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Congenital Elbow Dislocation: A Non-Entity

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To the editor:

We read with great interest the recent publication by Agrawal and colleagues reporting the case of a 12-day-old patient who underwent surgical treatment for what the authors describe as a 'congenital elbow dislocation' (1). We have serious concerns regarding this paper, including the case presentation and conclusion, which may have gone unnoticed during the peer-review process.

Distal humerus physeal separation is a well-known, albeit rare, variant of the supracondylar fracture seen after traumatic births or in the setting of non-accidental trauma. Physeal separation was not acknowledged as a separate entity until 1980s, when several series were published on the topic. The seminal paper published by Dr. Staheli and his colleagues in 1984 elegantly describes the pathomechanism and diagnostic challenges, adding that '...These symptoms can mimic elbow dislocation to the unwary' (2). Mercer Rang also warns the clinician from misdiagnosing this injury as an elbow dislocation (3). We believe the authors of this paper may have done so.

Patients with neonatal physeal separation typically present in the first weeks of life with a swollen elbow and

pseudoparalysis. Crepitus may be present if seen early, but the superb healing potential of the infant skeleton will soon stabilize the fracture. Radiographically, the relationship between the ulna and radius is maintained, since the elbow joint is not affected. The typical displacement is posteromedial. The elbow radiograph presented in this paper is identical to the cases in the literature.

Using a CT scan of the elbow, the authors claim that physeal separation was ruled out in this patient. Given that the distal humerus is fully cartilaginous at birth, a CT scan will not confirm or rule out the diagnosis. Conversely, ultrasound, arthrogram, or an MRI are diagnostic and will also quantify the displacement (4). Figure 1 represents a similar case with an anteroposterior radiograph ‘suggestive’ of an elbow dislocation. However, the MRI clearly shows the fracture through the physis, with posterior displacement of the distal humeral epiphyses-radius-ulna complex. Treatment of neonatal distal humeral physeal separation is not standardized. What is almost certain, however, is that patients do well without intervention or with minimally-invasive procedures (5). The authors have opted to treat this patient with an open reduction through a posterior approach, which is controversial, to say the least. The presented case has had a good outcome, as is expected from such an injury. A similar outcome was achieved in our case, with sling immobilization alone (Figure 1D).

The purpose of this letter is to warn the readers from misdiagnosing a physeal separation in a newborn as a ‘congenital elbow dislocation’. More importantly, however, we would like to emphasize to the residents, trainees, and general audience of this paper that congenital elbow dislocation is not a condition, just as congenital ankle or wrist dislocations are not. Congenital radial head dislocation, which is the only congenital ‘dislocation’ around the elbow, often associated with Larson syndrome, nail-patella syndrome, and other syndromic conditions. These patients are asymptomatic until later in childhood or adolescence. Physeal separation and infections are the main diagnoses to be suspected in an infant with a swollen elbow. When in doubt, confirm the diagnosis with an ultrasound, arthrogram, or MRI. Immobilize if displacement is mild to moderate, and close reduce if severe 6. And never forget: *Primum non nocere!*

Figure 1 (<https://tinyurl.com/yc8hbcn9>, uploaded here since figures are not supported). Anteroposterior elbow radiograph of a 3-day-old newborn with difficult birth and elbow swelling (A), showing congruent proximal radioulnar relationship and posteromedial displacement. Sagittal T2-weighted fat-saturated images show a located elbow, displaced through the distal humeral physis (Arrow in B, C). Following 3 weeks in a sling, remodeling of the fracture is seen (D). Patient was non-symptomatic at 6-months follow-up.

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Conflict of Interest: None Declared