MORPHOLOGICAL CHARACTERISTICS OF MENISCI IN WOMEN AGED 39-59

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Abstract*. Knee joint diseases, including meniscus tears, are found in 3.13% of the world's population among women of all ages. Meniscopathy can occur with injury to one or both knees. This accounts for approximately 15-20% of knee osteoarthritis cases worldwide and is more common in women. The age-related development of many meniscopathies is most common in women aged 35-45 years. The main factors in its development are chronic injuries, physical activity, weight gain, environmental factors, infectious and hereditary factors. This type of disease is most common in the United States and European countries among people who engage in intensive physical labor and various sports. In the Russian Federation, the incidence of acute meniscopathy is 20-30 years old, 1.7-3.5%, while at 31-40 years old it is 10.7-15.3%, while at 41-50, these rates are 21%. These indicators are characterized by significant observability and frequent occurrence in the economically active population.*

Key words. *morphometric indicator, knee, women, diseases, surgery.*

39-59 YOSHDAGI AYOLLARDA MENISKLARNING MORFOLOGIK XUSUSIYATLARI

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Annotatsiya. Tizza bo‘g‘imlari kasalliklari, jumladan, menisk yorilishi, barcha yoshdagi ayollar orasida dunyo aholisining 3,13% da aniqlanadi. Meniskopatiya bir yoki ikkala tizzaning shikastlanishi bilan yuzaga kelishi mumkin. Bu butun dunyo bo'ylab tizza osteoartriti holatlarining taxminan 15-20 foizini tashkil qiladi va ayollarda ko‘proq uchraydi. Ko‘pgina meniskopatiyalarning yoshga doir rivojlanishi o'rtacha 35-45 yoshdagi ayollarda eng ko'p uchraydi. Uning rivojlanishidagi asosiy omillar surunkali shikastla nishlar, jismoniy faollik, vazn ortishi, atrof-muhit omillari, yuqumli va irsiy omillardir. Ushbu turdagi kasallik AQSh va Yevropa mamlakatlarida intensiv jismoniy mehnat va turli sport turlari bilan shug'ullanadigan shaxslar orasida eng ko'p uchraydi. Rossiya federatsiyasidav meniskopatiya bilan kasallanish ko’rsatkichi 20-30 yoshlilar o’rtasida, 1,7-3,5%ni tashkil etadi, 31-40 yoshda esa 10,7-15,3%ni tashkil etsa, 41-50yoshda ushbu ko’rsatkichlar 21% ni tashkil etadi. Bu ko’rsatkchilar sezilarli darajada kuzatilishi va ishtimoiy jixatdan mexnatga layoqatli qatlamda ko’p uchrashligi bilan xarakterlanadi.

Kalit so‘zlar. Morfometrik ko'rsatkich, tizza, ayollar, kasalliklar, jarrohlik.

МОРФОЛОГИЧЕСКИЕ ОСОБЕННОСТИ МЕНИСКОВ У ЖЕНЩИН В ВОЗРАСТЕ 39-59 ЛЕТ

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Аннотация. *Заболевания коленного сустава, в том числе разрыв мениска, выявляются у 3,13% населения мира среди женщин всех возрастов. Менископатия может возникнуть при травме одного или обоих колен. На его долю приходится около 15–20% случаев остеоартрита коленного сустава во всем мире, и он чаще встречается у женщин. Возрастное развитие большинства менископатий чаще всего встречается у женщин в возрасте от 35 до 45 лет. Основными факторами его развития являются хронические травмы, физическая активность, увеличение веса, факторы окружающей среды, инфекционные и наследственные факторы. Этот тип заболевания наиболее распространен среди людей, занимающихся интенсивным физическим трудом и различными видами спорта в США и странах Европы. В Российской Федерации показатель заболеваемости менископатией в возрасте 20-30 лет составляет 1,7-3,5%, в возрасте 31-40 лет-10,7-15,3%, в возрасте 41-50 лет эти показатели составляют 21%. Эти показатели характеризуются значительной наблюдаемостью и высокой частотой встречаемости среди трудоспособного населения.*

Ключевые слова. *Морфометрический показатель, колено, женщины, заболевания, хирургия.*

Ahead of time in most women of different reproductive ages in the world belonging to mexworthiness, the age change of mensicopathy morphological structure of knee joint menisci, depending on periodicity and duration, morphometric indicators have been studied and analyzed to specific guidelines criteria based on and a mathematical algorithm are expected to be developed. In histochemical studies of menisci, SHIFF positive structures are found in the meniscus such as tissue accumulation, mucoid swelling, and collagen fiber lysis changes, violation of the integrity of the meniscus tissue and too

many microdarz leads to the formation of protruding foci. As a result, menisci in women the essence of the main morphological substrates in age change, collagen with decay, destruction and defragmentation of fibers and Toga tissue characteristic signs that go with the continuation of the ongoing processes manifest. This is a clear criterion that precedes the age change in menciopathy Develop methodological recommendations for predictive and therapeutic tactics based on is the basis for. In our study, women aged 40-45 years have occurred in the meniscus we aimed to explore change. At this age, menisci are chronic as a result of the damage, the change in histioarchitectonics is mainly due to collagen continued with the development of fiber defragmentation and destruction, and it has been found to undergo mutilation from macroscopic hexate.

Purpose of the research: study of morphological characteristics of menisci in women aged 39-59.

Materials and methods: The study involved 123 tissue and ligament samples obtained during meniscectomy in the Traumatology and Orthopedics Department of the Khorezm Regional Multidisciplinary Medical Association. Paraffin blocks were prepared from the obtained materials, micron samples were cut according to the standard protocol and stained with hematoxylin and eosin. Morphological changes were analyzed. First, the medical history of the patients and biopsy protocols were analyzed. The frequency of meniscus injury in major cases was divided into the following age groups, including, according to the classification proposed by the WHO in 2016: Group 1-18-44 years 38 years old, group 2-45-59 years 54 years old, group 3 - 60-74 years 25 years old. Women may be more likely to suffer from meniscus injuries than men for several reasons: 1. The anatomical structure and biomechanics of the hip, knee, and ankle joints in women are unique. Women have a wider and less stable pelvis, so any sudden movements are transmitted to the knee joint, making it more susceptible to injury. 2. Hormonal changes. In women, especially during pregnancy, hormonal changes weaken the ligaments and muscles that hold the knee joint together, making the knee ligament more susceptible to injury. 3. Differences in the structure of soft tissues. Women are more prone to injury due to hypermobility of muscle-fibrous tissues and low elasticity of the knee joint. 4. Shoes. Women tend to wear high heels, which change the shape and weight distribution of the shoe, increasing the risk of knee and ankle injuries. 5. Physical activity. Certain physical activities and sports that are more common among women (e.g., gymnastics, yoga, dancing, sex, kneeling, and elbow-supported positions) may include movements and positions that increase the risk of knee injury. These factors together may explain why women are more likely to experience meniscal injury and its associated complications. The study collected samples from the Khorezm Regional Multidisciplinary Medical Institution. These samples mainly included women who underwent surgery between 2018 and 2023. Meniscectomy was performed on 123 patients. Copies of medical records were obtained for each patient. The following methods were used in the study: morphological, morphometric, histochemical, and analysis of clinical laboratory data. Hematoxylin and eosin staining and histochemical methods were used for morphological examination of the menisci. Clinical and morphological examinations, outpatient records, medical histories, and pathological reports were carefully reviewed for each case. The patient's passport data (address, full names of parents, age, occupation, patient's age, and other necessary information) were obtained from medical records. The outpatient records allowed us to reconstruct the medical history prior to hospitalization, as well as the treatment received.

Results: Currently, histological criteria for age doirmeniscus injury have been proposed by many authors, most of which are based on points, percentages, as well as overlapping morphofunctional indicators on quantitative and volumetric changes in a particular area. One of the most convenient evaluation criteria is the S. modified in 2000 and revised in 2012 Rodeo scale. Age-related morphological changes in the meniscus on this scale were analyzed microscopically, taking into account changes in the historical architecture, as well as changes in different areas of the meniscus. S.A. According to the modified morphological assessment criteria developed by Rodeo in 2000, each meniscus is assessed using a 6-point scale. In this case, the main criteria are as follows:

Based on cell density:

0 points - less than 50 cells per 1 mm^2 surface,

1 point - 50-300 cells per 1 mm^2 surface,

2 points-dividing 300 or more cells for every 1 mm2 surface.

By type of cells in the meniscus**:**

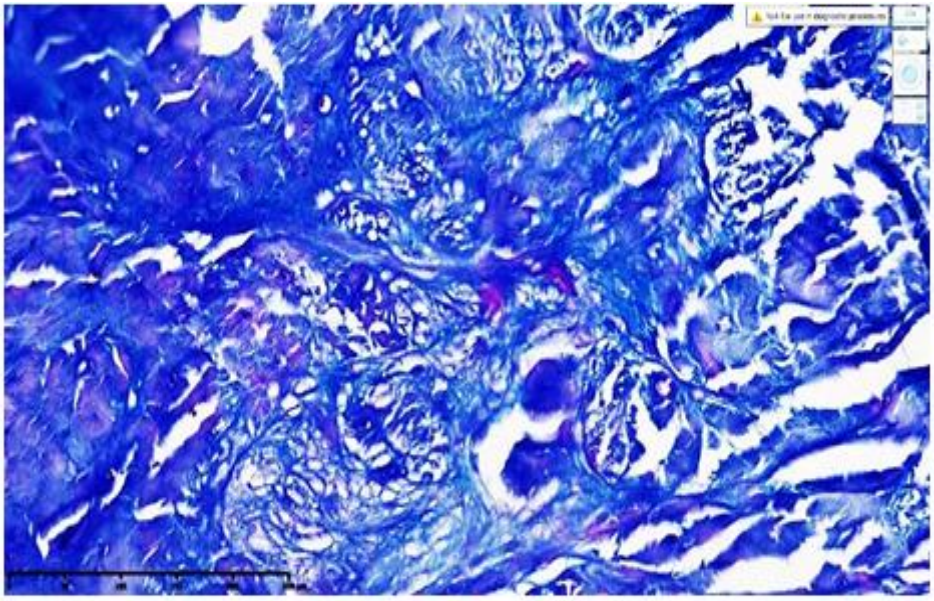
0 points-the presence of mononuclear cells, 1 point - fibroblasts (have a rod-shaped nucleus), 2 points - fibrochondrocytes (oval nuclei).

2. By collagen structure: 0 points - destruction of collagen fibers, foci of disorder, irregular arrangement of fibers, 1 point - collagen fiber bundles are located in one direction.

3. According to the cell matrix: 0 points - chondromucoid degeneration (presence of lacunae), 1 point - normal tissue (fibrous tissue).ue).

In areas 4-5 mm away from the medial branches of the meniscus, the medial part of the body and the meniscus periphery, the number of chondrocytes, focal thinning of collagen fibers and the presence of 270-300 cells on a 1 mm2 surface have not changed (it should be noted that this procedure was carried out without human intervention using the The error was 1.2% and all parametric parameters were obtained by counting intact cells), indicating that the amount of glycosaminoglycans in the extra-

cellular matrix was not reduced. In our 18–44-year-old group, the main changes were manifested only in the focal disorganization of collagen fibers in the medial branches of the meniscus and the medial body, and in the 39–44-year-old group, such changes were detected only in this group. This confirms that age-related changes in the knee meniscus occur primarily in the medial body of the meniscus, as confirmed by the aforementioned microimages. This indicates that the mesenchymal response is ongoing.



Picture 2. **A 61-year-old woman underwent meniscectomy. Massive SHIFF-positive structures were found at the periphery of the isogenic chondrocytes and collagen fibers in the meniscus. Focal hyperplasia of synoviocytes is observed in the areas of the menisci adjacent to the joint perimeter and the synovial membrane. Stain SHIFF. Size 10x10.**

This means that the increase in cell content with age-related changes in the meniscus and the presence of tissue cell infiltration along the perimeter, which is an important morphological substrate, are also of great importance for determining the age of the corpse from a forensic perspective. Therefore, taking into account the above-mentioned changes, the increase in the number of tissue cells, which is the main substrate for age-related in the meniscus, and the lesion factor of the meniscus, serve as the basis for practical recommendations for diagnosis and treatment. It should be noted that in practical medicine, if we consider that an increase in the number of cells within the joint leads to reactive arthritis, treatment is carried out by inducing apoptosis of these cells, which is the basis for recommending etiopathogenetic treatment. So, in conclusion, based on the aforementioned changes, the main age-related morphological changes in the knee meniscus in group 1 women aged 18-44 years are modified S.A. determined using the scale. The age group that scored 5 points and had the most injuries in the 2000 Rodeo competition was mostly 39-44 years old

Conclusion: 1. Depending on the number and structure of chondrocytes in the menisci, the age of the corpse should be can be detected.

3. In tissue components by histochemical examination of meniscs Sharp accumulation of Schiff positive structures, chondrolysis in the joint, astringent damage to the mensics caused by tissue desorganization the advantage was found to be high.

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