Birth injuries in caesarian sections cases of fracture femur and humerus following caesarian section

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ABSTRACT

Long bone injuries are less common during caesarian section. Sometimes, they remain unnoticed to the operating surgeon but are frequently noted by attending physician or nurses. The aim of this case study is to remind the surgeon that any forceful extraction may result long bone injuries. So, care should be given during and after delivery to rule out injuries.

Keywords: Birth injuries, caesarian section, long bones fractures.

Fetal injuries are relatively less common in caesarian sections as compared to vaginal deliveries. However, in certain difficult cases, injury may be sustained by the newborn as a result of mechanics of delivery.

Shoulder dystocia, singleton breech with large or small fetus, twin pregnancies, fetal macrosomia, cephalopelvic disproportion, disuse osteoporosis prematurity, prolonged labour, forceps application, external version and forceful extraction are some of the predisposing factors associated with birth injuries.[1]

CASE-1

A 2 day old male child was referred to Orthopaedic department with his right hip in full flexion and was not moving his right lower limb. The child was delivered at 38 wks gestation, weighing 3.14 kg, by caesarian section from a 22 years old primigravida with single intrauterine left footling breech presentation. Operating surgeon gave history of energetic traction and rotation since it was a difficult delivery. X-ray of thigh was obtained which revealed spiral fracture shaft of right femur (Fig. 1, i).

Subsequently strapping was done with hip in full flexion, with anterior surface of thigh touching abdomen and maintained for 2 weeks. In the next 3 weeks, there was clinical as well radiological evidence of exuberant callus formation (Fig.1, ii), no clinically significant deformity and normal range of movements was noted at hip and knee. Follow up after two years reveals no limb length discrepancy and normal gait.

CASE-2

We received a call from neonatal ICU for a caesarian delivered male child stating he was not moving his left upper limb. The child was delivered post dated by caesarian section from a 32 years old primigravida. Operating surgeon gave history of energetic traction but he heard no obvious sound of bony fracture during surgery. The child started crying with movements of his left arm during examination. X-ray of his upper limb showed fracture of shaft of left humerus (Fig. 2 i).

He was treated with strapping (limb body strapping (Fig. 2 ii) keeping the arm by the side of his body and check X-ray was obtained. This was acceptable in alignment (Fig 2iii) Child's mother was advised to follow up after 3 weeks. However, they lost to follow up. We assume they followed up with the near by orthopaedicain.

DISCUSSION

The frequency of fetal injury at caesarian delivery varies with the indication for surgery as well as with the

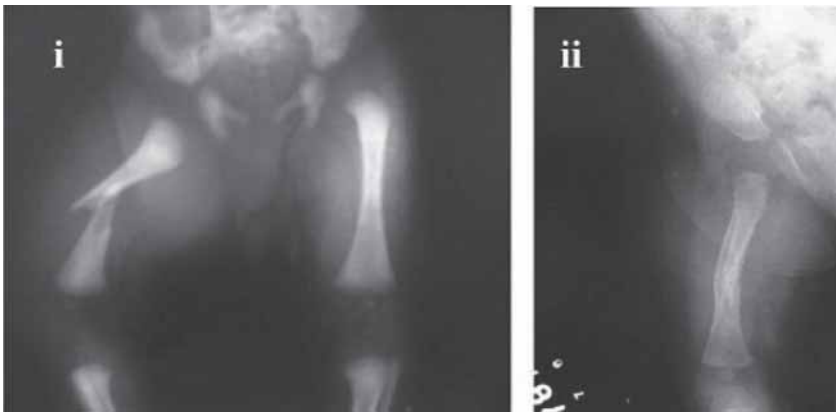

Fig. 1. i. Plain radiographs at presentation showing spiral fracture shaft of femur, ii. Plain radiographs at 3 weeks follow up revealing united fracture femur with abundant callus formation with no significant deformity.

Fig. 2. i. Plain radiographs at presentation showing oblique fracture shaft of humerus, ii. Photograph of a child after limb body strapping, iii. Check X-ray after strapping showing acceptable alignment.

duration of the skin incision-to-delivery interval and the type of uterine incision. The interest to reduce maternal morbidity may prompt physicians to perform a low segment vertical incision, especially if it is a preterm breech, thereby increasing the chances of trauma by providing less area for the required obstetric maneuvers.[2]

Although the clavicle has been reported as the commonest bone to fracture after birth trauma during caesarian delivery, other long bone fractures such as femur, humerus, and monteggia fracture dislocation have been described.[3-5]

Nearly one-half (48.0%) of the patients with birth fractures were diagnosed after a delay of 3 to 7 days in the series reported by Al – Habdan.[3]

Variety of treatment modalities are described for fracture femur including gallows traction, spica cast, and Pavlik harness. In our scenario, the treatment adopted was an innovative technique and was decided upon keeping in mind the attitude of the limb as adopted by the child. As the hip was in extreme flexion, it was decided to strap the thigh to the chest such that the child's body acts as a splint. Most fractures consolidate early and have no long term disability.[6]

Similarly, in our second case, we felt which needs to be mentioned was the modality of Treatment. These range from simple chest bandages and von Rosen splints to U slab.[7] It is important to remember that the fracture union may look quite unsatisfactory initially, but 40-50 degree moulding can occur in two years time and parents may be reassured of the same.[7]

Large population-based and case-control studies show significant reduction of perinatal and infant mortality with planned caesarian section in term breech pregnancy.[8] These reports resulted in the performance of cesarean breech deliveries more liberally. However, in breech presentation, abdominal and vaginal delivery maneuvers are similar. So caesarian section avoids the risk of head entrapment but long bone trauma can still occur.[9,10]

To conclude, we would like to highlight that fracture femur and humerus could result in normal infants born out of caesarian section. In order to prevent injury, adequate care should be taken during extraction of the child, and traction on the limbs calls for same care even in caesarian section. It is imperative on the part of operating surgeon and physician handling the neonate to bear this in mind and initiate appropriate investigations and management.

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