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Toshmatov Farxodjon Rustamovich

Fergana Institute of Public Health Medicine

PTHOGENESIS AND TREATMENT OF HALLUX VALGUS DISIASE

Annotation: Hallux valgus is a disease in which the first toe is deformed at the level of the metatarsophalangeal joint and deviates outward. Pathology is accompanied by progressive arthroarthritis of the first metatarsophalangeal joint. The disease develops gradually and usually worsens with age. It is manifested by pain when walking, night pain is possible. With severe deformity, there is a restriction of movement in the I metatarsophalangeal joint. The diagnosis is made on the basis of clinical signs and radiographic data. Treatment in the early stages is conservative and symptomatic. If there is a significant deformity, surgical correction is performed.

Key words: Hallux valgus , lies, bumb.

Hallux valgus – valgus deformity of the first toe in the metatarsophalangeal joint. Due to the deformation, the finger is deflected outward at an angle to the rest. The disease is widespread in traumatology and orthopedics, detected in women 10 times more often than in men. It is assumed that the reason for this difference is the weakness of the ligamentous apparatus in the fairer sex, as well as wearing uncomfortable narrow shoes with high heels. The pathology is widespread and is diagnosed in people of all ages.

The main reason for the development of Hallux valgus is usually a lack of connective tissue, which can manifest as transverse flat feet, excessive joint mobility, varicose veins, increased sprain of the ligaments, fascia and skin. A hereditary predisposition is detected – as a rule, in the next of kin of patients (mothers or grandmothers) there is also this deformity.
Other factors: high heels, walking in uncomfortable narrow, tight or short shoes – are secondary and only contribute to the formation of Hallux valgus. The second group of causes of pathology is congenital deformities of the feet, injuries, and some other pathologies. In particular, this group includes a number of diseases in which there is a violation of the nervous regulation of the muscles of the lower leg and foot (for example, polio).

Along with the weakness of the ligaments, uneven tension of the muscles leading and withdrawing the first finger, as well as a genetic tendency to form exostosis along the inner surface of the head of the first metatarsal bone, plays a certain role in the development of Hallux valgus. When deformity is formed, the disequilibrium in muscle tension is further aggravated, and the metatarsophalangeal joint becomes unstable.
The inner surface of the joint is constantly irritated by contact with shoes, as a result of which the displacement of the head of the First metatarsal bone is supplemented by the formation of a bone growth, which further aggravates the deformation. Due to the change in the shape of the foot, the load is redistributed – the area of the heads of the III and II metatarsal bones is constantly overloaded during walking. This leads to pain and the formation of osteoarthritis not only in the area of I, but also in the area of II and III metatarsophalangeal joints.
Classification
The degree of severity of the pathology is determined taking into account two values: the angle between the II and I metatarsal bones (Intermetatarsal angle) and the angle at which the I finger is deflected in relation to the I metatarsal bone (Hallux valgus angle). Hallux valgus degrees:

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- 1 degree – the angle between the metatarsal bones is less than 12 degrees, the angle of deviation of the I finger is less than 25 degrees.
- 2 degree-the angle varies from 12 to 18 degrees, I finger deviates by more than 25 degrees.
- 3 degree-the angle between the metatarsal bones is more than 18 degrees, the angle of deviation of the first finger reaches more than 35 degrees.

Symptoms of Hallux valgus

Patients complain of pain in the area of the first metatarsophalangeal joint. The pain increases after prolonged walking or standing and decreases at rest. Nocturnal pain is possible, especially after a significant load on the foot. The pain syndrome can vary significantly both in nature and in intensity – from a feeling of discomfort (usually in the early stages) to a sharp burning or constant aching pain.

The severity of pain does not always clearly correlate with the severity of osteoarthritis and the size of deformity, although with a significant displacement of the head of the first metatarsal bone, the symptoms are usually more pronounced. As the deformity develops, the foot loses its normal shape more and more, expands and flattens, the I finger "lies" on the II, and often there are concomitant deformities of the II finger (hammer-shaped finger).

All of the above in combination with the" bump " in the projection of the First metatarsophalangeal joint significantly affects the appearance of the foot. Therefore, along with pain, patients with Hallux valgus often turn to orthopedic surgeons due to a cosmetic defect and problems with the selection of shoes. Especially often such complaints are made by young women.

Diagnostics

The diagnosis of Hallux valgus is made by an orthopedic traumatologist. When establishing a diagnosis and determining the severity of the pathology, the specialist focuses on the data of an external examination and the results of visualization techniques. The following research methods are used:

- External inspection. The foot is flattened. Visible deformity and slight or moderate hyperemia in the projection of the first metatarsophalangeal joint are detected. The first finger is deflected outward at an angle to the rest. Palpation is painless or not sharply painful, bone exostosis and skin compaction are determined on the inner surface of the I metatarsophalangeal joint. Movement is usually limited, and pain may occur when the I-finger is extended as far as possible.
- Radiography of the foot. It is the main diagnostic method for Hallux valgus. The radiologist makes special measurements, on the basis of which he determines the degree of pathology. Along with the degree of deformity, when studying X-rays, the severity of arthrotic changes is evaluated. The presence of osteoarthritis is indicated by narrowing of the joint gap, deformity of the joint site, marginal growths and osteosclerosis of the subchondral zone.
- Tomography. It is used in some cases. If it is necessary to detail the listed changes, the patient is referred to a CT scan of the foot. According to indications, an MRI of the foot is prescribed for soft tissue examination.

Conservative therapy

The disease cannot be eliminated without surgery. However, conservative treatment is recommended in the early stages of the disease in young patients, as well as in any degree of deformity in senile or elderly age. The main goals are to eliminate the pain syndrome and prevent the progression of the disease. Treatment is carried out in an outpatient setting. For pain, anti-inflammatory and warming ointments are used. During remission, apply:

- inductothermy;
- ozokerite;
- hydrocortisone phonophoresis;
- electrophoresis with novocaine or trimecaine.

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If there are signs of inflammation, the patient is referred to UHF or magnetic therapy. Patients are advised to reduce their weight (if they are overweight). It is necessary to optimize the load: perform a set of exercises to strengthen the ligaments and muscles of the foot, if possible, exclude long standing and walking. It is necessary to use special orthopedic shoes and inserts to eliminate excessive pressure on the area of the I metatarsophalangeal joint and prevent further hallux valgus deviation of the I finger.

Hallux valgus surgical treatment

If conservative therapy is ineffective, surgical treatment performed in a hospital setting is indicated. There are about 300 options for Hallux valgus operations. All methods can be divided into 3 groups:

- On soft tissues. They are effective only for the first degree of deformation. It is possible to use the Silver technique, in which the tendon of the adductor muscle of the I finger is cut off, or the McBride operation, in which this tendon is moved. The goal of treatment is to restore the uniformity of traction of the adductor and abductor muscles.
- On bone and soft tissue structures. Often, these surgical operations are performed in combination with excision of the bone growth and subcutaneous mucosa of the bag in the area of the First metatarsophalangeal joint (Shede operation).
- On the bones. In the treatment of grade II and III Hallux valgus, the choice is made between two methods: chevron and Scarf osteotomy. In chevron osteotomy, a small V-shaped fragment is removed in the distal part of the first metatarsal bone. In Scarf osteotomy, a Z-shaped incision (cut) is made along almost the entire length of the I metatarsal bone, and then the fragments are "shifted" in order to eliminate the angle between the I and the rest of the metatarsal bones. Fragments are fixed with screws.

Rehabilitation services

In the postoperative period, the patient is immediately allowed to load the leg in a special orthosis, which is mandatory for wearing for 6 weeks. During this period, it is recommended to keep the leg in an elevated position more often and avoid overloading. In the future, you should wear wide shoes, perform a special complex of physical therapy and perform self-massage of the arch of the foot using a tennis ball.

Forecast

The prognosis is determined by the stage of the disease. With minor deformity and the absence of pronounced arthrotic changes, conservative therapy and compliance with medical recommendations can eliminate the pain syndrome and significantly slow down the development of the disease. In the late stages, these measures are ineffective, but the operation provides a good functional and cosmetic result. If the doctor's recommendations are not followed in the long-term period after the intervention, relapses may occur.

Prevention

Preventive measures include choosing comfortable shoes, reducing periods of standing and long walking. People who have a predisposition to this disease (identified transverse flat feet, the presence of Hallux valgus in their closest relatives) should use orthopedic insoles, abandon high-heeled shoes, and perform special sets of exercises.

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