

# DIAGNOSTIC AND THERAPEUTIC ARTHROSCOPY IN ACUTE INJURY OF THE KNEE JOINT COMBINED WITH VARICOSE DISEASE

<sup>1</sup>Seidov I.I.\*

\*e-mail: inarseid@gmail.com

<sup>1</sup>*Azerbaijan State Advanced Training Institute for Doctors named after A.Aliyev,  
Department of Traumatology and Orthopedics, Baku, Azerbaijan*

Since 2013 has performed 520 arthroscopic surgeries for damage of knee joint. In 350 patients, treatment results were studied up to 5 years or more. The average age of patients was 35 years. Patients complained of pain, restriction of motion and a feeling of blockage in the knee joint, as well as impaired supportability of the injured lower limb. In 101 patients, knee damage was accompanied by varicose veins of the lower extremities, 35 patients underwent simultaneous operations, and the rest of the group received conservative treatment for varicose veins and surgical treatment for damage to the knee joint. The Lysholm score for patients with isolated meniscus injuries after 4-6 weeks was  $91 \pm 4.4$  points, and for patients with chondromalacia, on average,  $86.3 \pm 3.6$  points. The clinical results of simultaneous operations significantly exceeded the results of those patients who received conservative treatment for varicose veins, this fact requires further study.

**Keywords:** knee joint damage, varicose veins, combined injuries, minimally invasive knee joint surgery.

**The relevance of the problem.** Damage to menisci takes first place among injuries of the knee joint (KJ). These injuries lead to impaired supportability of the lower limb and restriction of movement in the knee joint. Timely assistance helps contribute to the speedy restoration of patient performance. Long-lasting damage to the meniscus leads to the development of degenerative-dystrophic changes in the knee joint. Arthroscopic interventions are the gold standard for these injuries today. According to 1998 data, out of 1.5 million arthroscopic knee-joint interventions performed in various US clinics, 850 thousand are related to meniscus surgery [4, 6]. In recent years, interest in meniscus reconstructive operations has been growing [1-3, 7]. However, arthroscopic resection of menisci has not lost its significance [3, 5]. Injuries of the knee require emergency arthroscopy, but the risk of it on the background of varicose disease is quite high, despite prevention, therefore both of these diseases come into a certain contradiction, but they require surgical treatment [8].

**Purpose.** Study of the results of arthroscopic surgery of the knee joint with

and without varicose veins of the lower extremities.

**Materials and methods.** Since 2013, the City Hospital has performed 520 arthroscopic surgeries for damage to the medial and lateral menisci. In 350 patients, treatment results were studied up to 5 years or more. All patients turned in acute and subacute periods of injury. The average age of patients was 35 years. Injury of the right knee joint was observed in 278 patients, the left in 242. Among the patients there were men 301, 219 women. Patients complained of pain, restriction of motion and a feeling of blockage in the knee joint, as well as impaired supportability of the injured lower limb. All patients had a history of trauma to the knee joint with a characteristic rotational component. Indications for surgery were ruptures of the medial and lateral menisci with characteristic clinical manifestations, confirmed by MRI data (Fig. 1 and 2).

In 101 patients, knee damage was accompanied by varicose veins of the lower extremities, 35 patients underwent simultaneous operations (Fig. 3 and 4), and the rest of the group received conservative treatment for varicose veins and surgical treatment for damage to the knee joint.

All patients underwent arthroscopic meniscus resection. The operations, as a rule, were performed under spinal anesthesia in the position of the patient on the back with a bent knee joint. Two arthroscopic approaches anterolateral and anteromedial, through which an optical tube (arthroscope) and instruments were inserted into the joint cavity. For the possibility of performing a valgus deviation in the knee joint (a necessary maneuver to achieve full access to the medial meniscus), a lateral port was used. All patients underwent arthroscopic revision of the knee joint.

If meniscus damage was detected by the type of “buscet handle” that caused blocking of the knee joint, resection of the meniscus part was performed by sequentially biting the posterior and anterior horns. After removing the resected part of the meniscus, the residual edge was leveled with arthroscopic cutters to prevent further separation of the remaining part of the meniscus. In cases where there was damage to the cartilage tissue of the condyles of the femur and tibia, the

debris was chondromalacia sites in order to prevent further cartilage tissue erosion.

For varicose veins, miniflebectomy was performed in 21 cases, endovenous laser ablation of perforating veins in 8 cases, crossotomy in 6 cases.

From the first day after the operation, patients were prescribed physiotherapy exercises aimed at restoring active movements in the knee joint. Victims with isolated meniscus injuries were allowed to walk with partial support on the injured limb during the first days after the operation. By the end of the second day, a full load on the damaged limb was allowed. In patients with the presence of chondromalacia, partial axial load on the injured limb was allowed in the first two weeks after surgery with the transition to full load by the end of the second week.

**Results.** Assessment of the condition of the knee joint was carried out on a scale of "Lysholm". Damage to the medial meniscus by the type of "basket handle" was observed in 32 cases. In other cases of observation, there were ruptures of the medial and lateral menisci of different localization. All victims underwent resection of the damaged and hypermobile meniscus sites, followed by modeling of the intact part. In 12 patients, the medial or lateral condyle of the femur and/or tibia of the I-II degree according to Outerbridge was noted. In 5 patients with injuries that corresponded to the II degree according to Outerbridge, chondromalacia sites were debrided in order to prevent further cartilaginous tissue decomposition.

After 4-6 weeks after surgery, all patients showed a complete restoration of range of motion in the damaged joint. The Lysholm score for patients with isolated meniscus injuries was  $91 \pm 4.4$  points, and for patients with chondromalacia, on average,  $86.3 \pm 3.6$  points.

6 months after the operation, in patients with isolated meniscus injuries, there was a complete restoration of the support ability of the injured limb and the absence of any complaints from the injured joint. Patients with cartilage damage of the II degree according to Outerbridge noted pain in the knee joint, aggravated by prolonged walking (more than 30 minutes) or when climbing and descending

stairs. Thus, in the acute period of a knee joint injury, arthroscopic meniscus resection is an effective treatment method that allows you to start early rehabilitation and return the patient to active work within a few weeks after the injury. A factor aggravating the rehabilitation process is chondromalacia of the condyles of the femur and tibia.

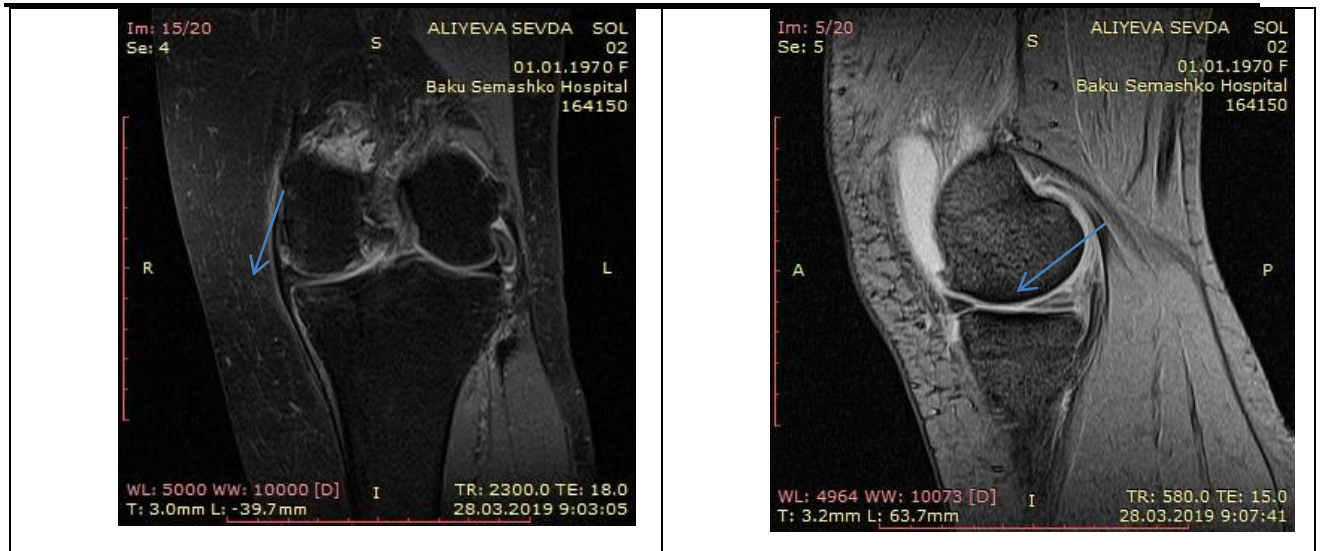


Fig. 1. Medial meniscus posterior horn damage

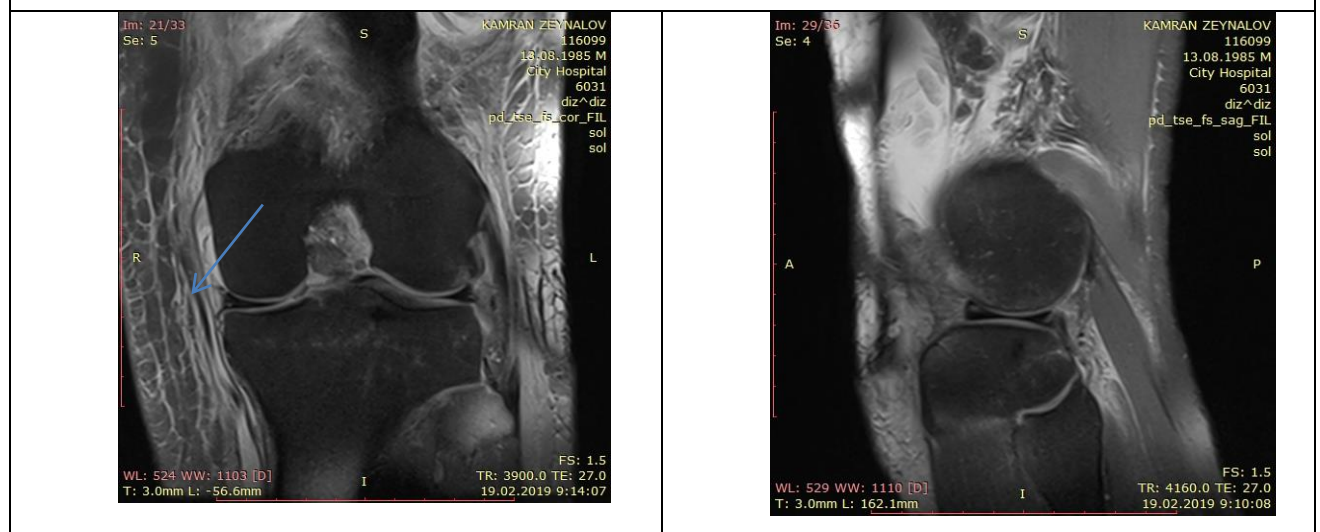


Fig. 2. Damage of medial meniscus by the type of "basket handle"



Fig. 3. Preoperative planning

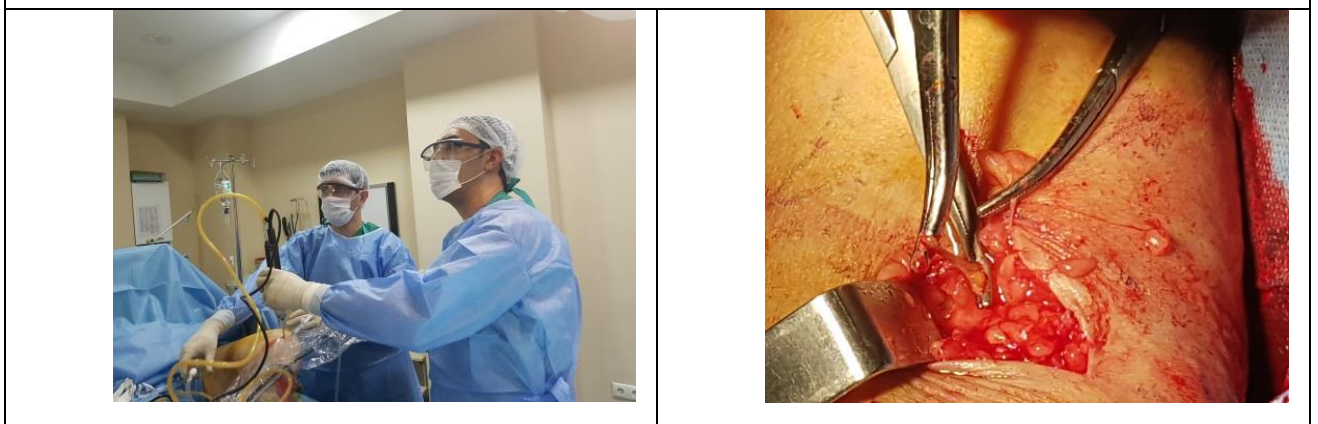


Fig. 4. Diagnostic arthroscopy (a), miniflebectomy (b)

**Discussion.** Assessment of the condition of the knee joint was carried out on a scale of "Lysholm". Damage to the medial meniscus by the type of “basket handle” was observed in 32 cases. In other cases of observation, there were ruptures of the medial and lateral menisci of different localization. All victims underwent resection of the damaged and hypermobile meniscus sites, followed by modeling of the intact part. In 12 patients, the medial or lateral condyle of the femur and/or tibia of the I-II degree according to Outerbridge was noted. In 5 patients with injuries that corresponded to the II degree according to Outerbridge, chondromalacia sites were debrided in order to prevent further cartilaginous tissue decomposition.

After 4-6 weeks after surgery, all patients showed a complete restoration of range of motion in the damaged joint. The Lysholm score for patients with isolated

meniscus injuries was  $91 \pm 4.4$  points, and for patients with chondromalacia, on average,  $86.3 \pm 3.6$  points.

6 months after the operation, in patients with isolated meniscus injuries, there was a complete restoration of the support ability of the injured limb and the absence of any complaints from the injured joint. Patients with cartilage damage of the II degree according to Outerbridge noted pain in the knee joint, aggravated by prolonged walking (more than 30 minutes) or when climbing and descending stairs. Thus, in the acute period of a knee joint injury, arthroscopic meniscus resection is an effective treatment method that allows you to start early rehabilitation and return the patient to active work within a few weeks after the injury. A factor aggravating the rehabilitation process is chondromalacia of the condyles of the femur and tibia.

The clinical results of simultaneous operations significantly exceeded the results of those patients who received conservative treatment for varicose veins, this fact requires further study.

### **References – Ədəbiyyat – Литература**

1. Jarit G.J., Bosco J.A. Meniscal Repair and Reconstruction. Bull NYU Hosp J Dis 2010; 68 (2): 84-90.
2. Johnson D., Park L.-S. Arthroscopic resection for the unstable inferior leaf of anterior horn in horizontal tear of a lateral meniscus. Arthroscopy // J. Arthroscop Rel Surg., 2004; 20 (6): 146-148.
3. Kim S.-J., Park I.-S. Arthroscopic resection for the unstable inferior leaf of anterior horn in the horizontal tear of a lateral meniscus. Arthroscopy // J. Arthroscop Rel Surg 2004, 20 (6), 146-148 /
4. Lee Ch.K., Suh J.T., Yoo Ch.I, Cho H.L. Arthroscopic all-inside repair techniques of lateral meniscus anterior horn tear, a technical note. Knee Surg Sports Traumatol Arthrosc 2007, 15, 1335 -1339
5. Patil S, McCauley JC, Pulido P, Colwell CW, Jr: How do knee implants perform past the second decade? Nineteen- to 25-year followup of the Press-fit Condylar design TKA. Clin Orthop Relat Res. 2015, 473:135-140. 10.1007/s11999-014-3792-6
6. Brodbeck WG, Anderson JM: Giant cell formation and function. Curr Opin Hematol. 2009, 16:53-57. 10.1097/MOH.0b013e32831ac52e
7. Tay KS, Lo NN, Yeo SJ, Chia SL, Tay DK, Chin PL: Revision total knee arthroplasty: causes and outcomes. Ann Acad Med Singapore, 2013, 42:178-183.
8. Hoppener M., Ettema H., Henny C. et al. // Low incidence of deep vein thrombosis after knee arthroscopy without thromboprophylaxis: A prospective cohort study of 335 patients // ActaOrthop., 2006; Oct; 77(5): 767-71.

## Резюме

# ДИАГНОСТИЧЕСКАЯ И ЛЕЧЕБНАЯ АРТРОСКОПИЯ ПРИ ОСТРЫХ ПОВРЕЖДЕНИЯХ КОЛЕННОГО СУСТАВА СОЧЕТАННОЙ С ВАРИКОЗНОЙ БОЛЕЗНЬЮ

<sup>1</sup>Сеидов И.И.

<sup>1</sup>Азербайджанский Государственный Институт Усовершенствования Врачей им. А.Алиева, кафедра травматологии и ортопедии, Баку, Азербайджан

С 2013 года выполнено 520 артроскопических операций по поводу повреждения коленного сустава. У 350 пациентов отдаленные результаты лечения отмечаются до 5 и более лет. Средний возраст пациентов составил 35 лет. У больных отмечались классические жалобы на боль, ограничение движений и чувство заклинивания в коленном суставе, а также на ограничение движений в поврежденном суставе. У 101 пациента повреждение колена сопровождалось варикозным расширением вен нижних конечностей, 35 пациентам выполнены симультанные операции, а остальная часть больных получила консервативное лечение варикозного расширения вен и хирургическое лечение повреждения коленного сустава. Оценка по шкале Лисхольма для пациентов с изолированными повреждениями мениска через 4-6 недель составила  $91 \pm 4,4$  балла, а для пациентов с хондромалицией – в среднем  $86,3 \pm 3,6$  балла. Клинические результаты симультанных операций значительно превышали результаты тех пациентов, которые получали консервативное лечение по поводу варикозной болезни, что требует дальнейшего изучения.

**Ключевые слова:** повреждение коленного сустава, варикозное расширение вен, сочетанные травмы, малоинвазивная хирургия коленного сустава.

## Xülasə

# DİZ OYNAQLARININ ZƏDƏLƏNMƏLƏRİNDƏ VƏ YANAŞI VARİKOZ XƏSTƏLİYİNDƏ DİAQNOSTİK VƏ MÜALİCƏVİ ARTROSKOPİYA

<sup>1</sup>Seidov İ.İ.

<sup>1</sup>Ə.Əliyev adına Azərbaycan Dövlət Həkimləri Təkmilləşdirmə İnstitutu, Travmatologiya və Ortopediya kafedrası, Bakı, Azərbaycan

2013-cü ildən bəri diz oynaqının zədələnməsi səbəbilə 520 artroskopik əməliyyat icra olunub. 350 xəstənin müalicə nəticələri 5 il və ya daha çox müddətə araşdırılıb. Xəstələrin orta yaşı 35 il idi. Xəstələr klassik olaraq ağrıdan, hərəkət məhdudluğundan, diz oynaqında ilişmə hissindən və yanaşı olaraq zədələnmən aşağı ətrafın funksiyasının pozulmasından şikayətlənirdilər. 101 xəstədə diz zədələnməsi ilə yanaşı aşağı ətrafların varikoz xəstəliyi ilə müşayiət olundu, 35 xəstəyə eyni zamanda simultan əməliyyat icra edildi, digər xəstələrdə varikoz xəstəliyi səbəbi ilə konservativ müalicə təyin olunmuşdur. 4-6 həftədən sonra təcrid olunmuş menisk zədələnməsi olan xəstələr

üçün Lysholm balı  $91\pm 4,4$  bal, chondromalaziya xəstələri üçün isə orta hesabla  $86,3\pm 3,6$  bal təşkil etmişdir. Simiultan əməliyyatların klinik nəticələri, varikoz damarları üçün konservativ müalicə almış xəstələrin nəticələrini əhəmiyyətli dərəcədə üstələdi, bu fakt daha ətraflı araşdırma tələb edir.

**Açar sözlər:** diz oynaqının zədələnməsi, varikoz xəstəliyi, müştərək zədələnmələr, diz oynaqının minimal invaziv cərrahiyyəsi.

*Redaksiyaya daxil olub: 25.06.2020*

*Çapa tövsiyə olunub: 14.07.2020*

*Rəyçi: dosent R.R.Səməd-zadə*