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ASEPTIC NECROSIS OF THE HEAD OF THE FIFTH METACARPAL

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Aseptic necrosis of the head of the metacarpals is rare. The condition was first described in 1932 by Dieterich. Single cases have since been reported by *Friedl* (1934), *Grossektler* (1935), *Schinz et al.* (1952), *Seyss* (1961) and *Franke* (1962). *Dieterich* described the changes as solitary and localised to the third metacarpal. Similar changes have been demonstrated in the fourth (*Friedl*) and second metacarpal (*Grossektler*). Multiple affection was first reported by *Bopp* (1938). As far as we know, no cases of solitary necrosis of the first or fifth metacarpal are on record.

Aseptic necrosis of the metacarpal head occurs in both sexes. Judging from the literature, the age at diagnosis ranges from 15 to 51 years. In some cases the condition produces symptoms of pain, swelling and impaired range of mobility of the joint, while in others it is asymptomatic and is discovered incidentally at roentgen examination.

The aetiology of the condition is obscure, but trauma and infection have been suggested (*Dieterich*).

The roentgenogram shows deformation of the head with irregularities of the articular surface, structural and joint space changes. The roentgenological changes are partly reversible. The necrosis appears to favour the development of arthrosis. The microscopical appearance is the same as that of other aseptic bone necrosis (*Dieterich*).

Symptomatic treatment with prolonged immobilisation has been suggested but it is not known whether such treatment has any effect on the further course. The end result of the condition varies from complete freedom from symptoms to symptoms of the type occurring in arthrosis.



Figure 1. Four days after trauma. In the radio-volar surface of the head of the fifth metacarpal is a one mm step from which extends a thin, irregular, radiolucent line.

Figure 2. Six months after trauma. Extensive destruction of the bony substance of the fifth metacarpal head with loss of bony substance, structural changes throughout the head, deformation of the head and destruction of the joint cartilage (narrowed joint space).

Figure 3. Ten months after trauma. Bone structure and joint surface of the fifth metacarpal head are now more even. There is still a deformation of the head and the joint space is narrowed. Notice that the epiphyses of the little finger in contrast to the epiphyses of the other fingers are closed.

We have had the opportunity of seeing a case of bone necrosis of the head of the fifth metacarpal.

CASE HISTORY

The patient was a 14 year old boy who was first seen at the department of hand surgery after a fight. He complained of pain from the metacarpophalangeal joint of the little finger of the right hand. Examination revealed swelling, tenderness and decreased mobility and roentgenographically a fracture was suspected in the radio-volar part of the head of the fifth metacarpal (Figure 1). The little finger was immobilised in a splint for 2 weeks after which the patient was almost symptom-free, and the splint was removed.

Six months later the patient returned. In the meantime he had never been completely symptom-free, trivial blows against the finger as well as heavy work causing pain. Examination now revealed a slight swelling and tenderness over the metacarpo-phalangeal joint, slightly decreased mobility (180° - 105°) and crepitations on lateral movement of the joint. Roentgenography showed deformation of the metacarpal head, destruction of the articular surface, narrowed joint space and cystic rarefactions (Figure 2) E.S.R. 5 mm/1 hour. No special treatment was given.

At follow-up 4 months later considerable improvement was noted. Trivial blows against the little finger were sometimes painful, but otherwise the patient had no symptoms referable to the joint, not even after heavy work. The range of mobility was still somewhat decreased (180° - 105°) and lateral movement still caused crepitations. Radiography showed more even bone structure and joint surface, but there was still a deformation of the head and the joint space was narrowed (Figure 3). Roentgen examination of the hips, shoulders and of the left hand showed nothing remarkable.

As far as we know solitary aseptic necrosis of the head of the fifth metacarpal has not been described before. In this case the condition was probably caused by trauma.

SUMMARY

A case of solitary aseptic necrosis of the head of the fifth metacarpal, probably caused by trauma, is described.

RESUME

Il est décrit un cas de nécrose aseptique solitaire de la tête du 5ème métacarpien, probablement causée par un trauma.

ZUSAMMENFASSUNG

Ein Fall von vereinzelter, aseptischer Nekrose des capitulum metacarpali V, wahrscheinlich durch Trauma entstanden, wird beschrieben.

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