CHONDROMATOSIS OF THE FIFTH METACARPOPHALANGEAL JOINT CASE REPORT AND REVIEW OF THE LITERATURE

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Synovial chondromatosis is extremely rare in small joints. The authors present a case of involvement of the fifth metacarpophalangeal joint, treated by removal of loose bodies and synovectomy.

Keywords : synovial chondromatosis ; metacarpophalangeal joint.
Mots-clés : chondromatose synoviale ; articulation métacarpophalangienne.

CASE REPORT

A 36-year-old healthy man presented with a 3-year history of pain and swelling of the left fifth metacarpophalangeal (MCP) joint. The pain was related to activity (no pain at night), and had increased over recent months. No traumatic event was recalled.

Physical examination showed swelling of the dorsal aspect of the left fifth MCP joint with local tenderness. All movements were painful. The joint had a full range of motion, and there was no sensory loss.

Standard radiographs of the left hand revealed destructive lesions in the metacarpal head and in the base of the proximal phalanx. Multiple loose bodies were seen in the MCP joint. All other joints of both hands were normal (fig. 1). A slightly elevated uric acid (7.9 mg/100 ml) was the only abnormal laboratory finding.

In September 1990, arthrotomy was performed through a curved dorsal incision. Hypertrophied, brilliant, velvety synovium was found. Numerous white, oval, smooth loose bodies, measuring 0.3 to 0.8 cm, were removed (fig. 2). The articular cartilage was macroscopically normal. A subtotal synovectomy was performed.

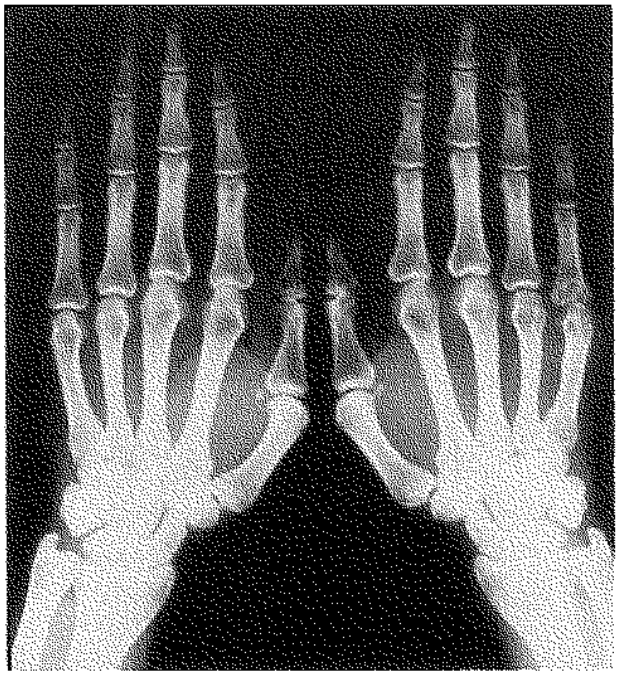

Fig. 1. — Radiograph showing lytic lesions in the base of the proximal phalanx and the metacarpal head of the fifth MCP-joint.

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After 10 days of immobilization in a volar wrist splint, rehabilitation was started. Three months postoperatively, the patient was pain-free, the swelling had disappeared, and there was a full range of motion of the operated joint.

Microscopically, the synovium was characterized by the presence of multiple nodular cartilaginous bodies. These foci of metaplasia were surrounded by cellular fibrous tissue. The cartilage cells were characteristically arranged in small clusters within the nodules (fig. 3).

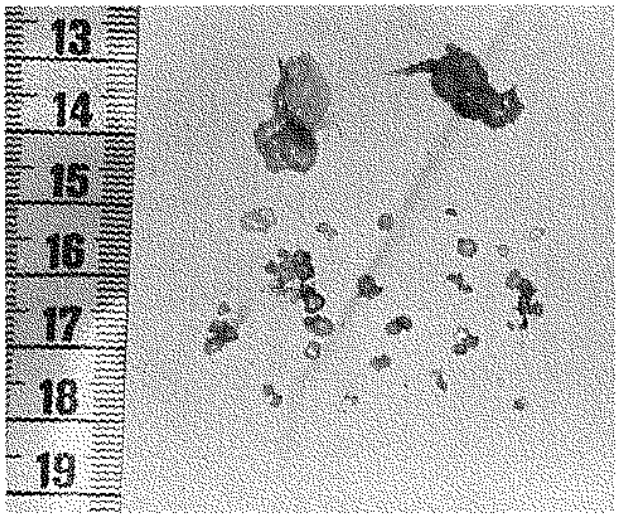

Fig. 2. — Loose bodies removed from the fifth MCP joint.

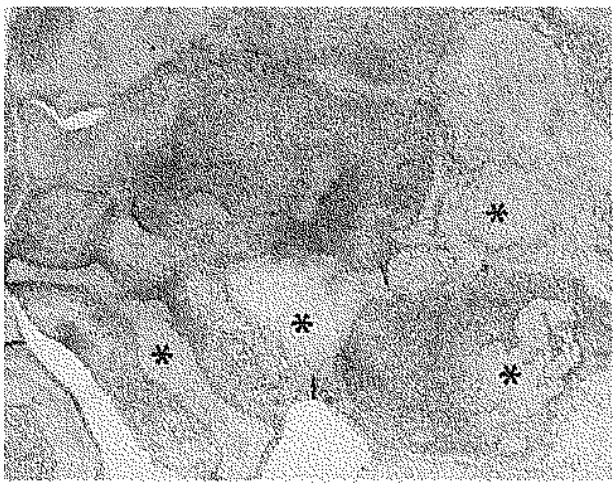

Fig. 3. — Histology : Metaplastic foci of cartilage (asterisks) in the synovial membrane, surrounded by cellular fibrous tissue (hematoxilin and eosin, × 60).

DISCUSSION

Primary synovial chondromatosis is a rare disorder in which cartilage is formed by metaplasia of the subintimal synovial tissue (10). It may arise from the synovia of joints, tendon sheaths or bursae. The knee, the hip and the elbow are the most commonly involved articulations (4, 6, 9, 11). In the hands and feet, chondromatosis is usually of extra-articular origin. To our knowledge, only 4 cases of involvement of a metacarpophalangeal joint have been published in the English literature (table I). The cause is unknown, although some authors state that trauma may initiate metaplasia (5, 6, 8, 9, 11). The disease is monoarticular, more common in men, and usually occurs in the third to fifth decades of life.

Table I. 4 cases of chondromatosis of MCP joint

Author	MCP	Sex	Age	Trauma	Treatment
Muller 1902	III	M	25	no	"En-bloc" resection
Linden 1934	III	M	25	yes	wash-out and synovectomy
Murphy 1962	II	?	?	?	?
Szepesi 1975	IV	F	48	no	wash-out and synovectomy

(MCP : metacarpophalangeal ; M : male ; F : female).

Primary synovial chondromatosis is one of the least common causes of intra-articular loose bodies (7, 11). Other conditions such as degenerative joint disease, osteochondritis dissecans, rheumatoid arthritis, neuropathic joints, tuberculous arthritis and osteochondral fractures should be excluded. According to Murphy *et al.* (11), experiments have shown that loose bodies from any cause can become implanted in the synovial membrane. Therefore, the diagnosis of primary synovial chondromatosis should be made only if the following conditions are met (7, 10) :

a) The more common causes of loose bodies are excluded.

b) The articular cartilage is completely normal.
c) Cartilaginous metaplasia within the synovial tissue is demonstrated histologically.

The case we present is unusual, not only because it involves the MCP joint (table I), but also because of its radiological appearance (fig. 1). A case showing erosion of the tibia (12), two cases of hip joint erosion (1) and one case of erosion of the distal part of the fourth metacarpal (14) have been described. Extensive bony destruction of the hand by chondromatosis has been described by Constant *et al.* (2). Although articular erosions can be suggestive of chondrosarcoma (3), no clinical or histological evidence for malignancy was present in our case.

The natural history of the disease is one of slow progression of mechanical pain, swelling and joint locking (4). One case of spontaneous regression involving the knee has been reported (13). Two cases of malignant transformation have been described (11).

Removal of loose bodies (wash-out) and (partial) synovectomy is the most effective treatment. Local recurrences are not uncommon. Metastases have never been described.

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SAMENVATTING

J. MYLLE, I. VAN DELM, R. SCIOT, B. VAN DAMME, L. DE SMET en G. FABRY. Chondromatose van het vijfde metacarpophalangeaal gewricht. Gevalsbespreking en literatuurstudie.

Synoviale chondromatose is erg zeldzaam in kleine gewrichten. De auteurs stellen een geval voor van aantasting van het vijfde metacarpophalangeaal gewricht, behandeld met synovectomie en verwijderen van de gewrichtsmuizen.

RÉSUMÉ

J. MYLLE, I. VAN DELM, R. SCIOT, B. VAN DAMME, L. DE SMET et G. FABRY. Chondromatose de la cinquième articulation métacarpo-phalangienne. Présentation d'un cas et revue de la littérature.

La chondromatose synoviale est très rare dans les petites articulations. Les auteurs présentent un cas avec atteinte de l'articulation métacarpophalangienne du cinquième doigt, traité par évacuation des souris articulaires et synovectomie articulaire.