Hepatic hypertrophic osteoarthropathy (HOA) is a rare and disabling condition. It tends to respond poorly to conservative management such as analgesia or intra-articular injection of steroids. A recent article highlighted the benefits of successful liver transplantation in producing remission of this painful arthritis. We report a case of HOA which developed nine years after orthotopic liver transplantation (OLT).

A 44 year old man presented in February 1993 with three week history of pain and swelling of his wrists, knees and ankles. He had no previous arthritic symptoms. In 1979, he had developed primary sclerosing cholangitis and had undergone liver transplantation in 1985. A Roux-en-Y procedure was performed in 1991 for biliary stasis. Contrast cholangiography later that year demonstrated good biliary drainage. No strictures were present, but abnormal tapering of the distal biliary tree was noted. Because of continuing cholestasis, a liver biopsy was performed in September 1992. This showed chronic active hepatitis but no evidence of rejection. There was no recurrence of his original disease.

Examination revealed toe but not finger clubbing and he was markedly icteric. There was synovitis affecting the wrists, knees, and ankles, with tenderness proximal to the joints. Synovial fluid was non-inflammatory. Radiographs of the relevant joints showed a marked periosteal reaction consistent with HOA (figure). Chest radiograph was normal.

The knee effusions responded to intra-articular steroid injection and the arthritis symptoms have resolved. However, his liver tests have continued to deteriorate slowly and repeat transplantation is being considered.

The pathogenesis of HOA is unknown. Hormonal, circulatory, and neurogenic factors have been implicated. It is thought that a growth factor mediated effect is probably involved leading to elevation of the periosteum, new bone deposition and oedema of the surrounding tissues. This factor may accumulate as a result of impaired hepatic clearance or may be produced in excess by the liver as part of its response to disease. Hepatic HOA is rare. It is usually associated with cholestasis and is most commonly seen with primary biliary cirrhosis, chronic active hepatitis, and post-hepatic cirrhosis.

Liver transplantation, besides resulting in improved hepatic function, has also been shown to cause resolution of the joint symptoms of hepatic HOA. This may be because the stimulus for HOA, presumably resulting from the abnormal liver, has been removed. The syndrome can, however, occur novo after liver transplantation, in those with chronic rejection, or with recurrence of the underlying disease.

This patient has had two separate liver diseases. It is interesting that HOA did not occur in association with sclerosing cholangitis, but developed later with active inflammation in the grafted liver. While a minority of patients respond poorly to conservative management, this man’s symptoms resolved with intra-articular steroid administration and NSAIDs. If he undergoes repeat liver transplantation, it is possible that complete resolution of his HOA will be obtained.

**Cytokine therapy in rheumatoid arthritis**

The leader by Giles Campion has given a sure foundation on which to base our thoughts about cytokines, but is sparse on practical proposals.

For example, a recent *Lancet* article from Birmingham emphasised the early onset of osteoporosis in patients with rheumatoid arthritis (RA). We know that interleukins (IL) 1 and 6 and tumour necrosis factor α (TNFα) all play their part in causing osteoporosis, and the indications are that IL-1 receptor antagonist production is relatively poor in RA.

Hence one application that will require trial in several different or combined centres will be the administration of IL-1 receptor antagonist, to see if osteoporosis is ameliorated.

**Radiograph of the knees, demonstrating marked periosteal reaction at the lower end of the femora.**
Hepatic hypertrophic osteoarthropathy and liver transplantation.

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