LETTER TO THE EDITOR

Sir,

Immunohistochemical identification of chondrocalcin in synovial chondromatosis

We previously reported a patient with synovial chondromatosis of the knee joint, in which elevated levels of chondrocalcin (carboxy-terminal type II procollagen peptide) in the synovial fluid was observed [1]. Because the articular surface was macroscopically normal, we assumed that excess chondrocalcin would have been due to increased production by metaplastic synovial cartilage and discussed the role of this excess for diagnosis of the disease.

In response to our letter, Dr. Shinmei kindly advised us to confirm the existence of chondrocalcin in the pathological synovium by immunohistochemical techniques. We, therefore, performed immunostaining of chondrocalcin using anti-chondrocalcin polyclonal antibody, kindly provided by Dr. Ito of Teijin Research Center (Iwakuni, Yamaguchi, Japan). The specificity of the antiserum was tested using an established enzyme immunoassay [2], confirming specific reaction with human and bovine carboxy-terminal type II procollagen peptide and no cross-reactivity with type I and II collagen, hyaluronan, and osteocalcin. The results are shown in Fig. 1 and 2. Most of the metaplastic chondrocytes in the synovium of our previously reported case showed strongly positive staining by anti-chondrocalcin (Fig. 1). Some chondrocytes in free bodies also showed positive staining (Fig. 2). Because chondrocytes in normal articular cartilage are known to show negative staining by the same method [3], we believe that the major source of chondrocalcin was the metaplastic cartilage. No diagnostic laboratory findings have been so far indicative of synovial chondromatosis, but the disease should be recognized as one of the arthropathies in which excess chondrocalcin can be observed.

Milgram suggested that cartilage metaplasia indicates active intrasynovial disease, which is self-limiting and becomes quiescent in a later period [4]. On this basis, he recommended synovectomy with removal of loose bodies when active intrasynovial disease is present, but removal of loose bodies alone in the late phase. As production of chondrocalcin is linked to production of type II procollagen, levels of chondrocalcin may represent the degree of ongoing

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Address correspondence to Koji Inoue, M.D., Department of Orthopaedic Surgery, Shiga University of Medical Science, Setatsukinowacho, Otsu, Shiga, 520-21, Japan.

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Fig. 1. Immunolocalization of chondrocalcin in the synovial cartilage (×40).
cartilage formation, and hence present disease status, active or quiescent. We consider that the validity of evaluation of chondrocalcin in assessing the disease activity in synovial chondromatosis should be examined by further study.

Lastly, we would like to express our respect to Dr Shinmei, who died of cancer on June 1, 1995.

References

KOJI INOUE*, HIDETO NAKAJIMA†, TOSHIO USHIYAMA* AND SINSUKE HUKUDA*
*Department of Orthopaedic Surgery, Shiga University of Medical Science, Setatsukinowacho, Otsu, Shiga, 520-21; and †Department of Orthopaedic Surgery, National Defense Medical College, 3-2 Namiki, Tokorozawa, Saitama, 359, Japan.