



## Case Report

# A case of fracture humerus in a preterm neonate delivered by cesarean section

Taksande Amar M, Vilhekar KY, Khandale Mamta

*Department of Pediatrics, Mahatma Gandhi Institute of Medical Sciences, Sevagram, Wardha, Maharashtra 442102.*

---

*Key words: preterm, fracture humerus*

---

### Introduction

Humeral fractures typically occur during a difficult delivery of the arms in the breech presentation or of the shoulder in vertex<sup>1</sup>. It is considered by many that cesarean section is a safe mode of delivery. However in certain cases, injury may be sustained by the newborn as a result of the mechanics of delivery. We report one such case sustaining fracture of the humerus in preterm neonate during cesarean section delivery.

### Case report

A booked 22 year old G<sub>2</sub>A<sub>1</sub> was admitted with labor pain at 32 weeks of gestation on 11<sup>th</sup> August 2005. She had a missed abortion of 3 months before this pregnancy. The first of the twins delivered normally vaginally. The uterus contracted before the expulsion of the placenta of the first twin. Spontaneous rupture of membranes took place and the mother was shifted for emergency cesarean section. Spinal anesthesia was given. The second baby was born with difficult

extraction at emergency cesarean delivery after one hour of delivery of the first twin with indication of the retained second twin. First the placenta of the first twin was taken out. The twin II was in transverse lie and in doubled up position (contracted) and extracted in the same position. However during the process of delivery a snap was heard by the gynecologist. The newborn though depressed at birth responded well to 30 seconds of bag and mask ventilation with 100% oxygen. The birth weight of twin II was 1170 g with apgar 2, 6 and 8 at 1 minute, 5 minutes and 10 minutes. The twins were binovular.

The twin I expired on 27<sup>th</sup> August 2005, due to prematurity and moderate birth asphyxia and sepsis. On examination at birth, twin II was found to be active with no neurological deficit. Left arm of the neonate was rotated, with bluish discoloration and swelling on the forearm. Left radial artery pulsation was present and finger movements were normal. An x-ray of the left upper arm was taken which showed displaced fracture of the proximal 1/3<sup>rd</sup> of the shaft of the humerus (Figure 1). Splint was applied to the arm and the neonate managed in the nursery for very low birth weight preterm. After five weeks, there was clinical as well as radiological evidence of exuberant callus formation. The baby was discharged after six weeks, had equal movement of both upper limbs with slight angulation of the left arm and weighed 1504g. At follow up after three months the baby showed

---

*Paper received on 05/01/2006; accepted on 15/05/2007*

Correspondence :

Dr. Taksande Amar M

Department of Pediatrics

Mahatma Gandhi Institute of Medical Sciences

Sevagram, Wardha, Maharashtra - 442 102.

Email : amar\_bharti2000@yahoo.co.uk



**Figure 1.** Photograph showing fracture shaft of left humerus in preterm neonate.

normal weight gain and milestones. The movement of the fractured arm was normal and radiologically revealed the healed fracture.

### **Discussion**

Fractures at birth are seen mostly with macrosomic babies and breech presentation<sup>1</sup>. The forcible manipulations and pulling of baby's arm during delivery may result in fracture of the humerus which is the commonest at the junction between the upper

one-third and lower two-thirds of the humerus<sup>2</sup>. There are very few reports on bone trauma during cesarean delivery. A case of fracture femur was noted as far back as 1922 in cesarean section for breech presentation. Through the 60s, 70s and 80s, there has been occasional reports of fracture femur, depressed fracture skull, fracture tibia, radius and rarely humerus and they were mostly due to difficult extraction<sup>3</sup>. The diagnosis is suspected by pain and limitation of movement of the affected limb, asymmetric moro response and crepitus at the site of fracture<sup>4</sup>. A green stick fracture may not be noted until the callus forms<sup>2</sup>. The strapping of the arm by the side of chest for two weeks is recommended for immobilization<sup>4</sup>. Displaced fractures require close reduction and casting. Radial nerve injury may be seen<sup>2</sup>. It is important to remember that the fracture union may look quite unsatisfactory initially, but 40-50 degree moulding can occur in two year time and parents may be reassured of the same<sup>5</sup>. The prognosis is excellent with complete healing expected<sup>2</sup>.

### **References**

1. Caviglia H, Garrido CP, Palazzi FF et al. Pediatric fractures of the humerus. *Clin Orthop Relat Res* 2005;432:49-56.
2. Abdulhayoglu E. Birth trauma. In: Cloherty JP, Eichenwald EC, Stark AR (Eds). *Manual of neonatal care*, 5<sup>th</sup> edn. Philadelphia, Lippincott Williams and Wilkins, 2004;237-44.
3. John BM, Roy S, Gupta G et al. A case of the fracture in a newborn delivered by cesarean section. *MJAFI* 2004;60:194-5.
4. Miscellaneous conditions. In: Meharban Singh (ed). *Care of the newborn*, 6<sup>th</sup> edn. New Delhi, Sagar Publication, 2001;401.
5. Cambell RH. Problem injuries in unique condition of the musculoskeletal system. In: Rockwood CA, Wilkins KE, Beaty JH (Eds). *Fracture in children*, 4<sup>th</sup> edn. Philadelphia, Lippincott-Raven, 1996;274-5.