



POSNA

The Core Curriculum

Fractures of distal radius and Galeazzi fracture

Objectives

1. Discuss the frequency of fractures of the distal radial physis
2. Describe indications for reduction, method of reduction, and limits of acceptable reduction for distal radial physal fractures
3. Define Galeazzi fracture and Galeazzi equivalent fracture
4. Discuss management of Galeazzi and Galeazzi equivalent fractures in children
5. Discuss incidence of growth arrest following distal radial and ulnar physal injuries

Discussion points

1. How many radiographs are indicated for management of a torus fracture? For a displaced fracture?
2. When can a patient with a displaced distal radius fracture be discharged from follow-up?

Discussion

The distal forearm is the most frequent site of fracture in children; the distal radius is the most frequently injured physis. Falls are the usual mechanism of injury. Most distal radial physal fractures are dorsally displaced. Reduction is usually not difficult, but some residual displacement is common. In general, the best judgment is to accept the reduction achieved, as repeated attempts at reduction have been linked to subsequent physal arrest of the distal radius. Even in adolescence, the distal radius maintains a remarkable ability to remodel, Wilkins notes that if even 1 year of growth remains and there is 50% apposition of the fracture fragments, one can expect an acceptable result. Pinning of distal radial physal fractures should be considered only in extreme situations, as there is some thought that pinning may contribute to premature growth arrest. Well-molded shortarm casts suffice for immobilization for distal radial fractures.

Fractures of the distal shaft can be more problematic. If one desires, many greenstick fractures of the distal radius could be classified as Galeazzi fractures, since the definition of a Galeazzi fracture is a fracture of the associated with disruption of the distal-radioulnar joint (DRUJ). Greenstick fractures of the distal radius can easily be managed by reversal of the deforming force (see Fractures of the shaft of the radius and ulna). More problematic are the fractures of the distal radius with an intact ulna, which can be very difficult to reduce. Unreduced bayonet apposition with up to 1cm of overriding will remodel nicely up to about age 12. Some loss of the initial position attained is often noted in the first couple of weeks after fracture. In general, up to 30 degrees of sagittal plane angulation and 20 degrees of coronal plane angulation can be accepted if there is 5 years of growth remaining. The radial length is restored in the remodeling process. Children nearing skeletal maturity need more precise reduction. Disruption of the DRUJ can

accompany distal radial fracture; it is unusual but still common enough to require vigilance on the part of the surgeon. Fracture through the distal ulnar physis can either supplement the DRUJ injury or absorb the force which would otherwise disrupt the DRUJ, and these injuries have been termed Galeazzi equivalent. Most can be managed conservatively; supination is generally preferable, although Letts and Vesely used the displacement of the distal fragment to guide them in positioning the arm.

Distal ulnar physal arrest is surprisingly common, with much more emphasis in the past decade on this problem, estimates up to 60% have been recorded. Distal radial arrest is much less common (although the injury is much more frequent), estimated at about 5%. Growth arrest of the distal radius has been reported following distal metaphyseal fractures not involving the physis.

Finally, torus fractures require only one radiograph for the entire course of treatment.

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