

# Transphyseal Fracture of the Distal Humerus in a Neonate

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An 18-hour-old neonate was found to have absent movement of the left arm and a mildly edematous elbow following precipitous delivery with observed traction applied to the left arm. Radiographs (Figure 1) showed abnormal elbow alignment without osseous fracture and a moderate joint effusion. Magnetic resonance imaging (MRI) [Figure 2] revealed a transverse fracture through the distal left humeral physis with posterior displacement of the distal cartilaginous epiphysis. An orthopedic surgeon placed the patient in a long arm splint with the arm at 90° of flexion and pronation to align the transphyseal fracture. One week later the splint was removed. The fingers and hand appeared to move normally, but left shoulder movement was persistently decreased, thought secondary to a brachial plexus stretch injury.

Traumatic separation of the neonatal distal humeral epiphysis is a rare injury, usually due to birth trauma or occasionally child abuse.<sup>1</sup> Clinical findings include elbow swelling, muffled crepitus and pseudo paralysis of the extremity.<sup>1</sup> Evaluation with plain radiography may be challenging and give the spurious appearance of dislocation until the capitellar ossification center had developed, usually around three to nine months of age.<sup>2</sup> MRI may be achieved without sedation in neonates. It is accurate and will provide

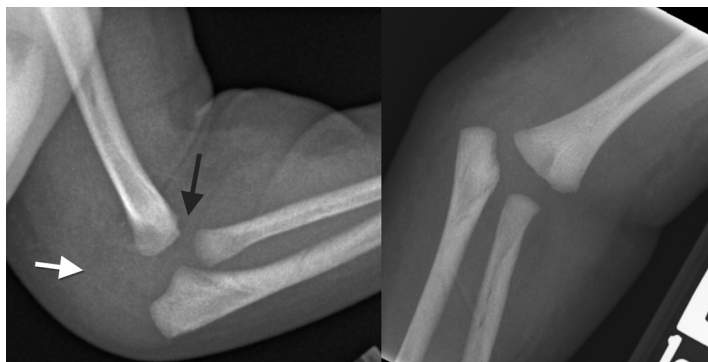
definitive diagnosis with good visualization of the cartilage, bone and soft tissue in multiple planes.<sup>2</sup> Treatment involves casting, usually with closed reduction if the injury is detected early.<sup>1</sup>

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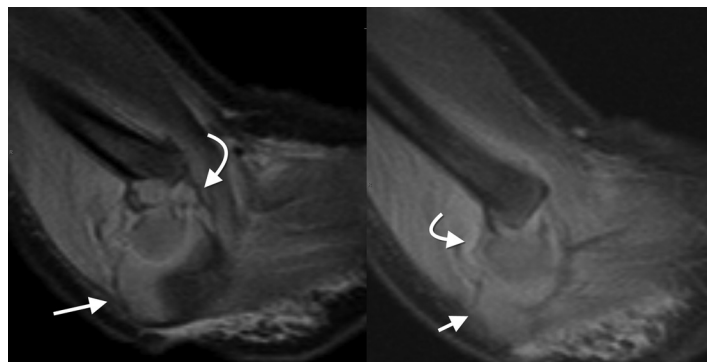
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## REFERENCES

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**Figure 1.** Anterior/posterior and lateral images of elbow demonstrate abnormal alignment with the black arrow pointing out the site of distal humeral physis and the white arrow pointing out the location of the posteriorly displaced cartilaginous humeral epiphysis.



**Figure 2.** Magnetic resonance imaging demonstrates fracture through the humeral physis with posterior displacement of the cartilaginous epiphysis (curved arrow) but intact articulation with radius and ulna (arrow).