

# Bilateral Humerus and Right Femur Fracture in a Newborn after Cesarean Section for Breech Presentation in a Twin Pregnancy: A Very Rare Case Report

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## What to Learn from this Article?

Long bone fractures can happen with cesarean section which can be prevented by avoiding energetic traction and careful intraoperative management.

## Abstract

**Introduction:** The most common fractures during vaginal delivery occur in the clavicle, humerus, and femur. Cesarean section reduces the chances of a child having a birth injury. However, in some difficult extractions, long bone fractures may occur. Cesarean section further reduces the incidence of birth injuries, especially in a breech delivery. Maneuvers employed during cesarean section, energetic traction, improper uterine incisions, and contracted uterus may cause these injuries. In the medical literature, there are few articles highlighting the occurrence of long bone fractures during cesarean section. There has been no case reported with a combined bilateral humerus and femur fracture in the medical literature.

**Case Report:** A 2-day-old neonate born after cesarean section for breech presentation in a twin pregnancy presented with restricted movements of both his arms and right leg. Infantogram revealed bilateral humerus and right femur fracture. Biochemical tests were normal, and there were no other findings on clinical examination. There was no evidence of child abuse or any positive family history. Child was splinted for 3 weeks. X-rays suggested good callus at the fracture site of the right femur and bilateral humerus fracture were united.

**Conclusion:** To conclude, we would like to emphasize that long bone fractures can happen with cesarean section also. To prevent such untoward complications, during delivery of the baby the surgeon should be very careful, avoid energetic traction and should plan his incisions. Appropriate relaxation of the uterus must be achieved. Clavicles and other long bones should be palpated after a difficult delivery. However, it is important to note that long bone fractures in children heal rapidly without the need for any major intervention.

**Keywords:** Cesarean section, breech, long bone fracture.

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### Author's Photo Gallery



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## Introduction

Cesarean section is considered relatively safe with respect to fetal injuries and is definitely safer when compared to vaginal delivery in difficult situations. Although considered safe injuries have been reported in a few instances.

Fetal injuries complicated 1.1% [1]. Hannah *et al.* [2] in their multicenter randomized study showed that the incidence of fracture of long bones in cesarean section is 0.1% and 0.5% in vaginal delivery. Clavicle, humerus, and femur are the most commonly fractured bones during vaginal delivery [3]. Fracture of the femur is rare in vaginal breech delivery [4]. For cesarean section with breech presentation, such cases hardly seen [5, 6, 7, 8, 9, 10]. Although cesarean section reduces the chances of such injuries, it still can occur [11, 12].

Cases have rarely been reported of femur fractures and humerus fractures separately, however, we have not found any case with a combined bilateral humerus and femur fracture in literature.

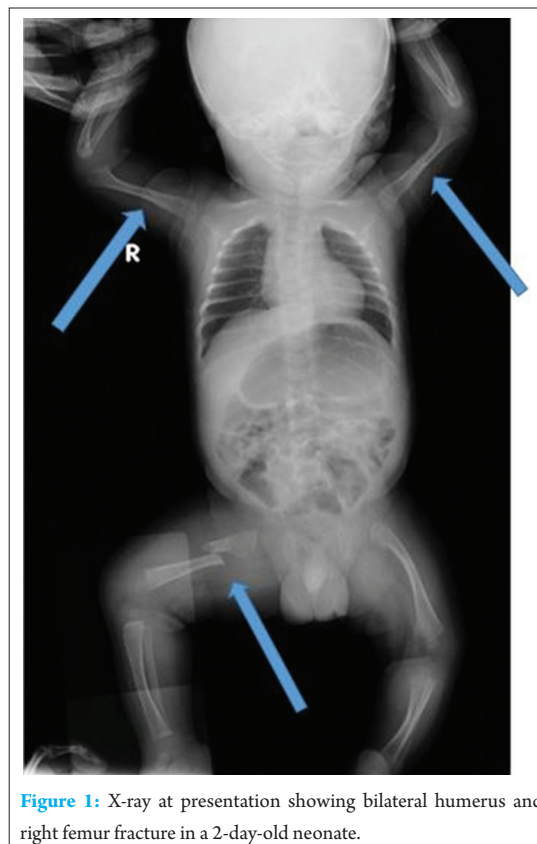
We report a case of the bilateral humerus and right femur fracture in a newborn that occurred in a course of cesarean section performed because of breech presentation in a 2<sup>nd</sup> baby of a twin pregnancy.

## Case Report

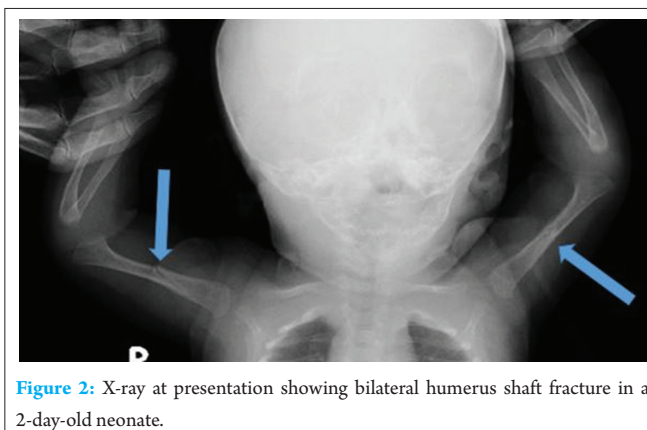
A 2-day-old male child was referred to orthopedic department with decreased movements of his right lower limb and both arms and being irritable. A 20-year-old primigravida with twin pregnancy had delivered the baby by cesarean section at 37 weeks of gestation. The first of the twin was a female cephalic presentation and was delivered by normal vaginal delivery who did not have any complications. Non progress of labor and fetal distress with breech presentation compelled the surgeons to perform a cesarean section for the 2<sup>nd</sup> baby. A history of energetic traction and rotation was elicited from the operating surgeon since it was a difficult delivery as liquor had drained out in the 30 mins after delivery of 1<sup>st</sup> twin with the 2<sup>nd</sup> twin in distress. The operating surgeon applied a groin traction with a pull on the right leg and both arms to deliver the baby quickly no obvious sounds were heard during the extraction. A 2490 g female neonate was delivered who cried immediately after birth with Apgar scores of 7 and 9 at 1 and 5 min, respectively.

On examination, the baby started crying on moving the right limb and the arms. Radiographs (infantogram) were obtained of both femur and humerus which revealed bilateral undisplaced humerus shaft fracture and a right femur fracture with displacement (Fig. 1 and 2). The bone structure and mineralization was visibly normal and there were no other findings like blue sclera or other deformities, hypotonia on physical examination. Ophthalmic consultation was taken who performed an eye funduscopy and reported as normal. Biochemical analysis such as serum calcium, phosphorus, and alkaline phosphatase was normal. There was no positive family history or similar complaint in the other infant. We considered a working diagnosis of fracture of both humerus and right femur secondary to a birth injury.

Child was treated by splinting the hip in flexion for the right femur and simple chest strapping for the humerus fracture for 3 weeks. The immobilization was removed, and the child was able to move both his arms and right lower limb actively. Follow-up radiograph showed both the



**Figure 1:** X-ray at presentation showing bilateral humerus and right femur fracture in a 2-day-old neonate.



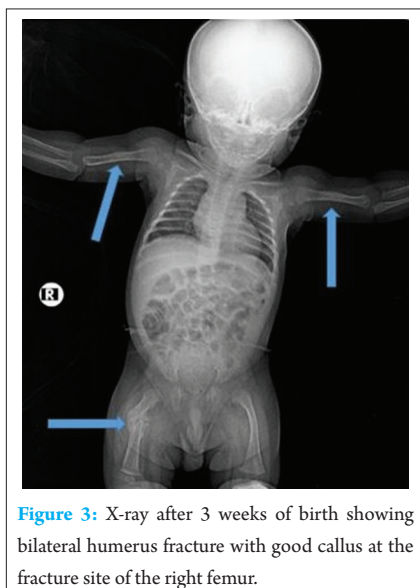
**Figure 2:** X-ray at presentation showing bilateral humerus shaft fracture in a 2-day-old neonate.

humerus fracture had united and the right femur fracture showed good callus formation with no significant deformity (Fig. 3). Follow-up after 2 months showed complete union of the femur fracture both clinically and radiologically.

## Discussion

Articles reporting hip fractures have been occasionally been found and is very rare [4, 5, 6, 7, 8, 10, 11, 12] humerus fracture in a baby born with cesarean section are much less common than femur fractures with the number of articles confined to a handful [5, 6, 7, 12, 13, 14, 15].

Conditions leading to fracture of long bones are twin pregnancy, macrosomia, inadequate uterine relaxation, primigravida, myomas, and inadequate incision in the lower uterine segment, and also the presentation



**Figure 3:** X-ray after 3 weeks of birth showing bilateral humerus fracture with good callus at the fracture site of the right femur.

of breech well engaged in the pelvis. Due to a lack of literature, there are no established maneuvers to avoid such injuries. If adequate care and procedures are followed by the doctor such injuries can be avoided. Proper analgesia, avoidance of overzealous traction, using wide incisions for easy extraction can prevent its occurrence. It is always better to extend

the uterine incision rather than exerting too much traction. Delivering the baby with extended arm also increases the risk of humerus fracture [10].

Clavicle is the most common injured bone during cesarean delivery with femur, humerus being rare [10].

Maneuvers and overzealous tractions, poor delivery techniques, improper uterine incision, and inadequate relaxation of the uterus can lead to these accidental complications.

### Conclusion

To conclude, we would like to emphasize that long bone fractures can complicate a birth by cesarean section also. To prevent such untoward complications, during delivery of the baby the surgeon should be very careful, avoid energetic traction and should plan his incisions. It is imperative for obstetrician and neonatologists to keep in mind about such accidental complications in difficult deliveries and if suspected then an orthopedic opinion should be sought.

### Clinical Message

Birth injuries can occur with cesarean section also therefore proper care, and attention should be given to avoid such complications.

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