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Lunatomalacia in a child

A case of advanced lunatomalacia in an 8-year-old girl treated by immobilization is described. After 2 years of treatment, the girl had a normal wrist, and radiographically the condition had improved, albeit with some collapse of the radial part of the lunate. Our case suggests that the natural course of lunatomalacia is favorable in children as compared with adults.

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Lunatomalacia (Kienböck's disease) is rare in children (Ståhl 1947). In a series of 193 patients with lunatomalacia, only 3 were 10 to 14-years old. In a survey of the literature, Persson (1945) found only 5 children, all 15 years of age, among 530 patients with lunatomalacia; these 5 patients had been reported by Østergård-Christensen (1936). Through a 30-year period (1955–1984), 93 patients with lunatomalacia were seen at our hospital. The mean age was 39 years. We report the only patient under the age of 15 years.

Case history

An 8-year-old girl was admitted to our hospital after twisting her right wrist while playing. She had restricted wrist motion and had tenderness at the radial aspect of the radiocarpal joint. Radiographic examination showed advanced lunatomalacia (Figure 1). She had not had any prior complaints from the wrist.

The girl was treated with immobilization of the hand in 30° dorsiflexion. After 1 year of this treatment the lunatomalacia had improved radiographically. The wrist was not tender, but extension and flexion were still restricted. She received a splint and began active exercises. After another year the bony architecture of the lunate was significantly improved, but collapse of the bone was still seen, especially in the radial part (Figure 2). The ratio of the vertical height of the lunate to the greatest dorsovolar horizontal diameter perpendicular to the vertical height on the affected side was half of that on the normal side, indicating compression of the lunate. She had no complaints and participated in normal sports activities. The wrist had normal function when the girl was last seen.

Discussion

Lunatomalacia is usually classified as an osteochondrosis (Resnick 1981), i.e., among conditions characterized by predilection for growing bone, notably epiphyses or apophyses. The radiographic pattern is dominated by fragmentation, collapse, sclerosis, and often reossification and reconstitution of the osseous contours. In contrast to other osteochondroses, lunatomalacia is usually encountered in adults. Also, most of the osteochondroses have a pronounced tendency to spontaneous recovery, whereas lunatomalacia has a poor spontaneous course.

Conservative treatment of lunatomalacia in adults was advocated by Ståhl (1947), whereas radial osteotomy (Almquist & Burns 1982, Rajani et al. 1985), ulnar osteotomy (Armistead et al. 1982), and intercarpal arthrodesis (Naet et al. 1981) have been recommended by more recent authors. Benz & Blenche (1976) reported the case of a 7-year-old girl who obtained complete restitution of the lunate for 3 years after 9 weeks of immobilization. It is questionable whether 9 weeks of immobilization of the wrist joint could be the reason for the course that may well be natural for the condition in children.

In our case the condition was so advanced at the first examination that the lesion must have been present for quite some time without giving any symptoms. The immobilization relieved swelling and pain, but it is possible that the improvement of the lesion represents just the natural course of the condition rather than the effect of the immobilization. Among 93 pa-

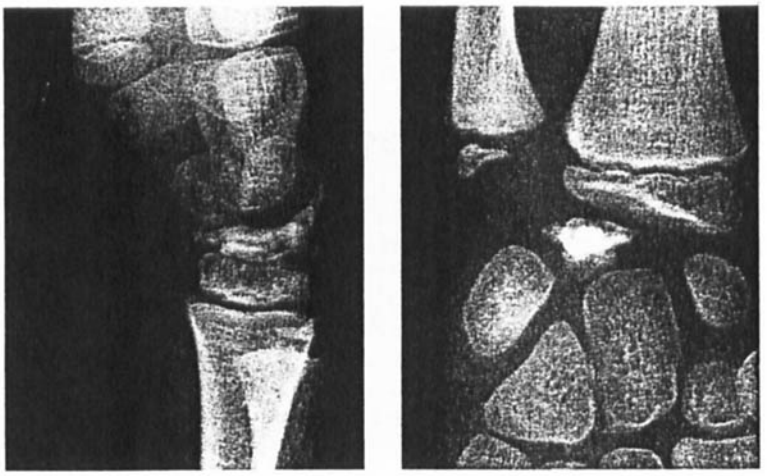
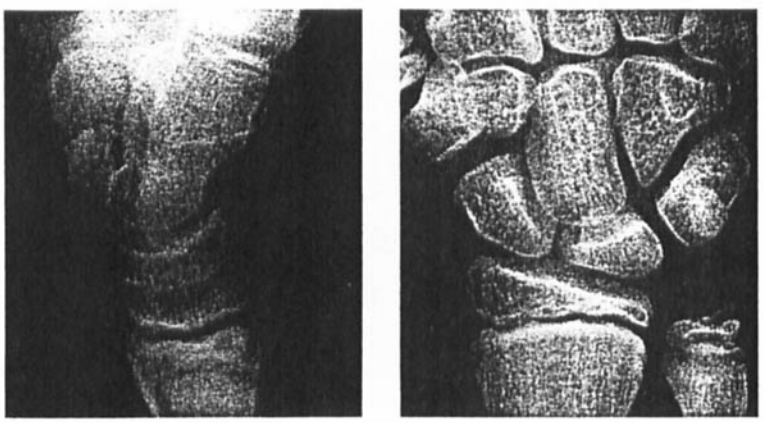


Figure 1. Advanced lunatomalacia in an 8-year-old girl at the first observation.



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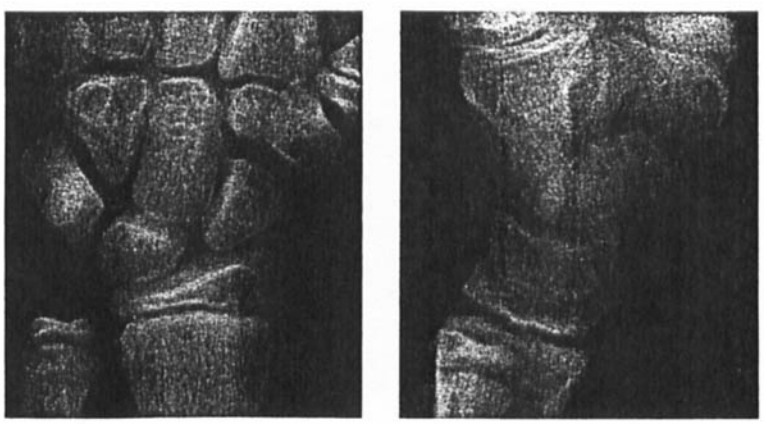

B

Figure 2. Improvement of the bone architecture of the flattened lunate after 2 years, A. The opposite wrist from the same examination, B.

tients with lunatomalacia seen at the Odense University Hospital, only the reported girl had a favorable clinical course and radiographic restitution among 74 patients treated closed.

The different course of the condition in children and adults may signify that the pathogenesis of lunatomalacia, which is unknown, may be different in the two groups.

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