

ANTERIOR DISLOCATION OF THE ELBOW IN A CHILD WITH CONGENITAL POSTERIOR DISLOCATION OF THE RADIAL HEAD A CASE REPORT

N. K. SFEROPOULOS, D. ANAGNOSTOPOULOS

A 9-year-old boy presented with anterior dislocation of the left elbow associated with a long-standing posterior dislocation of the radial head. Lack of full extension of the elbow joint was reported since birth. The dislocated elbow was reduced. No treatment was undertaken for the dislocated radial head. Radiographic evidence of dysplasia of the contralateral radial head provided a significant diagnostic criterion of a congenital malformation.

Keywords : radial head ; elbow ; dislocation.

Mots-clés : tête radiale ; coude ; luxation.

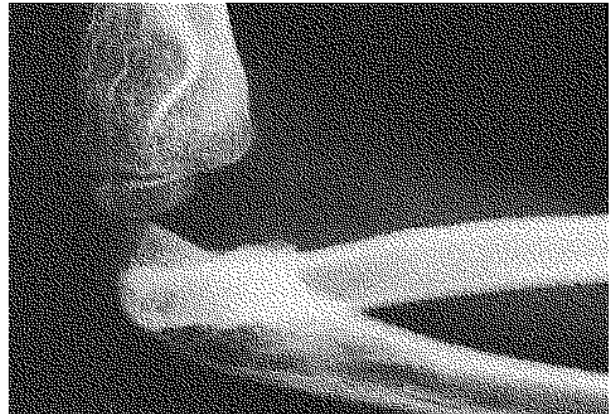


Fig. 1. — Anterior dislocation of the left elbow associated with posterior dislocation of the radial head.

INTRODUCTION

Unilateral long-standing dislocations of the radial head are posttraumatic or developmental lesions in most cases. Bilaterality, the existence of generalized syndromes or other anomalies of the same elbow-forearm unit, as well as the gross underdevelopment of the humeral capitulum and the ovoid shape of the radial head are indicative of a congenital malformation (4, 5, 6). In addition, anterior dislocation of the elbow without fracture of the olecranon is a very rare injury (15).

The authors report on a child with unilateral congenital posterior dislocation of the radial head who developed an ipsilateral anterior dislocation of the elbow.

CASE REPORT

A 9-year-old boy was seen for evaluation of a painful left elbow after a traffic accident. Radiograms showed anterior dislocation of the left elbow associated with a long-standing posterior dislocation of the radial head (fig. 1). The dislocated elbow was reduced under general anesthesia ; no treatment was undertaken for the dislocated

Department of Pediatric Surgery, Aristotle University of Thessaloniki, Greece.

Correspondence and reprints : N. K. Sferopoulos, P. Papageorgiou 3, 546 35, Thessaloniki, Greece.

radial head. The left elbow was immobilized in an above-elbow cast and x-rayed (fig. 2). His parents reported lack of full extension of the left elbow since birth and no history of any previous trauma to the region. The patient had no functional impairment of the right elbow. The parents refused admission, and the patient was also lost to follow-up. He was seen incidentally six years later. No axial deformity of the left elbow was noted. There was a fixed flexion deformity of 30°,

full flexion, but no pronation or supination. Plain radiograms and a CT-scan of the elbow revealed posterior dislocation of the radial head, but no evidence of a proximal radioulnar synostosis. A thorough examination for other extrasosseous disorders was not carried out owing to his parents' refusal of admission. However, a radiographic skeletal survey was performed. It revealed no bony anomalies with the exception of a dysplastic contralateral radial head (fig. 3).

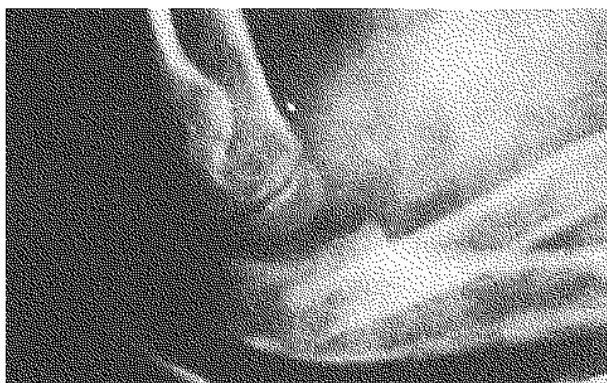


Fig. 2. — X rays showing reduction of the dislocated elbow.

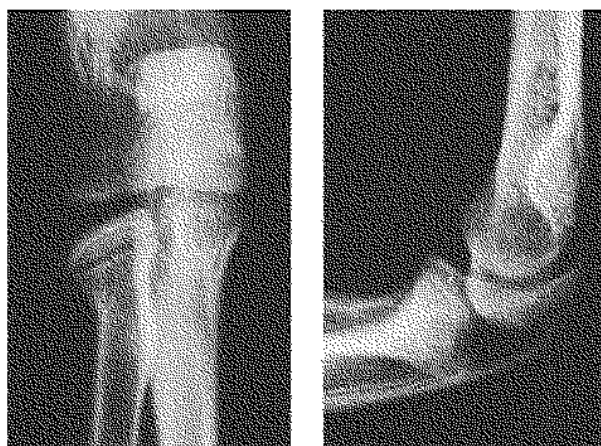


Fig. 3. — Dysplasia of the right radial head.

DISCUSSION

Dislocation of the radial head in the infant may be congenital, traumatic or developmental in origin (13). The diagnosis of a congenital dislocation is difficult, since none of a wide variety of clinical and radiologic criteria is pathognomonic (4). The existence of isolated congenital lesions, although questionable, has been supported by case reports and embryologic studies (1). Bilateral involvement as well as the existence of congenital abnormalities of the same elbow or forearm, such as radioulnar synostosis, are the most reliable signs of a congenital malformation. The latter may also appear in association with a wide variety of syndromes and diseases. Familial occurrence, dislocation noted at birth and the absence of a history of trauma are also indicative of a congenital dislocation (4, 5, 7, 10). The most

reliable radiologic criteria include a hypoplastic or flattened capitulum, an ovoid-shaped radial head and increased radial length in relation to the ulna. However, most of these findings will occur with any long-standing radial head dislocation from any cause (11, 12).

On the other hand traumatic and developmental dislocations are more easily diagnosed. Traumatic dislocation is anterior in most cases (2, 9). It is likely whenever there is a history of trauma, a normally developed capitulum and radial head, ossification of soft tissues, or evidence of an ulnar fracture. Traumatic dislocation has also been reported at or soon after birth (14). In the newborn and infant, arthrography is a very useful diagnostic investigation of the elbow (15). In addition, a progressive developmental dislocation of the proximal radius appears to be secondary to insufficient growth of the ulna in multiple exostosis, continued excessive pull of the biceps in spastic palsies, or following abnormal growth of the proximal epiphyseal plate of the radius (4, 5, 8).

In the reported child the diagnosis of a congenital radial head dislocation was supported by clinical and radiographic clues. The former included lack of full extension since birth and no history of trauma; the latter included the direction of dislocation as well as the appearance of both radial head and capitulum. However, the dysplastic, although not dislocated, contralateral radial head was the most significant diagnostic sign of a congenital malformation.

Finally, confusion may arise when a child with a congenital dislocation falls on his elbow (3). Anterior dislocation of the elbow joint without fracture of the olecranon is a rare injury in childhood with very few reported cases (15). However, it appears to be more likely with a coexisting posterior radial head dislocation since lack of full elbow extension could make the patient more prone to a direct forward blow or fall on the olecranon process.

REFERENCES

1. Agnew D. K., Davis R. J. Congenital unilateral dislocation of the radial head. *J. Pediatr. Orthop.*, 1993, 13, 526-528.

2. Almquist E. E., Gordon L. H., Blue A. I. Congenital dislocation of the head of the radius. *J. Bone Joint Surg.*, 1969, 51-A, 1118-1127.
3. Danielisz L. Congenital dislocation of the head of the radius and elbow injury. *Arch. Chir. Neerl.*, 1971, 23, 163-171.
4. Dobyns J. H. Radial head dislocation. In: Green D. ed. *Operative Hand Surgery*, Churchill Livingstone, New York, 1993, Vol. 1, pp. 338-342.
5. Dubuc J. E., Rombouts J. J., Vincent A. Les luxations de l'extrémité proximale du radius chez l'enfant. *Acta Orthop. Belg.*, 1984, 50, 815-836.
6. Exarhou E. I., Antoniou N. K. Congenital dislocation of the head of the radius. *Acta Orthop. Scand.*, 1970, 41, 551-556.
7. Gattley P. H., Wedge J. H. Unilateral posterior dislocation of the radial head in identical twins. *J. Pediatr. Orthop.*, 1986, 6, 220-221.
8. Good C. J., Wicks M. H. Developmental posterior dislocation of the radial head. *J. Bone Joint Surg.*, 1983, 65-B, 64-65.
9. Lloyd-Roberts G. C., Bucknill T. M. Anterior dislocation of the radial head in children. *J. Bone Joint Surg.*, 1977, 59-B, 402-408.
10. Mardam-Bey T., Ger E. Congenital radial head dislocation. *J. Hand Surg.*, 1979, 4, 316-320.
11. Mital M. A. Congenital radioulnar synostosis and congenital dislocation of the radial head. *Orthop. Clin. North Am.*, 1976, 7, 375-383.
12. Miura T. Congenital dislocation of the radial head. *J. Hand Surg.*, 1990, 15-B, 477-481.
13. Rombouts J. J., Dubuc J. E. Les luxations de la cupule radiale chez l'enfant. *Louvain Méd.*, 1992, 111, 77-81.
14. Schubert M. J. J. Dislocation of the radial head in the newborn infant. *J. Bone Joint Surg.*, 1965, 47-A, 1019-1023.
15. Tachdjian M. O. *Pediatric Orthopedics*. W. B. Saunders, Philadelphia, 1990, pp. 3124-3125.

SAMENVATTING

N. K. SFEROPOULOS, D. ANAGNOSTOPOULOS.
Anterieure elleboogluxatie bij een kind met congenitale posterieure radiuskopluxatie.

Een 9-jarige jongen werd gezien met een anterieure elleboogluxatie geassocieerd aan een lang bestaande posterieure radiuskopluxatie, met een extensietekort sedert de geboorte. De elleboog werd gereduceerd. De radiografie van de dysplastische radiuskop contralateraal, pleit voor de congenitale oorsprong van de radiuskopluxatie.

RÉSUMÉ

*N. K. SFEROPOULOS, D. ANAGNOSTOPOULOS.
Luxation antérieure du coude chez un enfant présentant
une luxation postérieure de la tête radiale. Présentation
d'un cas.*

Les auteurs présentent le cas d'un garçon de 9 ans qui
a présenté une luxation antérieure du coude associée

à une luxation postérieure préexistante de la tête
radiale. L'extension du coude était incomplète depuis
la naissance. La luxation du coude a été réduite ; la
luxation de la tête radiale n'a pas été traitée. La radio-
graphie du coude opposé montrait une tête radiale
dysplasique, ce qui venait à l'appui du diagnostic
d'anomalie congénitale.