify leading to formation of calcified cephalhematoma, which is an uncommon complication. The incidence is reported in <5 % of the cephalhematomas [4].

Case Report

A 1-month-old child presented with history of hard swelling and scalp deformity since birth over the bilateral parietal regions. The swelling was initially soft and pliable, but over the past few weeks it has gradually become hard. This led to apprehension in the parents, for which the child was brought to the hospital for evaluation. No neurological symptoms were seen in the child. Perinatal history revealed that the child was born through forceps assisted delivery in view of prolonged labour. No other perinatal complication was recorded. On local examination two separate hard, non-fluctuant, non-tender, non-pulsatile swellings were seen over the bilateral regions, measuring ~5 x 5 and 3x 3 cm in size on the right and the left side respectively. Systemic examination was normal. Computed Tomography revealed two hypodense scalp swellings in bilateral parietal regions with outer calcified layers giving a double skull appearance. Underlying calvarium was normal. Since the child was asymptomatic, the parents were reassured of the benignity of the swelling and advised to follow up at regular intervals.

Discussion

Cephalohematomas occur as a result of bleeding into the subperiosteal layer, likely from the subperiosteal blood vessels which get torn up due to shearing forces between skull and periosteum during the assisted deliveries. This might lead to stripping of the periosteum away from the underlying calvaria. Thus, the cephalhematomas are limited by the sutural lines [1, 3]. They usually occur after assisted deliveries through forceps and vacuum, however the might also be seen in normal vaginal deliveries or in a newborn with any coagulation disorder [4].

Cephalhematomas usually resolve over the first 1-2 weeks of life. But in <5 % of the cases the outer stripped layer may show eggshell calcification and gradually expand over time [4]. Two types of ossified cephalhematomas have been described, according to whether the lamella located below the cephalhematoma is not depressed (Type I) or depressed (Type II) relative to the surrounding normal calvaria [4]. Radiological assessment through radiography, Computed tomography (CT) and Magnetic resonance imaging (MRI) is recommended. On CT scan, it appears as a hypodense lesion with calcified outer layer and the underlying calvaria as the inner layer, thus giving a “double skull appearance” [5]. Bone window in CT can be helpful in assessment of the inner lamella and further classification of the lesion. MRI can be helpful in symptomatic children, to assess the brain parenchyma and to rule out any intracranial extension [6].

Complications of this entity are usually cosmetic and osseous deformity [7]. However, in a few cases, infections and osteomy-

elitis might be seen (where aspiration of the cephalhematoma was attempted). Any brain parenchymal damage is usually rare.

Management options for cephalhematomas are varied and controversial. Management options change according to the size and type of the lesion. Asymptomatic early cases with small sized lesion, can be managed conservatively with timely follow up. With time the remodelling of the swelling might be seen, where the swelling merges with the calvaria giving a smooth skull contour. For early cases with thin calcifications, aspiration of the cephalhematoma with a wide bore needle can be attempted [8]. Surgical management is needed in case of larger swellings, gross deformity of the skull or craniosynostosis. While simple osteotomy of the outer lamella is done in Type I lesion, Type II lesion require a flip-over “bull’s-eye” or cap radial craniectomy to elevate the depressed inner lamella [4]. Thus, in our case the child was planned to be managed conservatively.

Clinicians are usually well aware of different causes of small skull bumps in the newborn, like neonatal scalp hematoma, craniosynostosis, dermoid and epidermoid cysts etc. Ossified cephalhematoma might be missed as a differential. However, clinicians should be aware of this entity as a rare cause of scalp swelling in newborns, because of its cosmetic and clinical implications, so that the child can be appropriately and timely managed.

Conclusion

Though rare, calcified cephalhematoma should be considered as an important differential for head swellings in newborn. Timely diagnosis can warrant appropriate management of the child, whether conservative or surgical.

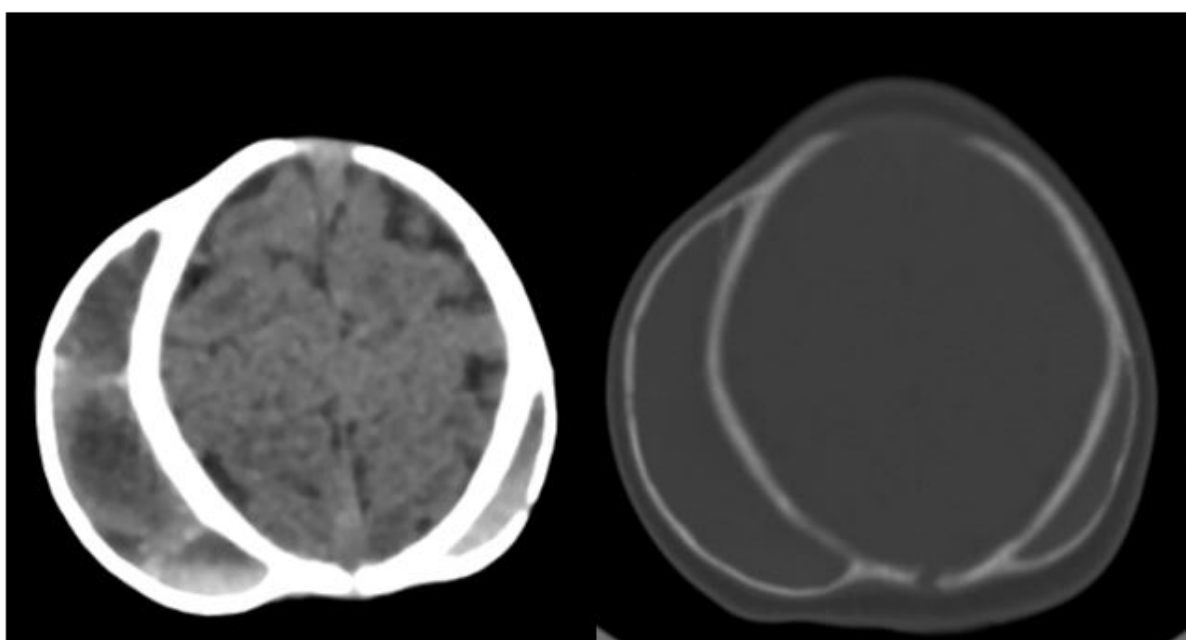


Figure 1: Axial sections of non-contrast CT scan of the head shows biparietal hypodense swellings with ossified outer layer. Few hyperdense contents are seen within. The underlying calvaria appears normal.

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