The authors report 2 cases of concomitant scaphoid and distal radial fractures, a rare combination of lesions in children. The first case was in a 13-year-old boy who presented a transverse midscaphoid fracture associated with a Salter type II distal radial fracture. The second concerned a 10-year-old boy who presented a bilateral wrist injury. On the left side, a distal forearm fracture with anterior displacement was associated with a transverse midscaphoid fracture. On the right side, there was only a distal forearm fracture. Scaphoid fracture associated with distal radial fracture seems to have been more frequently reported in the literature during the last decade, probably because it is more frequently recognised. In fact, children with distal forearm injury should be well examined both clinically and radiologically in order to search for an associated scaphoid fracture. Reduction of the radius fracture should be done carefully to avoid possible displacement of the scaphoid fracture.

INTRODUCTION

Scaphoid fractures are rare prior to the age of 15, with a peak incidence between the ages 15 and 30 years. Ossification of the scaphoid begins at 5 to 6 years of age and is not complete until 13 to 15 years of age. Because the scaphoid is largely cartilaginous in children, it is rarely injured (1).

The association of distal radial and scaphoid fractures has been well described in adults (6). In children however, only a few cases have been reported (1, 3, 4, 7, 8).
with an undisplaced midscaphoid transverse frac-
ture (fig 2). Both fractures were reduced under
general anaesthesia. The total period of immobili-
sation was 3 months, using a large arm thumb cast
on the left side and a long arm cast on the right side
for 45 days. At 6-month follow-up, the result was
good with full function of both wrists (fig 3).

**DISCUSSION**

Children have a relatively resistant ligamentous
and cartilaginous carpus with an area of weakness
at the distal radial physis, which is more prone to
injury. Therefore, scaphoid fractures in children
require a greater causal force.

Until 10 to 15 years ago, few cases of ipsilateral
distal radial fracture and scaphoid fracture in chil-
dren were reported in the literature. In 1984, Green
*et al* reviewed 196 distal radial fractures in children
between the ages of 4 and 15 years and did not find
associated scaphoid fractures (5). In 1986,
Christodoulou and Cotton reviewed 77 children
below 15 years of age with scaphoid fractures and
found no case of associated ipsilateral distal radial
fracture (2). In a series of 108 carpal scaphoid frac-
tures in children published in 1980, Vahvanen and
Westerlund reported only 3 cases of associated dis-
tal radial fracture (8). In 1982, Gamble and
Simmons reported the case of an 8 year-old-boy
with a bilateral scaphoid fracture associated with a
radial epiphyseal fracture (4). In our department of
Pediatric Orthopaedics, we have only observed
these 2 reported cases during 10 years. This con-
irms the extreme rarity of these associated injuries
in children. This type of combined fracture seems
to have been more frequently reported in the last
decade, probably because it is more frequently recognised (1, 7).

Other carpal bone fractures may be associated. Compson reported 3 cases of transcarpal injuries associated with distal radial fractures in children: two cases involved simultaneous fractures of the scaphoid and capitatum, while the third one involved the scaphoid and triquetrum (3).

The occurrence of scaphoid fractures associated with distal radial fractures is possible because of a similar injury mechanism, which is often hyperextension of the wrist. Frequently, a fall on the palm of the outstretched hand causes a distal radial fracture with posterior displacement associated or not with a scaphoid fracture. However, in our second case, we observed an anteriorly displaced distal forearm fracture. This is probably due to a vertical axial compression mechanism with hyperextension of the wrist. To our knowledge, there are no reports in the literature of such associated fractures with anterior displacement of the distal radial extremity.

Associated scaphoid fractures should therefore be suspected with all types of distal forearm injuries in children. All authors stressed the fact that such association of fractures should be recognised, in order to be more careful during the initial management (1). Careless reduction techniques may indeed cause displacement of the scaphoid fracture (1, 7). Immobilisation in a long-arm thumb cast for 3 months is necessary for the treatment of such injuries, allowing uncomplicated healing of the fractures.

CONCLUSION

Combined fractures of the scaphoid and distal radius are rare in children, but are more and more frequently recognised nowadays.

Because the mechanism of injury is similar for both fractures, it is important to have a high index of suspicion for their association.

Reduction manoeuvres for distal radial fractures should be done carefully to avoid displacement of the scaphoid fracture.

REFERENCES