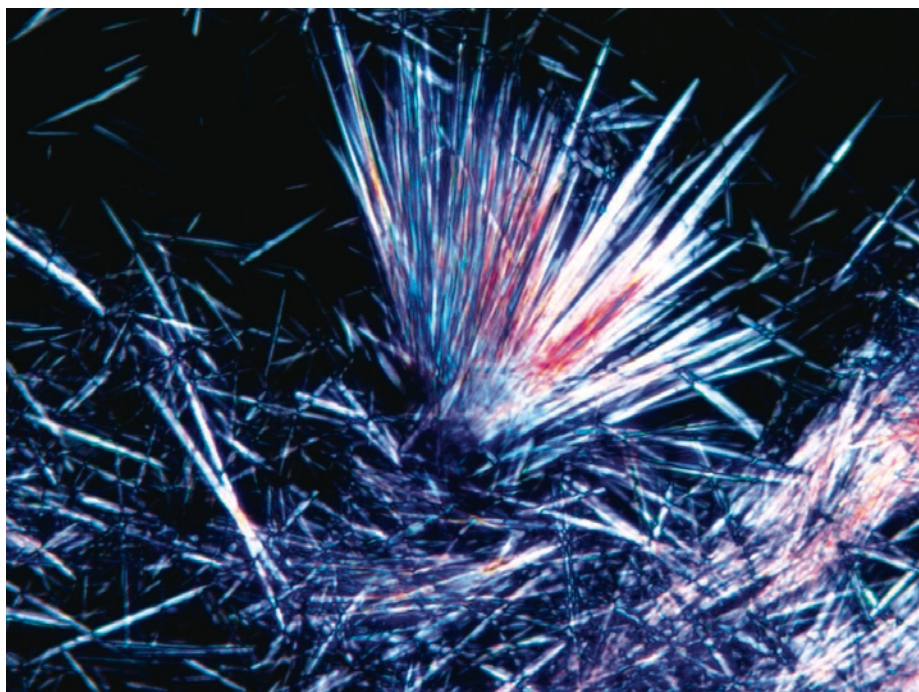


Uric acid crystals



Synovial fluid is examined as a matter of routine in evaluations of swollen joints. Microscopic examination is used to assess cellularity and the cell types present and to determine whether there are crystals. A polarising filter is required for microscopic examination of crystals.

In gout cases, only scattered uric acid crystals are found in the synovial fluid as a rule, but in rare cases there may be a considerable accumulation. The question of whether the material stems from a tophus related to the joint should then be considered. A tophus is a knobbly aggregate of uric acid crystals (monosodium urate monohydrate crystals) producing a foreign-body response (1). They may occur in any anatomical location, but most commonly around joints.

Synovial fluid may be prepared as a direct smear or as a centrifuged product. This will affect both the cellularity and the crystal

density of the preparation, depending on the centrifuged volume.

Uric acid crystals are characterised by their needle shape and strong double refraction in polarised light, whereas crystals of calcium pyrophosphate dihydrate, which are found in chondrocalcinosis, have a more rhomboid appearance and limited birefringence (2, 3).

By definition, the presence of uric acid crystals in synovial fluid means that the patient has gout, and the specificity of the examination is therefore high. The sensitivity is somewhat lower, and may be due to inadequate training in microscopic techniques to detect uric acid crystals (4).

The image shows massive aggregation of uric acid crystals viewed under polarised light with 400 x enlargement.

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