

NEW POSSIBILITIES FOR THE TREATMENT OF CHRONIC KNEE SYNOVITIS IN SURGICAL PRACTICE

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Abstract:

This article explores new treatments for chronic knee synovitis in surgery and explores new treatments for knee synovitis. In surgical practice, new methods and programs for the treatment of chronic knee synovitis are constantly developing. It is being studied by renowned medical institutes and universities.

Keywords: diagnosis, surgical treatment, chronic synovitis, arthroscopy, manipulation, hyperemia.

Introduction

Chronic synovitis syndrome (CCS) of the knee joint is a common pathology, the etiology and pathogenesis of which have not been fully studied. Criteria for differential diagnosis and indications for surgical treatment have not yet been developed. CCS is characterized by significant variability of its causes and the complexity of differential diagnosis [1, 2, 3, 4, 5]. The similarity of symptoms in the early stages of the pathological process, the lack of clear diagnostic criteria dictate the need for differential diagnosis of this disease and determination of indications for treatment [6, 7].

In recent years, there has been an increase in reactive arthritis (ReA) associated with urogenital infection. According to the Institute of Rheumatology of the RAMS, ReA patients account for about 12% of patients in rheumatology hospitals.

With a prolonged course of CCS, the condition of the bone-cartilaginous structures forming the knee joint is disrupted. And also patients are unreasonably exposed to repeated local administration of hormonal drugs [8, 9, 10, 14, 17.] as a result, arthropathy and purulent-septic complications may develop. The most complete picture of the nature of changes in the affected joint can be obtained with the complex application of diagnostic methods.

Arthroscopy, synovocapsulectomy, and arthroplasty for cartilage degeneration are the most effective methods of surgical treatment of affected joints [11, 12, 14.].

The purpose of the study. To study and describe the results of arthroscopic diagnosis and treatment of chronic knee synovitis, its synovocapsulectomy.

Materials and methods

The study was conducted in the Department of Traumatology of the 2nd clinic of the Tashkent Medical Academy (2006-2011) and in the department of large joints of the

Samarkand Regional Hospital of Orthopedics and Consequences of Injuries, on the basis of SamMU (2021-2023) in 219 patients. There were 110 (50.2%) men and 109 (49.8%) women among the surveyed. The age of the patients ranged from 20 to 71 and older. The highest frequency was observed in people from 21 to 30 years old (about 21%), in patients from 41-50 years old (about 19%).

According to etiological factors, 29.7% of patients were diagnosed with urogenic, 34.9% with rheumatoid arthritis, 10.8% with lesions, meniscus degeneration, 8.2% with deforming arthrosis (DOO), 7.2% with tuberculosis, 6.2% with brucellosis, 3.1% with PVOS (pigmented villous nodular synovitis).

According to the indicator of affected joints, 71.8% had monoarthritis, 6.7% had oligoarthritis, 9.7% had polyarthritis, and 11.8% had arthralgia.

The examination was carried out on the basis of a thorough medical history; determination of the intensity of pain in the knee joint using a visual analog pain scale; clinical studies; manual muscle testing by Lovet; goniometry; measurement of the circumference of the joint and the skin temperature around it; radiography, MRI; puncture of the joint; biochemistry of synovial fluid. The main clinical signs of chronic inflammation of the synovial membrane were pain, arthralgia and swelling of the affected joint. Urogenic etiology and rheumatoid arthritis prevailed in patients with CCS. The duration of CFS in patients with urogenic pathology ranged from 8 to 11 months; rheumatoid arthritis – from 4 to 10 months; tuberculosis and brucellosis – from 7 to 13 months; deforming osteoarthritis (DOO) and meniscopathy – from 3 to 5 months; pigmented villous nodular synovitis (PVOS) of the knee joint - from 6 to 12 months.

With the help of arthroscopic examination, anatomical changes in the synovial membrane are revealed in CCS CS.

Arthroscopic examination was performed with Dyonics video arthroscopes (USA) in 84 patients with CCS CS (88 knee joints). There were 37 women and 47 men. The average age is 42 years. Local or peridural anesthesia was performed. When performing CS arthroscopy, we followed the standard imaging method, using anterolateral access. At the same time, the COP was bent at an angle, on average, 45 °. The landmark of this access was the Geberd point 1 cm above the lower edge of the patella and 0.5 cm laterally of its own ligament, where the skin was punctured with a sharp trocar. Then, with progressive movements, the capsule of the joint was pierced to the feeling of a "failure" of the trocar. After that, the sharp trocar was replaced with a blunt obturator, an obturator with a telescope and a video camera with a fiber optic guide. With smooth movements, the CS was unbent, and the arthroscope was carried out under the patella into the upper inversion of the joint. Next, the joint cavity was filled with saline solution by constant irrigation. At the same time, the arthroscope was positioned almost perpendicular to the CS.

Initially, the intercondylar elevation of the tibia, the anterior cruciate ligament, the lateral edge of the medial condyle of the femur, the inner edge of the medial meniscus, the Goff corpuscle and the transverse ligament were examined. The examination was continued

by the curvature of the medial condyle of the femur, where cartilage damage is most often observed in RA patients. The most frequently observed was a fibrous anterior horn of the meniscus and 2/3 of its paracapsular zone.

To examine the posterior third of the meniscus, the CS was bent to 40-45 ° and the tibia was given a hallux valgus position. In parallel, the synovial membrane of the medial lateral inversion was examined, then the outer condyle of the femur and the lateral meniscus. Manipulating the arthroscope, the patellofemoral joint was examined, starting with the femoral sulcus, then the crest of the patella, its lateral and medial facets. Attention was paid to the condition of the cartilage cover, the degree of chondromalacia, and compliance with patellar-femoral stability. If the contrast of the cartilaginous integuments was significantly enhanced during gas arthroscopy, then the drive one revealed chondromalacial changes in the form of "algae" well.

Arthroscopy is the only method of objectively assessing the course of arthritis and taking biopsies from the synovial membrane and cartilage. Arthroscopic irrigation (lavage) of chronic synovitis of CS promotes the leaching of kinins, enzymes and particles of damaged cartilage from the pathological focus, reduces the irritation of synovia.

Arthroscopy made it possible to differentiate the nature of joint damage in patients with a similar clinical picture of the disease, to study the relief of the synovial membrane throughout its entire course. Changes in the synovial membrane depended on the prescription of synovitis and the features of its development. The inflammatory process in most patients was accompanied by thickening of the synovial membrane, the appearance of hyperemia, proliferation of villi, and the formation of fibrin clots on its surface. One of the features of CCS was an increase in the volume of synovial membrane lesion, as evidenced by the severity of villous proliferation.

In CCS of the knee joint of urogenic etiology, the synovial membrane was dirty gray, hyperplastic, with areas of moderate hyperemia. Abundant deposits of fibrin masses were detected in the upper inversion. The villi looked like large and flat petals. The vessels were faintly visible on the surface of the villi. The cartilage is dull in color, with areas of defects, chondromalacia of the patella in the form of algae.

In stage I rheumatoid arthritis, hyperemia of the synovial membrane and increased vascular pattern were observed, its edema and increased bleeding, slight hypertrophy of Goff's corpuscles, the color of the cartilage was not changed, in some cases, initial signs of chondromalacia were observed in the area of the condyles of the thigh. With water arthroscopy, chondromalacial changes in the form of "algae" were well detected. In stage II, there was a sharp hyperemia and thickening of the synovial membrane, significant hypertrophy of Goff's bodies. The villi are thickened and voluminosely hypertrophied, have a characteristic club-shaped shape. The anterior cruciate ligament is somewhat weakened. A pannus creeps along the edges of the cartilage cover. In most cases, small cracks and erosions were found in the medial condyle of the femur. The menisci are fibrous. At stage III, the synovial membrane had a light purple color, and there were many hyper-granular pathological tissues in the joint cavity. Obliteration is observed in

the lateral channels. The cartilaginous integuments are covered with pannus, there are many deep cracks in the cartilage, and in some places there is a spreading, the subchondrial bone is visible. There are many fine-grained formations in the lateral channels in the form of a curd mass corresponding to non-sterilized corticosteroids. Almost all of them have grade III-IV chondropathy according to Outerbridge. The articular cartilage of the femoral and tibial bones is fibrous, with the formation of deep cracks and defects in the form of a "mosaic".

PVOS was characterized by staining of synovial tissue in orange-brown color due to frequent hemorrhages from pathological newly formed vessels and accumulation of hemosiderin. The vascular pattern is structureless and difficult to visualize. Arthroscopic lavage and knee joint biopsy were performed in patients with CCS of urogenic etiology and rheumatoid arthritis. In patients with PVOS, diagnostic arthroscopy and biopsy were limited. 3.5-4 liters of liquid with the addition of 200 ml of 2% dioxidine were used to wash the knee joints. Lavage of the knee joints made it possible to remove the bulk of cartilaginous detritus and fibrin accumulations from them, reduce the activity of synovitis, and reduce the severity of pain syndrome.

After arthroscopy, the pain syndrome, swelling and effusion in the joint significantly decreased or disappeared; the amplitude of movements increased, the functional activity of the muscles and the support of the limb were restored. The most pronounced positive changes were noted in patients with long-standing articular cartilage injuries, chronic post-traumatic synovitis, DOO, RA. Improvement in the general condition of patients and joint function after arthroscopy meant remission of the disease for many months. The positive dynamics of the disease was due to the removal of pathological synovial fluid containing articular detritus – fragments of articular cartilage of various sizes, fibrin films and filaments, lumps of mucin, etc. irrigation of the joint during arthroscopy has a pronounced therapeutic effect.

If arthroscopic treatment is ineffective for up to 6 months, a surgical method is indicated to prevent cartilage destruction.

Synovcapsulectomy of CS is indicated with the ineffectiveness of conservative treatment methods, constant pain, limited function of support and walking, a sharp decrease in self-care (daily household difficulties), recurrence of synovitis against the background of constant intake of basic, corticosteroid, nonsteroidal anti-inflammatory drugs; lack of effect of local applications of drugs, intra-articular injections of corticosteroids, cytostatics for six months to one year. We performed synovcapsulectomy according to the method of Pavlov V.P. (1977), Azizova M.Zh. (1995).

Synovcapsulectomy was performed on the 35th knee joint in order to prevent the destruction of cartilage.

In the postoperative period, for 4 weeks or more, patients engaged in physical therapy, which includes isometric and dynamic exercises for all muscle groups of the affected limb. Conclusions:

Based on clinical, arthroscopic examination, the etiological factor of knee joint CCS can be established. This will improve the accuracy of diagnosis, and the effectiveness of treatment increases to 85%. In the presence of TORCH, tuberculosis and brucellosis, treatment should be carried out jointly with related specialists.

Arthroscopic comparative analysis is one of the main diagnostic criteria for the differential diagnosis of CCS of the knee joint. The choice of surgical treatment of knee joint CCS should be based on arthroscopic diagnosis of synovial membrane, cartilage and soft tissue changes. The ineffectiveness of conservative treatment for up to 6 months is an indication for arthroscopy and synovocapsulectomy of the knee joint followed by dynamic monitoring.

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