



Letter to Editor

## Pediatric elbow diagonal (MELAINE) injury: A rare variant

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**Quick Response Code:**



Dear Editor,

The elbow is a common site of pediatric fractures, and mostly supracondylar or unicondylar fractures are commonly diagnosed and treated.<sup>[1]</sup> Careful identification and appropriate management are important, not only for a good outcome but also to avoid complications. Various other injuries may or may not be radiologically evident and may require additional investigations for the diagnosis. The Radiographic Appearance Seemed Harmless (TRASH) lesions are described and comprise various injuries that warrant careful suspicion and diagnosis before their final management.<sup>[2]</sup> Judicious use of imaging methods such as ultrasonography can also be used to diagnose occult elbow injuries or TRASH lesions.<sup>[3]</sup> Occasionally, rare fracture patterns are also noted and may require widespread acknowledgment among young practitioners.

A 13-year-old child presented with an isolated right elbow injury after a fall from a moving vehicle, following which he could not use it properly due to pain and swelling. Clinically, there was swelling and tenderness over the medial aspect of the elbow and radial head region. There was an active and passive restriction of elbow movement but without distal neurovascular deficit. The elbow radiograph revealed a fracture of the medial condyle along with an undisplaced radial neck fracture [Figure 1a]. The medial condyle fracture was displaced, and operative fixation was indicated. As the fractures were clearly evident, no other investigation, such as a computerized tomography scan, was done. The fracture was fixed with one cannulated screw and a Kirschner wire (K-wire), while the radial neck fracture was managed conservatively [Figure 1b]. A post-operative elbow plaster slab for 3 weeks was given, following which active range of motion elbow exercises was initiated. The good union of both fractures and good functional outcome was noted in the follow-up of 8 months [Figure 1c]. Full regain of flexor-extension and pronation-supination movement was noted with no clinical feature of elbow deformity or instability. The K-wire was removed after 4 weeks, and screw removal has been planned to remove in the coming winter vacation of the child in December.

Concomitant fractures of the medial epicondyle and radial neck are considered diagonal injuries. They are also referred to as medial to lateral diagonal injuries of the elbow (MELAINE) in the literature.<sup>[4]</sup> Many of these cases require surgery for fracture stabilization and to avoid subsequent valgus deformity. A valgus force in a hyperextended elbow is a probable mechanism of this injury. It parallels a similar injury mechanism in the knee, which is termed a “diagonal

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**Figure 1:** (a) The radiograph shows a displaced medial condyle fracture with concomitant radial neck fracture. (b) The medial condyle fracture was fixed with one screw and a Kirschner wire, while the radial neck fracture was managed conservatively. (c) Gradual healing of both fractures was noted in the follow-up.

lesion” of the knee.<sup>[5]</sup> A series by Lu *et al.* of six male and six female children described this new injury pattern and advocated proper identification and treatment.<sup>[4]</sup>

Classically, the medial epicondyle fracture is described as one component of diagonal fractures at the elbow. Our case, however, had a medial condyle fracture along with the ipsilateral proximal radial fracture. This short case snippet, thus, highlights a rare variant of the diagonal fracture. At present, the literature is sparse on this injury pattern. Global acknowledgment and frequent reporting of large case series or studies shall improve our knowledge in the future.

#### Ethical approval

The Institutional Review Board approval is not required.

#### DECLARATION OF THE PATIENT’S CONSENT

The author certifies that he has obtained all appropriate patient consent forms. In the form, the patient’s parent has given his consent for the patient’s images and other clinical information to be reported in the journal. The parent understands that the patient’s name and initials will not be published, and due efforts will be made to conceal her identity, but anonymity cannot be guaranteed.

#### USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY FOR MANUSCRIPT PREPARATION

The author confirms that there was no use of artificial intelligence (AI)-assisted technology for assisting in the

writing or editing of the manuscript and no images were manipulated using AI.

#### CONFLICTS OF INTEREST

There are no conflicting relationships or activities.

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