

Case Report

A Case Report of Significant Congenital Depressed Skull Fracture after Cesarean Section Delivery

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ABSTRACT

We report a case of depressed skull fracture in an hour old newborn delivered by cesarean section for breech presentation. The depression was surgically corrected as a spontaneous resolution did not occur after some interval. Surgical correction of depressed skull fracture may be indicated depending on the depth of depression and thickness of the bone at involved part of the skull.

KEYWORDS: Congenital, depressed skull fracture, neonate

INTRODUCTION

Depressed fractures of the cranial vault in infants are different from those that occur in older children and adults. This injury occurs in newborns and young infants because the elasticity of developing bone allows for indentation without breaking. For this reason, the depressed fractures occurring at this age are called “Ping Pong” or “Green Stick” fractures.^[1]

During delivery, the neonatal calvaria sustains pressure from multiple maternal structures and sometimes from obstetric instruments. Less compliant intracranial structures (such as the dural attachments and major vessels) are unable to withstand as much deformation and can be torn or ruptured, which leads to intracranial injuries.^[2]

In a study from the United States, birth trauma involving head and neck found occurred at an incidence rate of 0.82% (prevalence of 9.56/1000 births) per year.^[3] Congenital depression of the fetal skull in newborns is uncommon, with a reported incidence ranging between 1 and 2.5 per 10,000 live births.^[4]

Factors commonly encountered in neonates with congenital skull fracture include forceps delivery, maternal trauma, large uterine fibroids, fetal malpresentation, and compression by fetal limbs. Skull depressions rarely have been observed in atraumatic deliveries such as those performed by means of a cesarean section.^[4]

CASE REPORT

An hour old neonate was delivered by cesarean section for breech presentation at 41 weeks of gestation from

27-year-old para 1 mother. The outcome of delivery was male newborn with a birth weight of 2.59 kg and Apgar scores of 2, 6, and 9 at 1st, 5th, and 10th min. The newborn was resuscitated immediately after birth. The report from operation note depicted difficult breech extraction during delivery. There was no uterine mass or cephalopelvic disproportion identified. No obstetric instruments for delivery applied during fetal extraction.

At the time of presentation in the neonatal unit, the newborn has depressed neonatal reflexes and fracture at the left parietal region of the skull with 3 cm by 3 cm area and 2.5 cm depression. On follow-up, the baby neonatal reflexes showed improvement and baby was able to move all extremities with no symptoms or signs of increased intracranial pressure.

Emergency computed tomography (CT) scan was done to confirm the degree of the fracture and identify associated intracranial injuries. The imaging showed [Figure 1] depressed high left frontoparietal fracture on the skull. No hemorrhage, infarct or abnormal extra-axial fluid collection noted.

Neurosurgical consultation and evaluation was made and decided to observe the baby for possible spontaneous resolution of the depressed skull fracture. However,

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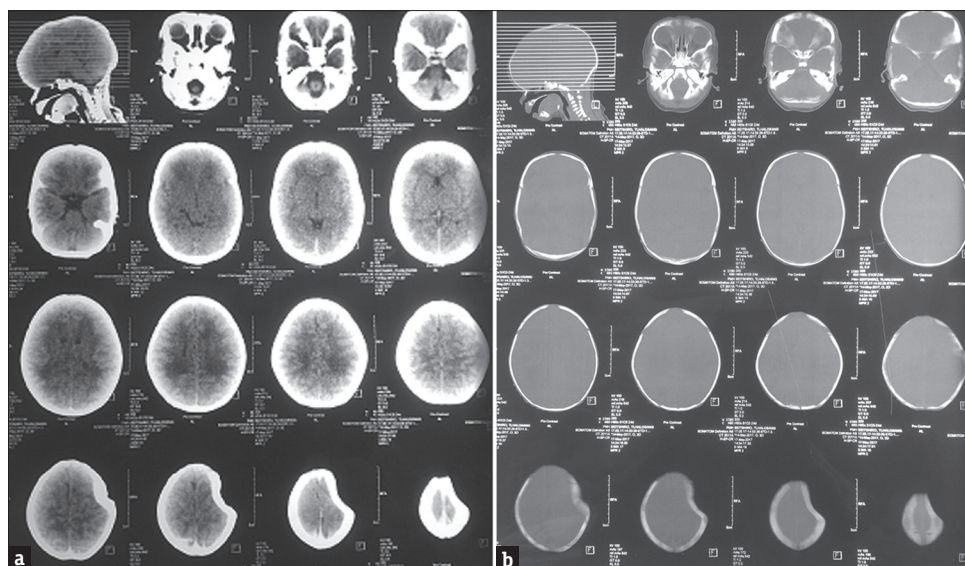


Figure 1: (a and b) Computerized tomography picture of a newborn with left frontoparietal depressed skull fracture

follow-up evaluation showed no resolution of the depression at day 8 of life. Considering the degree of depression and thickness of the bone as shown of the CT scan decision was made to surgically correct the problem.

The patient was taken for surgery, and under general anesthesia a bur hole was made at the left parietal region of the skull posterior to the depression. The fracture was elevated through the bur hole. Postoperation skull X-ray was done [Figure 2] and showed the satisfactory elevation of the depressed fracture.

DISCUSSION

Congenital depressions of the skull have an incidence of 1 in 10,000 births.^[4] These fractures have traditionally been managed surgically. More recently there have been demonstrations of spontaneous elevation, although there are no definite predictors to demonstrate which fractures elevate spontaneously. It has been demonstrated that the deeper the depressed bone (>1 cm), the higher the risk of dural laceration and cortical laceration in adults and older children. However, there is no clear-cut data on neonates. The prompt elevation is necessary because after 72 h the bone becomes more difficult to elevate.^[1,5]

In our patient, we successfully managed to elevate the depressed fracture without any postoperative complications.

CONCLUSION

Even though most literature report spontaneous resolution of the depressed fracture, we found our patient did not show improvement. Surgical correction

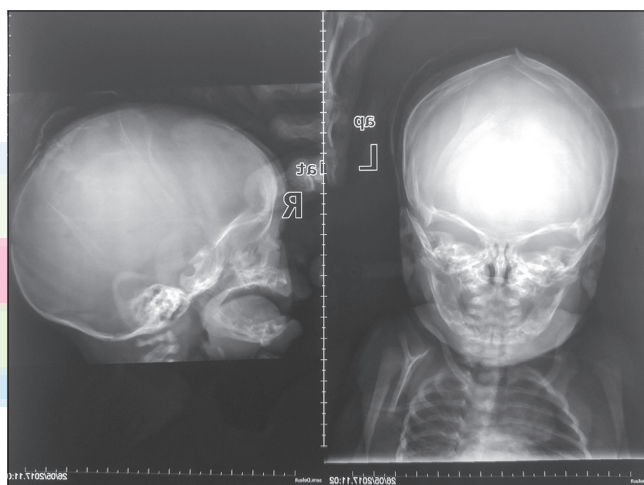


Figure 2: Skull X-ray picture of a newborn baby whose depressed skull fracture corrected surgically

of depressed skull fracture may be indicated depending on the depth of depression and thickness of the bone at involved part of the skull.

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Conflicts of interest

There are no conflicts of interest.

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