

Ragocytes in Synovial Fluid

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Exfoliative cytology of synovial fluid is less stressed in medical practice, but it can be a very useful tool for the differential diagnosis of various joint diseases. This report describes a case of juvenile rheumatoid arthritis in a 7 year old girl, who showed characteristic ragocytes in joint fluid. Synovial biopsy specimen confirmed the diagnosis of rheumatoid arthritis.

Key Words: ragocyte, synovial fluid, rheumatoid arthritis

Synovial effusions in cases of joint diseases were sent usually for only bacteriologic examination without cytologic examination of exfoliated cells in synovial fluid. However, a few articles revealed some significant findings of exfoliated cells in synovial effusion in variety of joint diseases¹⁻³⁾. The "ragocyte", is a polymorphonuclear leukocyte which has 2 to 10 intracytoplasmic inclusions, and these inclusions have been found in joint effusion of rheumatoid arthritis and a few other diseases¹⁻³⁾. We report a case of juvenile rheumatoid arthritis, who showed ragocytes in joint effusion.

Case report: The patient was a 7 year old school-girl who had suffered from recurrent swellings and pain of both knee joints for 3 years. The symptoms used to be relieved with salicylate medication and aspiration of joint fluid, but the symptoms recurred soon after stopping medication. Her laboratory examinations including hemogram and blood chemistries were all within normal range. The RA factor and FANA were negative in serum. X-ray films of joint did not show any abnormality. For the diagnostic purpose open synovial biopsy was performed from the left knee joint, and a small amount of

synovial fluid was aspirated.

The aspirated effusion was turbid yellow and negative for mucin clot test. Microscopically, there were many neutrophils (70-200/HPF) and small round cells in clear background. About 20-30 per cent of polymorphonuclear leukocytes were the ragocytes showing multiple small round dense intracytoplasmic inclusions (Fig. 2). The inclusions were often seen as free bodies without definite nuclei of the cells. These inclusions could be detected easily with green filtre under polarized microscope. Synovial lining cells were infrequently encountered as single cell or small clusters. However, cartilagenous cell was not found. The histologic examination of the synovial tissue showed diffuse proliferation of synovial lining cells and highly vascularized fibrous tissue with infiltrations of lymphocytes, macrophages and occasional neutrophils (Fig. 1). No definite granuloma was seen.

Discussion: Although rheumatoid arthritis is the major disease to find synovial fluid ragocytes, it is described that the ragocyte could also be found in rheumatic fever, villonodular tenosynovitis, and infrequently in septic arthritis¹⁾. However, the fre-

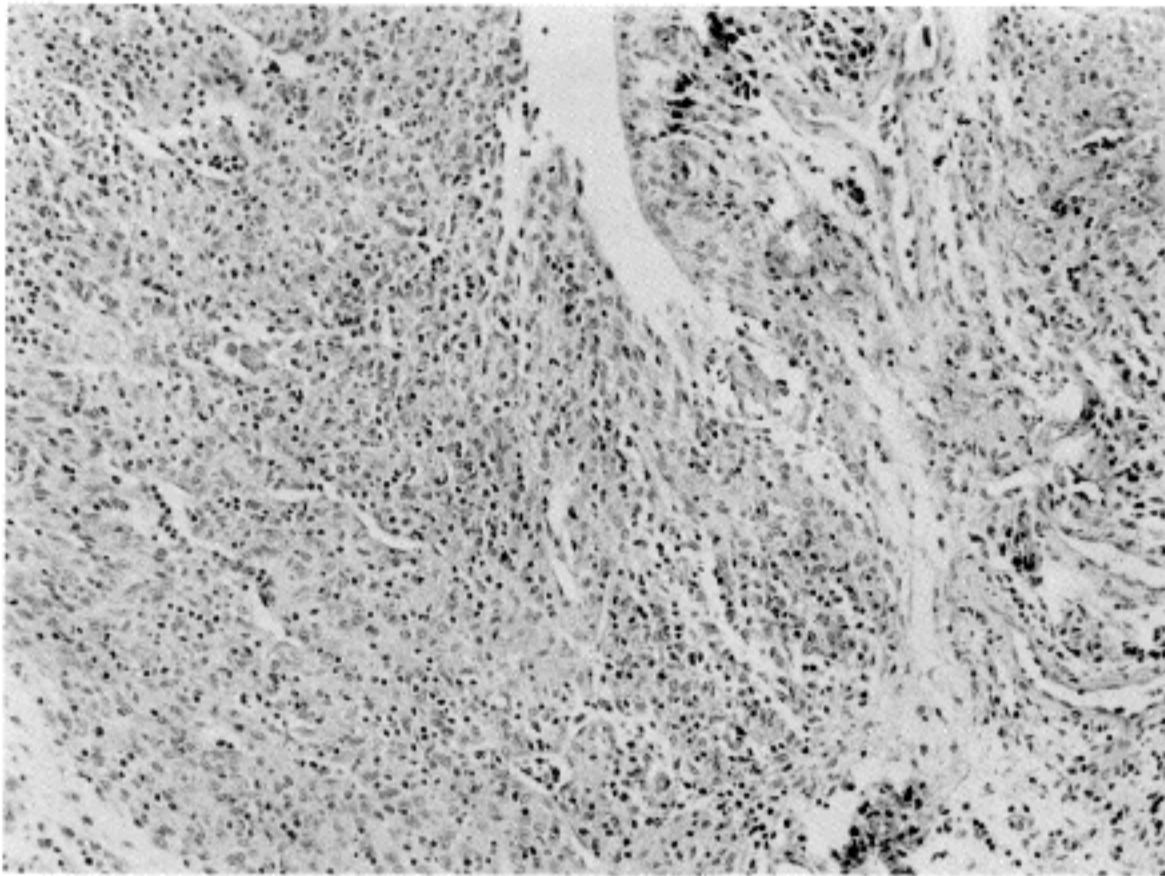


Fig. 1. Photomicrograph of synovial biopsy, showing a diffuse proliferative synovitis of rheumatoid arthritis. H & E $\times 100$

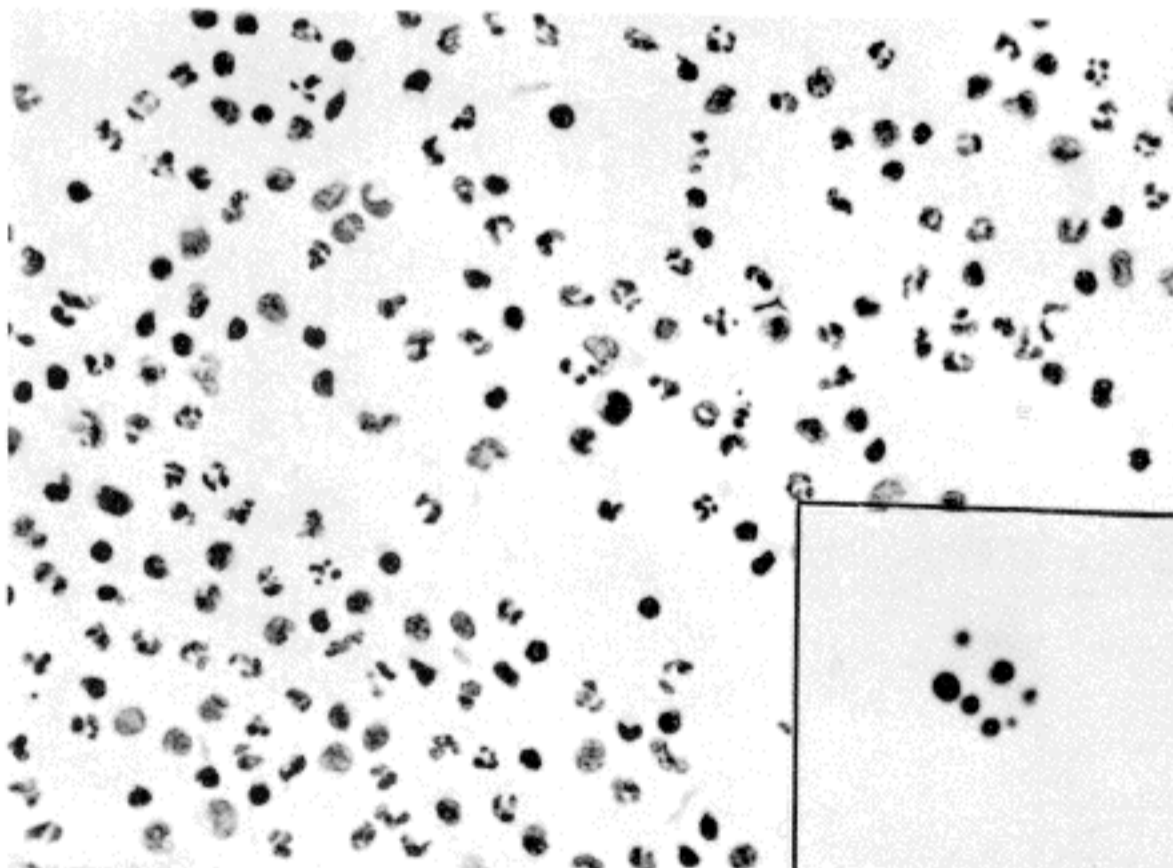


Fig. 2. Photomicrograph of joint fluid, showing numerous ragocytes. Inset shows higher magnification of one ragocyte. H & E ($\times 400$, $\times 1000$)

quency of ragocytes and other findings of synovial cells, cartilagenous cells, composition of inflamma-

tory cells and biochemical nature of the fluid among others could give a reasonable confidence on

rheumatoid arthritis. The inclusions seen in patients of systemic lupus erythematosus (LE bodies) have some similarity to the ragocytes, but they show larger pink inclusions with more blurred outlines^{2,3)}.

The nature of the inclusions in the ragocytes are known as the condensed immunoglobulin, mainly IgM^{2,3)}.

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== 국문초록 ==

관절액에서의 Ragocyte

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7세 소녀의 류마치스성 관절염 환자에서 관절액의 세포병리학적 검사를 시행하여 전형적인 ragocyte를 관찰하고 보고한다. 관절액의 세포학적 검사는 비교적 용이하게 여러가지 관절질환을 진단할 수 있는데도 불구하고 실제 별로 시행되고 있지않고 있다는 점과 이로인해 임상 의사 및 병리의사들의 관심이 적다는 점에서 간단히 증례보고를 하고 문헌 고찰을 하였다.