Case Report: Direct Comparison of Bilateral Knee Arthrocentesis – Visually and Microscopically Dissimilar Results

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Introduction. Arthrocentesis is a procedure performed both for diagnostic and therapeutic reasons. Arthrocentesis can be utilized to differentiate among crystal arthropathies, such as gout and pseudogout, as well as evaluated inflammatory and noninflammatory effusions. Traditionally, pseudogout flares tend to affect a single joint. However, pseudogout can affect multiple joints at one time. There have been several documented cases of coexisting etiologies for knee swelling. However, there is a lack of literature covering simultaneous acute bilateral effusions with differing etiologies.

Methods. Information was gathered from chart review and directly from patient and family members with their consent.

Results. The patient underwent bilateral knee arthrocentesis in the ED. On collection, the synovial fluid was noted to be markedly dissimilar in appearance. The right knee microscopy yielded pseudogout (17304 white blood cells [WBC], 4605 red blood cells [RBC], negative gram stain, positive for rare calcium pyrophosphate deposition [CPPD] crystals); the left knee yielded inflammatory arthritis without crystals (417 WBCs, 1085 RBCs, negative gram stain, negative for crystals).

Conclusions. This is one of the first documented cases of a bilateral knee arthrocentesis with differing etiologies. Furthermore, following these findings, the patient was admitted to the Internal Medicine service for pain control, physical and occupational therapy, and further evaluation. Synovial fluid culture was ultimately negative ruling out septic arthritis. The patient was discharged with instructions to follow-up with Rheumatology outpatient for future CPPD treatment, including initiation of Plaquenil.