CASE REPORT: Chronic synovialitis in beginning gonarthrosis

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Detailed information about the specific history:

On **September 30, 2002** an **arthroscopy of the left knee joint** was carried out (Prof. Hertel, MD, Eduardus Hospital, Cologne, Germany) involving the subtotal resection of the inner meniscus including the trimming of the inner meniscus, smoothing of the cartilage in the medial condyle of the femur and trochlea femoris as well as a partial synovectomy.

On **January 24, 2003**, a **radiosynoviorthesis with 185 MBq Yttrium 90-Citrate** and an intraarticular injection of 20 mg triamcinolone were effected due to recurrent swelling (B. Frentz and partner, group practice for radiology and nuclear medicine, Klinik am Ring, Cologne, Germany).

Due to sonographic signs of reactive synovialitis with a distinct effusion, the left knee was repunctured (30 ml of clear, yellowish effusion) on February 10, 2003 followed by another intraarticular injection of 20 mg triamcinolone. Based on the same findings, the same procedure was repeated on March 12, 2003 (Frentz and partner, group practice for radiology and nuclear medicine, Klinik am Ring, Cologne, Germany).

Findings of the MRI of the left knee joint, July 29, 2003 (Dr. Rosarius and partner, group practice for radiology and nuclear medicine, Cologne, Germany):

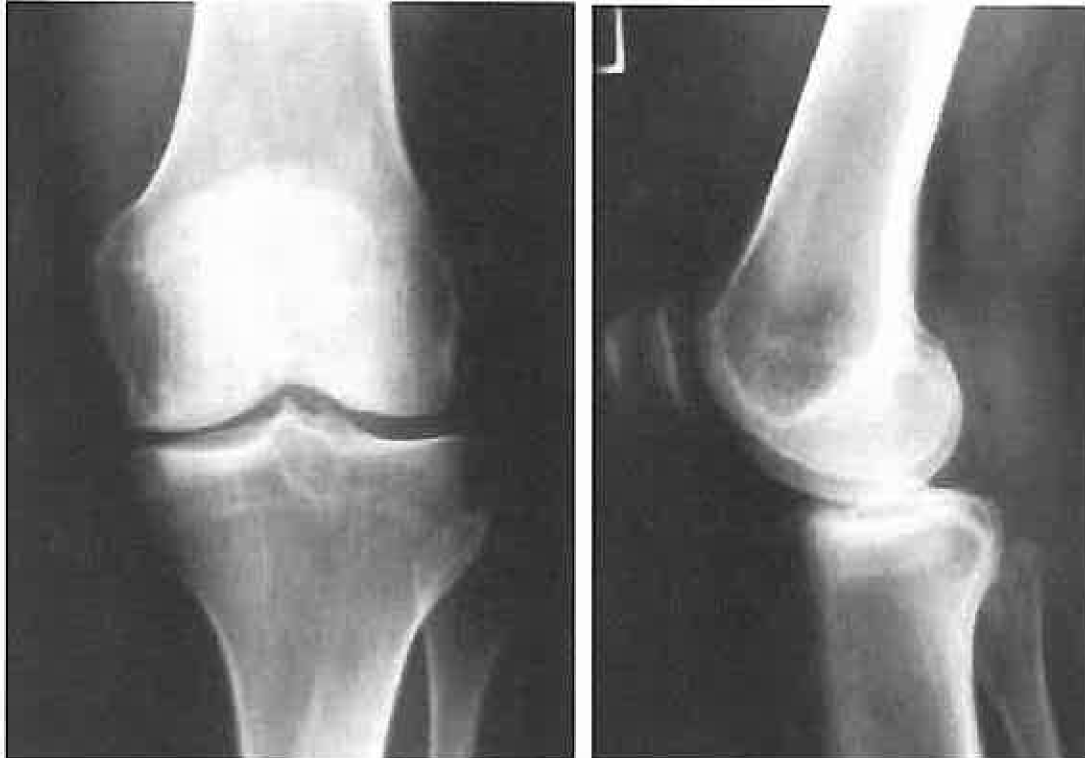
Extensive resection of the posterior horn and pars intermedia of the inner meniscus. Beginning arthrosis with inhomogeneous signal in the cartilage surfaces and small medial osteophytic processes. The outer meniscus and ligaments are intact. Small edema in Hoffa's fat pad. Baker's cyst with detritus and septa. Compared to August 2002 the Baker's cyst seems slightly smaller, but the effusion is largely unchanged.

Current information of March 11, 2004 about the course of the disease up until this point:

Since the arthroscopy of the knee joint roughly 18 months ago, this 55-year-old physically active woman (tennis, skiing) has been suffering from constant **pain** in the left knee joint **(Visual Analog Scale/VAS: level 5 when walking normally, up to level 7 when under strain)** accompanied by **recurrent swelling** which increases with strain; pain and swelling have shown to be treatment-resistant despite intense aftercare.

Comment: Sustained synovitis is resulting in a more or less rapid progression of arthrosis. Therefore, in addition to conservative measures, surgical interventions (i.e. transarthroscopic or open synovectomy and, depending on the arthrosis, total or subtotal replacement of the affected compartment of the knee joint, for example in form of a sled prosthesis) must be carried out in individual cases, aimed to slow down progression or enhance restoration.

Radiological examination of the left knee in 2 planes on March 11, 2004:
Discreet medial narrowing of the joint space, discreet rim processes in the medial joint partners and the lateral patellar rim, fine-pointed processes of the eminentia intercondylaris. In summary, signs of beginning medial gonarthrosis.



During the treatment period, the patient was first treated with 100 mg diclofenac daily for 3 months and prescribed a muscle stimulation device for a period of 6 months aimed to restore the muscles. This did not result in any substantial improvement of the complaints and sonographic findings (sustained effusions documented).

Findings of the MRI of the left knee joint on September 20, 2004 (Dr. Ohndorf and partner, specialists in radiology, Cologne, Germany).

Condition after partial resection; only the remnants of the posterior horn, lateral part and anterior horn of the inner meniscus are visible. Mucoid degenerative changes in the outer meniscus, no fissures cutting through the surface detected. Beginning formation of an intraosseous ganglion (small in size, only few millimeters) ventrolaterally in the lateral tibia plateau of the eminentia intercondylaris.

Distinctly narrowed medial side of the joint space due to the largely thinned cartilage on the femoral and tibial side. Discreet bone-marrow edema in the ventromedial segment of the medial condyle of the femur.

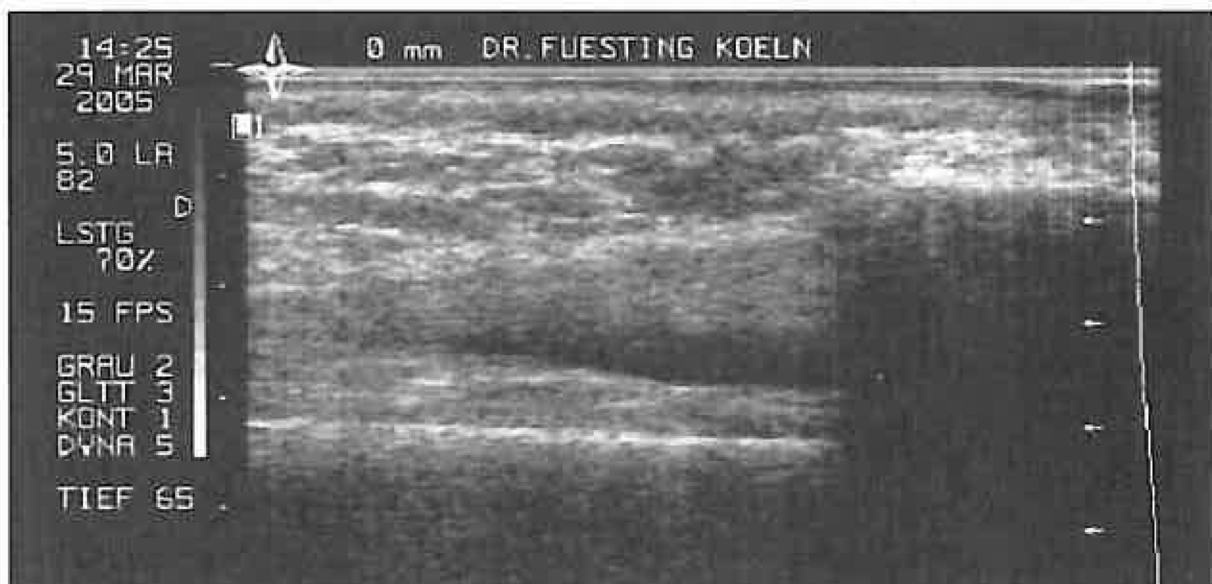
Inhomogeneous signal in the central region of the patellar cartilage. No osteochondral lesions detected.
Perfectly normal rendition of the cruciate ligaments, collateral ligaments and ligamentum patellae.
Discreet joint effusion. Baker's cyst in typical localization with a maximum craniocaudal dimension of 5.5 cm.
Normal rendition of the paraarticular musculature.

November 26, 2004: Exclusion of inflammatory rheumatic disease (Prof. Hallek, Clinic I for Internal Medicine, University of Cologne, Germany): a local injection therapy with steroids is recommended.

The patient thus received 2 injections of 40 mg triamcinolone (on December 15, 2004 and on February 28, 2005), again without any distinct improvement of the clinical complaints and sonographic findings.

Sonography of the left knee joint (5 MHz Linear Array, suprapatellar longitudinal scan) on March 29, 2005:

Continued distinct delineation of the suprapatellar recess as a sign of the sustained reactive effusion. Symptoms of minor synovialitis.

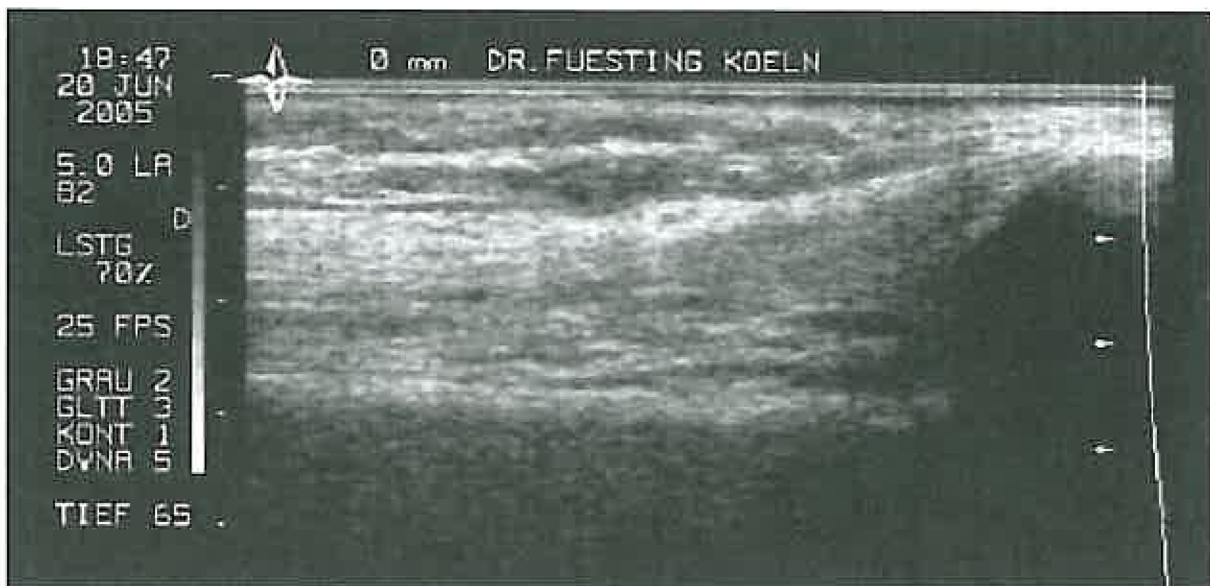


The patient therefore underwent therapy with the Medithera Medical-System 2-3 times per week with a total of 20 sessions:

Medithera Medical-System therapy program with individual settings:
A 1 Full-body therapy – Intensity level 3 for 5 minutes +
A 6 Local therapy – Intensity level 3 for 16 minutes
Pain severity upon initiation of the therapy on March 29, 2005: VAS level 5-7
Pain severity at the end of the therapy on June 2, 2005: VAS level 0-1

Follow-up sonography of the left knee joint (5 MHz Linear Array, suprapatellar longitudinal scan) on June 20, 2005:

The delineation of the suprapatellar recess is no longer detectable. The reactive effusion has fully receded. Discreet signs of a remaining synovialitis.



At the follow-up on June 20, 2005 the patient is entirely free of complaints in everyday life. Clinically, the left knee is now free of irritation and fully resilient.

Pain intensity on June 20, 2005: VAS Level 0 (when walking normally and under strain).

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