Journal of medical & pharmaceutical Sciences
Volume (3), Issue (4) : 30 Dec 2019
P: 68 - 72
ISSN: 2522-333X
مجلة العلوم الطبية والصيدلانية
المجلد (3)، العدد (4) : 30 ديسمبر 2019 م
ص: 68 - 72

Calcified cephalohemtoma: A case report

Maryam Mohamed Ali
Abdalla Mohamed Etbiga
Faculty of Medicine || Sirte University || Libya

Abstract: Cephalohaematomas are traumatic subperiosteal hematomas of the skull that are usually caused by birth injury. They are bound between the periosteum and cranium, and therefore cannot cross sutures. Being bound by a suture line distinguishes them from subgaleal hematoma, which can cross sutures. Cephalohematomas occur in 1-2% of live births. The incidence increases with ventouse and forceps extraction and thus more common in primiparous mothers. There may be a greater male predilection. Cephalohaematomas are clinically diagnosed and infrequently imaged. They can be unilateral or bilateral, and appear as subgaleal fluid collections bounded by suture lines. In the setting of craniosynostosis, the blood products are able to traverse the affected suture. By 2-3 weeks, they may become peripherally calcified. The hematoma usually resolves in 2-3 months. Most resolve spontaneously. Cephalohaematomas usually gradually incorporate into the calvaria by ossification. This report describes a Libyan infant of two months of age, presented with a hard-globular swelling over the right parietal region. The child was delivered via vaginal delivery, it was a difficult delivery, at birth the cephalohemtoma was noted. The swelling was initially soft but later became hard. A suspicion that calcified cephalhematoma could present in such a manner supported by careful history taking and relevant imaging (X-ray/computed tomography) would help in appropriate evaluation of this benign condition.

Keywords: Cephalohematoma, subgaleal hematoma, calcification, reconstructive surgery, cap radial craniectomy, Computed tomography scan (CT scan).

تكلس رأس الدم الدموي

مريم محمد علي
عبد الله محمد اطبيقه
كلية الطب || جامعة سرت || ليبيا

الملخص: رأس الدم الدموية هي الصدمة تحت الترقوة الدموية من الجمجمة التي عادة ما تكون ناجمة عن إصابة الولادة. يتم تشخيصها سريرياً ونادرة التصوير. هذه الرأس الدموية هي السندات من قبل العظم، بالتالي لا يمكن عبور الغرز. كأغلبية الرأس الدموية تمتص في غضون شهر من الولادة. ستكون نسبة منهم متكلسة مع مرور الوقت. الأشعة المقطعية هي أفضل طريقة تصوير لتشخيص تكلس رأس الدم الدموي.

الكلمات المفتاحية: ورم دموي، تكلس، جراحة ترميمية، استئصال القحف الشعاعي، مسح مقطعي محوسب (تصوير مقطعي).

Introduction

Cephalohematoma is a collection of blood between the skull and the peri cranium confined within the borders of cranial sutures. These hematomas, also known as tumour crania sanguineous [1] are

often caused by trauma associated with instrument assisted vaginal birth and are usually apparent within 24-72 hours after birth. The majority of cephalohematomas spontaneously resorb within one month of life, but rarely it may calfiy [2].

Calcified cephalohematoma has inner and outer layers of bone. The inner layer consists of the foetal inner and outer table of intramembranous calvarial bone and the outer layer is made up of subpericranial bone formed after separation of the pericranium for the underlying calvarium. For the purpose of description and to avoid confusion, in this case report the former is referred to as the inner lamella and the latter as the outer lamella. We classified calcified cephalohematoma into two types; Types 1 and 2, with the distinguishing feature being the contour of the inner lamella in relation to the surrounding normal cranial vault. Type 1 calcified cephalohematoma has a non-depressed inner lamella with no encroachment into the cranial vault space while in Type 2, the inner lamella is depressed into the cranial vault space [2, 4].

Case report

An infant of two months of age, presented with a hard globular swelling over the right parietal region. The child was delivered via vaginal delivery, at 38 weeks gestation. It was a difficult delivery, at birth the cephalohemtoma was noted. The swelling was initially soft but later became hard(Figure 1).

Figure (1) Clinical photograph showing swelling over the right parietal scalp.

Ultrasound was done, it was not informative, it revealed irregularities on cortical bone over the swelling.

Non -contrast CT scan of the brain demonstrated features consisting with type 1 calcified cephalohemtoma.

The inner and outer tables of right parietal bone are ossified with intervening organized hematoma, the inner table is continuing with normal contour of the skull, it has a non- depressed inner lamellar with no encroachment into the cranial vault space(Figure 2 and 3).

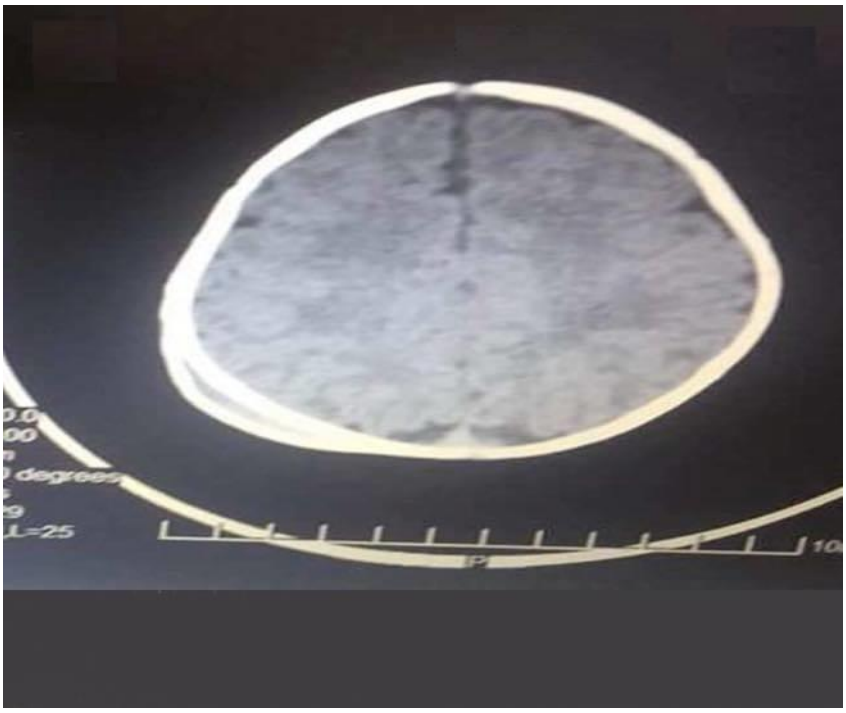

Figure (2) CT scan of brain (Axial section).

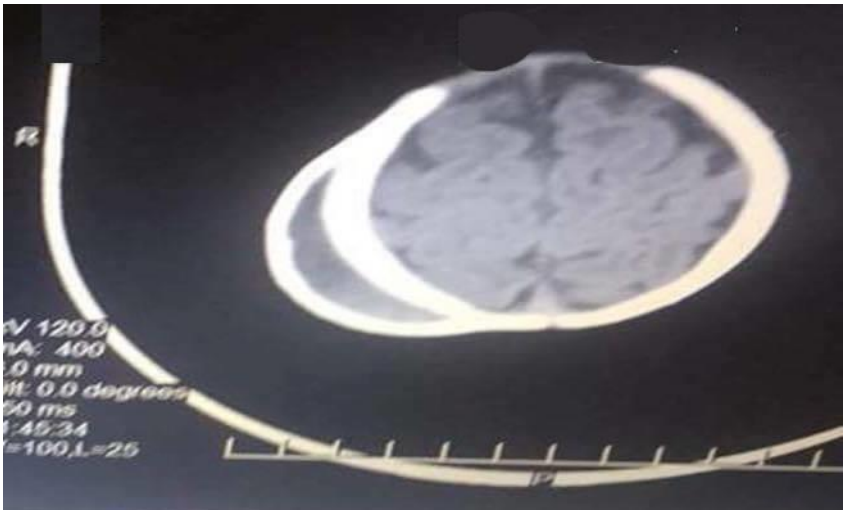

Figure (3) CT scan of brain (Axial section).

Discussion

As majority of cephalohematomas resorb within a month of birth, they should be expectantly observed during this period. Aspiration can be attempted for any significantly sized cephalohematoma when it failed to resolve after a month. Early authors such as Cushing have cautioned against aspiration for fear of infection and consequently osteomyelitis [2, 3]. This fear is probably unfounded with proper

technique and prophylactic antibiotics available today [1, 5-6]. This should be done early (before 3-6 months of age) before a significant amount of bone has been laid down by the lifted pericranium. Firlik and Adelsen [7] reported a case of large chronic cephalohematoma that was observed for three months without any calcification and was successfully aspirated.

Sarkar et al reported an infant presenting with a large calcified cephalohematoma leading to the surgical intervention using cap radial craniectomy, and these authors recommend the use of reconstructive surgery of skull in appropriately selected cases of large calcified cephalhaematoma [8].

The management of calcified cephalohematoma is controversial. Occasionally, they undergo spontaneous remodeling. Those with secondary craniosynostosis and/or disfigurement are treated surgically. Simple ossified lesions with no significant cosmetic issues may be conservatively tackled[9].

For calcified Type 1 hematomas, Wong et al. propose an ostectomy of the outer layer while in Type 2, they have advocated a flip-over bull's-eye craniectomy or a cap radial craniectomy.[10] For incompletely OC in children <12 months old, Petersen et al. have advocated a "passive cranial molding helmet therapy" though others have expressed concerns that this might convert a Type 1 into a Type 2 variant[10] .

A differential diagnosis is likely to be missed unless the physician is aware of this rare entity. It can be misinterpreted as a bony tumor. This is likely to cause unwanted distress to parents. Further, considering the possibility of calcified cephalohematoma would lead the attending physician to seek appropriate imaging (X-ray/CT scan) and skip fine-needle aspiration which may be unwarranted in such lesions. Supported by relevant history and classical CT imaging, the parents could be convinced of such benign condition which may require just follow-up in cases with no significant cosmetic or cranial effects[9].

The authors recommended the cap radial craniectomy technique for irregularly shaped calcified cephalohematomas with a thinned-out inner lamella (type 2) as it allows total reshaping of the outer lamella to the desired contour[9].

After surveying the literature, the use of reconstructive surgery of skull emphasized and recommended in appropriately selected cases of large calcified cephalhaematoma as observed in our case[9].

Awareness and a clear treatment protocol are important for an optimal outcome.

Early aspiration and pressure dressings may prophylactically reduce the incidence of calcified cephalohematoma. Surgical options depend on the type of calcified cephalohematoma and an excellent outcome can be achieved with appropriately selected technique.

conclusion

Cephalohaematomas are traumatic subperiosteal hematomas of the skull that are usually caused by birth injury. Cephalohaematomas are clinically diagnosed and infrequently imaged. These Cephalohaematomas are bond by the periosteum and therefore cannot cross sutures. As majority Cephalohaematomas resorb within a month of birth. A proportion of them will calcify over time. CT scan is the best imaging modality to diagnose calcified Cephalohaematomas.

References

1- Chorobski J, Davis L (1934) Cyst formations of the skull. Surg Gynecol Obstet 58: 12

2- Morgan JE (1944) Calcification in cephalhematomata of the newborn infant. Am J Obstet Gynecol 48: 702

3- Tan KL (1970) Cephalohematoma. Aust N Z J Obstet Gynaecol 10: 101

4- Chung HY, Chung JY, Lee DG, Yang JD, Baik BS, et al. (2004) Surgical treatment of ossified cephalhematoma. J Craniofac Surg 15: 774-779

5- INGRAM MD Jr, HAMILTON WM (1950) Cephalohematoma in the newborn. Radiology 55: 502-507

6- Negishi H, Lee Y, Itoh K, Suzuki J, Nishino M, et al. (1989) Nonsurgical management of epidural hematoma in neonates. Pediatr Neurol 5: 253-256

7- Firlik KS1, Adelson PD (1999) Large chronic cephalohematoma without calcification. Pediatr Neurosurg 30: 39-42

8- Sarkar S, Dey Avijit, Mazumder U, Hossen MK, Saha S, et al. (2017) Large calcified cephalohematoma-A case report. Clin Res Trials 3: doi: 10.15761/CRT.1000195

9- Krishnan P, Karthigeyan M, Salunke P. Ossified Cephalhematoma: An Unusual Cause of Calvarial Mass in Infancy. J Pediatr Neurosci. 2017;12(1):64–66

10- Wong CH, Foo CL, Seow WT. Calcified cephalohematoma: Classification, indications for surgery and techniques. J Craniofac Surg. 2006;17(15):970–9