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Neonatal ping pong fracture

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A term baby-girl was delivered from a 26-year-old G2/P1 by an elective Caesarian at 39 2/7 weeks of gestation after an uncomplicated pregnancy. She was in vertex presentation and the amniotic fluid was clear. Surgery was uneventful. There was no maternal history of cephalopelvic disproportion and no history of tauma or fall during antenatal period. The girl adapted well with an Apgar score of 9, 10, and 10 at 1, 5, and 10 minutes, respectively.

The girl (birth weight of 3130 g, normal length and head circumference) had a depression on the left anterior temporo-parietal region measuring 4x4 cm without associated scalp swelling (Fig. 1). Her neurological status was normal and there were no congenital anomalies. The baby was not taking feeds adequately and developed pallor and irregular breathing with an undulating oxygen saturation. She was then referred from the maternity hospital to our unit. Cerebral ultrasound was normal without signs of intracranial bleeding or contusions (Fig. 2, 3). Skull x-ray showed a depression fracture the left temporo-parietal bone without fracture line (Fig. 4) which was confirmed by ultrasound (Fig. 5,6). A split-image procedure was refused by the parents. The breathing irregularity was interpreted as transient tachypnea of the newborn. Elevation of the depressed skull area through a borehole was suggested by the pediatric surgeon. The parents, however, felt that such an operation wold be

too invasive and wanted to look for an alternative way to treat this greenstick fracture. The baby was discharged after a three-day-hospitalization.

Based on this case we would like to take the opportunity to discuss etiology, diagnostic evaluation, therapy and outcome of congenital depression fractures of the skull.

DISCUSSION

Traumatic injury to the skull and brain in utero is rare (1) and rarely needs intervention or causes persistent disability (2, 3). Birth injury falls into 2 categories: A) injuries produced by the normal force of labour and B) those produced by obstetric interventions. The incidence is higher in the instrumental deliveries and significantly more likely to be associated with intracranial lesions.

The ping pong skull fracture is a green stick fracture of the skull, it occurs when the skull bones are still soft, thin and resilient. It presents as a depression deformity of the skull – similar to a dent in a ping pong ball – with no fracture line seen radiologically. It is thought that a ping pong fracture results from the pressure of the ischial tuberosity or sacral promontory symphisis pubis against the soft skull during labor (3). Associated intracranial injuries are rare. This condition can be diagnosed clinically. Plain x-ray may show the degree of deformation. An ultrasound of the skull is

Fig. 1

Ping pong fracture in the left temporo-parietal region (arrow heads).

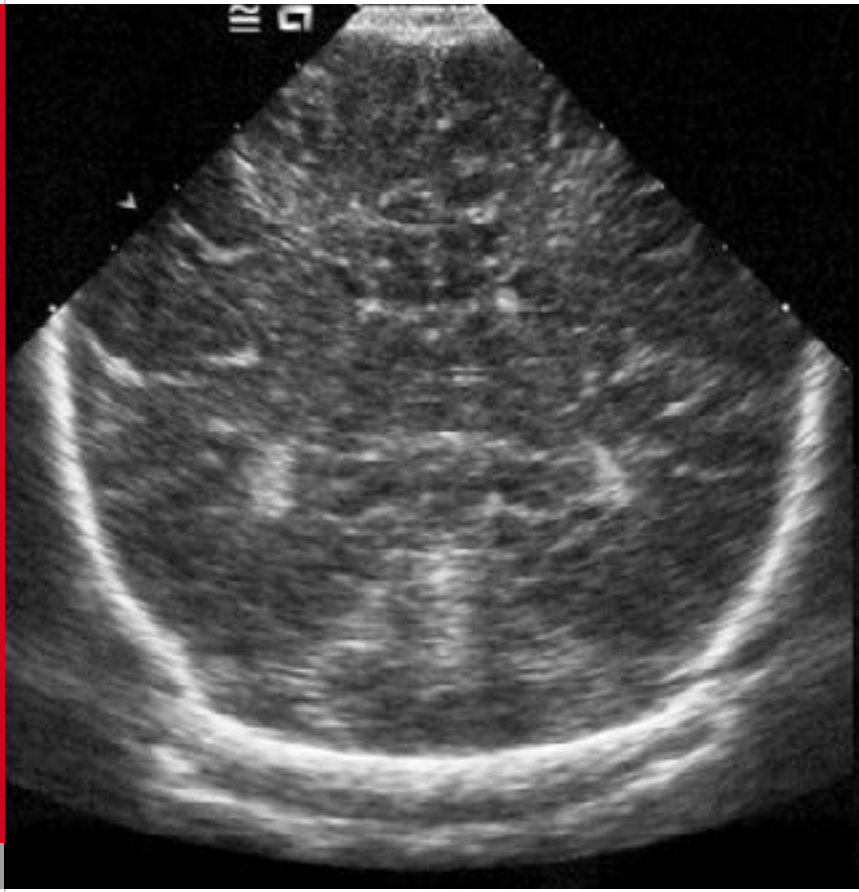

Fig. 2

Cerebral ultrasound: coronal (2a) and paracoronal (2b) views with the latter demonstrating the ping pong fracture (arrow).

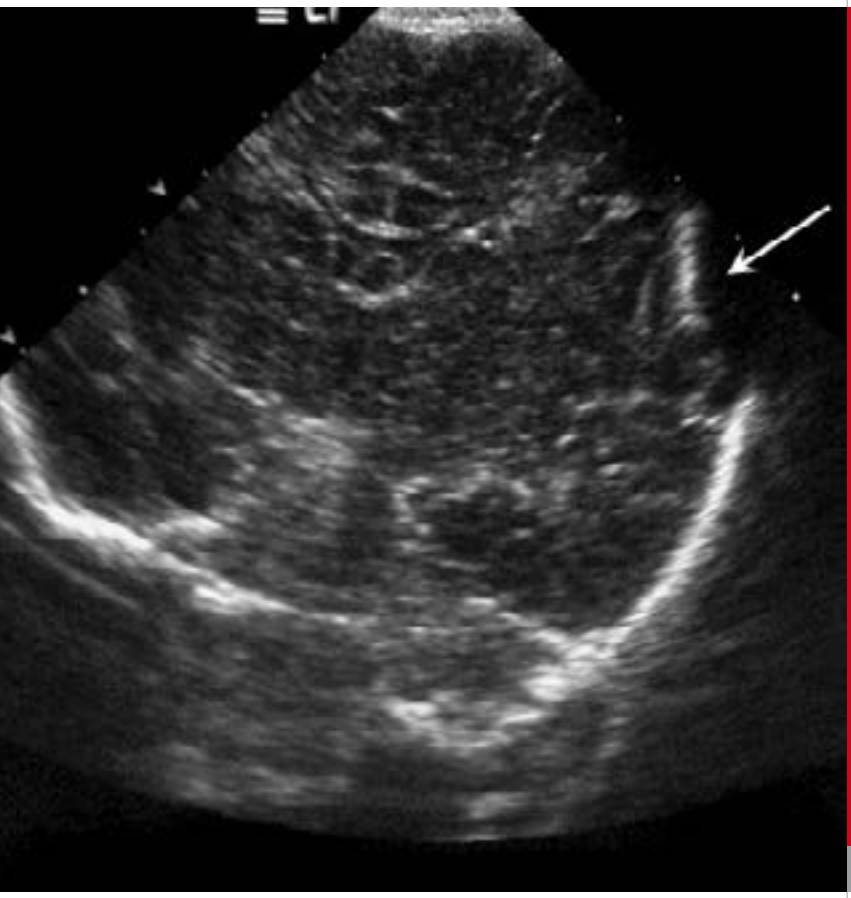

Fig. 3

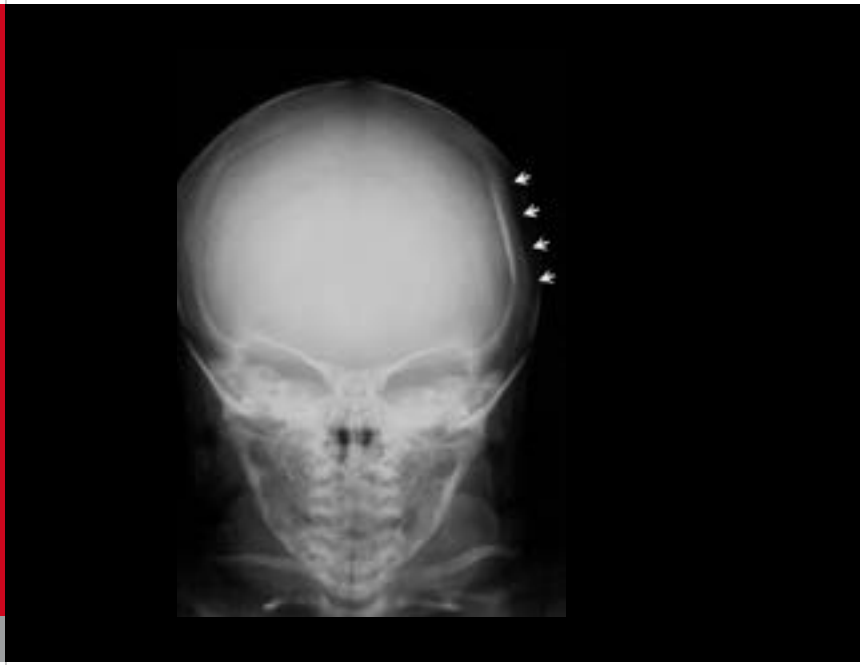

Fig. 4

Skull X-ray.

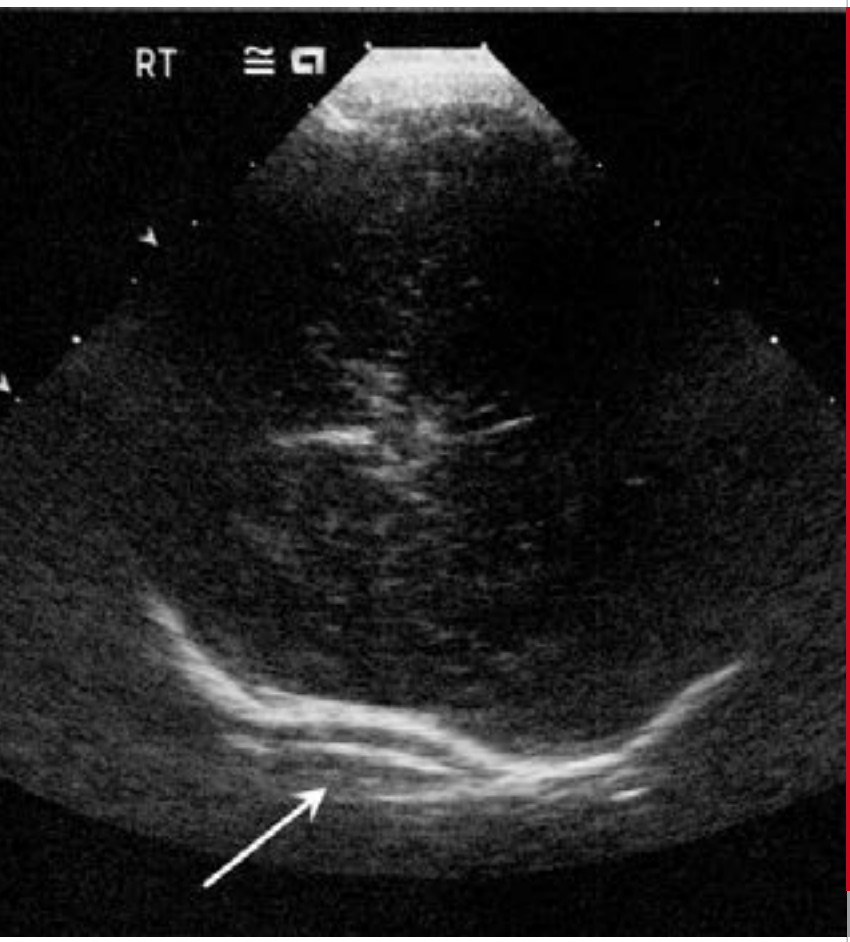

Fig. 5

Cerebral ultrasound: Ping pong fracture in a transcranial scan (arrow).

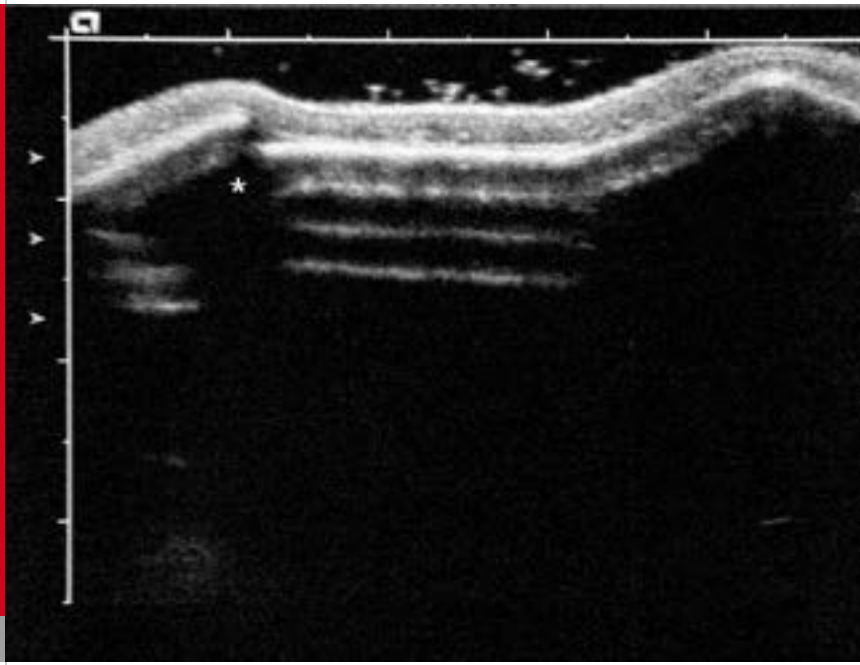

Fig. 6

Cerebral ultrasound: horizontal scan.

an easily available bedside tool for the diagnosis and management of intracerebral hematoma in neonates. Affected infants may be asymptomatic unless there is an associated intracranial injury. The management of depressed skull fractures neonates is discussed controversially. Small lesions are likely to resolve spontaneously without any surgical intervention (4). Large lesions (> 3 cm) with a mass effect leading to midline shift, require corrective surgery. In addition, it is advisable to elevate severe depressions to prevent cortical injury from sustained pressure. Such cases can be treated easily by elevating the depressed bone fragment

either by an obstetrical vacuum extractor (5, 6) or a minimally invasive borehole procedure adjacent to the depressed skull fracture.

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