

TREATMENT PATIENTS WITH ANKLE JOINT INJURY (LITERATURE REVIEW)

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One of the most frequent pathologies in the practice of a traumatologist-orthopedist is damage to the ankle joint (AJ), accounting for up to 20% of damage to the musculoskeletal system. According to Statistically, the occurrence of ankle fractures averages 100-120 cases per 200 thousand people per year. From 54.1 to 84.6%, ankle fractures with a rupture of the ITS occur in young and able-bodied people. Despite the fact that modern traumatology has a large arsenal of methods for treating patients with ankle fractures accompanied by rupture of the inter-tibial syndesmosis (ITS), among the outcomes of treatment of this category of patients from 3.0 to 53.7% there are contractures of the ankle joint, incorrectly fused ankle fractures, false joints, long-standing subluxations of the talus bone with diastasis between the tibia in the area ITS, deforming arthrosis of the damaged AJ.

To form a clear approach to treatment, all fractures of the ankle joint are divided into stable and unstable. The ankle fork is conventionally taken for a ring consisting of three bones and ligaments connecting them. Since these ligaments are practically inextensible, a single ring injury, for example, an isolated fracture of the outer ankle, which accounts for up to 85% of ankle fractures, cannot lead to an anteroposterior or lateral displacement of the talus bone and is thus stable.

According to a number of authors, damage to the ring in in two places, which can be represented by either a fracture of both ankles, or a fracture of one ankle and a rupture of one of the ligament groups, is unstable and accounts for 15% of ankle fractures. The above-mentioned scientists also include all two- and three-ankle fractures in this group, taking into account that ligament damage is the equivalent (often more severe) of an ankle fracture.

In the conservative treatment of patients with ankle fractures accompanied by rupture of the ITS, unsatisfactory results occur from 6.6 to 23.4% of cases. This is due to the fact that after a closed manual reposition of ankle fragments and their external fixation with plaster or polymer bandages, the displacement of fragments and diastasis between the tibia in the ITS area often persists.

K.V. Shevyrev (2004) notes that of all patients with ankle fractures treated conservatively and in need of reconstructive surgery in the area of AJ, 58% of patients had a history of fractures ankles with rupture of interbertial syndesmosis. The frequency of unsatisfactory results after surgical treatment of ankle fractures with ITS rupture ranges from 4.8 to 19.3% of cases. Fixation of syndesmosis with "rigid" or "elastic" submersible structures that hold the tibia together in the ITS area often leads to a strong compression of the talus block between the tibia bones, which restricts the movement of the talus bone in the "fork" of the AJ, provokes the development of osteoarthritis in the damaged AJ and pain syndrome.

Domestic and foreign authors believe that after surgical treatment of ankle fractures with rupture of the ITS from 24 to 52% of cases of diastasis between the tibia

in the ITS cannot be eliminated, the need for repeated surgery occurs from 2.1 to 20% of cases.

An analysis of the frequency of people recognized as disabled for the first time after ankle fractures showed that patients with ITS rupture occupy a dominant place among them, ranging from 3.1 to 36.7%.

The variety of injuries in the ankle area has led to the creation of many classifications. Modern classifications of ankle fractures can be divided into three main groups.

1. Classifications based on anatomical signs of injuries in the ankle joint. There are single-ankle fractures (fracture of the inner or outer ankle), two-ankle and three-ankle.

2. Classifications based on the mechanism of injury. There are ankle fractures of abduction (pronation), adduction (supination) and rotational (eversion and inversion). A common disadvantage of classifications based on the mechanism of injury is the misinterpretation of terms characterizing the movement of the foot and the inability to determine the tactics of treatment.

3. Classifications based on the severity of the fracture. These classifications take into account the level of fibular fracture and the stability of the ankle joint.

A retrospective analysis of the literature available to us shows that the study of ITS injuries complicating the course of ankle fractures is one of the most important issues in the diagnosis and treatment of AJ fractures. Evidence of this is the creation by various authors of classifications of ITS damage.

Thus, J.G. Bonnin (1952) noted that the severity of ITS ligament damage depends on the number of damaged syndesmosis ligaments. At the first degree, there was a rupture of the anterior interbertial ligament. The second degree was characterized by rupture of any two syndesmosis ligaments. The rupture of all the ligaments of the ITS referred to third degree.

P.V. Mishko (1971) distinguished two groups of ITS injuries: complete and incomplete (partial). According to the author, complete injuries occur when

all the ligaments of the ITS and the distal part of the interosseous membrane are torn, manifested by the divergence of the tibia. Partial – rupture of one anterior or anterior and partially posterior ligament of the ITS, while maintaining the integrity of the interosseous membrane.

I.L. Krupko, Yu.I. Glebova (1972) note that with damage to the anterior or posterior tibial ligament and the divergence of the tibia bones up to 1 cm, the rupture ITS refers to partial. When all ligaments are torn ITS and divergence of the tibial "fork" more than 1 cm damage to syndesmosis is considered complete.

K. Primov (1978) divides ITS injuries into three degrees: 1st and 2nd degree – partial damage, 3rd degree the author refers to complete damage. In case of damage to the anterior and posterior intercostal ligament, the injury is attributed to the 1st degree. Grade 2 – damage to the anterior and posterior intercostal ligament with partial rupture of the interosseous ligament. With complete damage (grade 3), damage to all ligaments of the ITS is noted.

S.N. Khoroshkov (2006) notes that the nature of ITS damage in ankle fractures may be ligamentous, bone-ligamentous and bony. In our work, we applied the AO/ASIF classification, adopted by the SICOT Congress in Montreal in 1990 as an international one. Three types of ankle fractures are marked with the letters A, B, C: each type is

divided into three groups. Each group is divided into three subgroups, marked with numbers 1, 2, 3. The classification of ankle fractures is compiled in order of increasing fracture severity, difficulty of treatment, prognosis. Ankle fractures with a rupture of the ITS are classified as type C.

Surgical treatment. Currently, the priority method of treating ankle fractures with a rupture of the ITS is operative. For osteosynthesis of fractures in the ankle joint, a large number of metal fixers of various designs have been developed and introduced into practical healthcare. According to Russian researchers, the frequency of surgical treatment of ankle fractures with a rupture of the ITS ranges from 39.1 to 63.1% of patients.

R.S. Titov (2008) recommends using a wire loop to increase the strength of fixation during osteosynthesis of a medial ankle fracture with spokes.

M. Gris et al. (2005) used "U"-shaped steel braces for osteosynthesis of a medial ankle fracture.

In the issue of treatment of deltoid ligament injury, there are works in the literature that reflect diametrically opposite opinions. Thus, according to, the rupture of the deltoid ligament does not require surgical repair, unless the damaged ligament has been interposed into the medial articular gap of the AJ.

A.A. Radzhabov, S.A. Baymagambetov (2006) consider the restoration of the damaged deltoid ligament to be an obligatory stage of the operative manual.

A.B. Kazantsev et al. (2008), P.P. Chekeres (2010) in the course of a clinical study revealed a significant deterioration in the outcomes of surgical treatment in a group of patients for whom the suture of the deltoid ligament was not performed.

For fixation of suprasyndesmous fractures of the fibula in fractures of the ankles with rupture ITS in most cases, bone osteosynthesis with plates is used.

Most researchers have an open reposition and osteosynthesis of a suprasyndesmous fracture of the fibula in the upper third is not recommended because of the danger of intraoperative damage to the fibular nerve and the risk of its involvement in the postoperative scar. Stabilization of the "fork" of the AJ in this case is achieved only by introducing a positional screw at the ITS level.

The absence of a unified technique of osteosynthesis with a bolt, errors and complications arising during treatment lead to the fact that when stabilizing the ITS with a screw, good results were obtained only in 49.1% of patients.

Stabilization of the ITS with dacron tape avoids repeated surgery to remove the retainer. This technique was used by V.I. Vedenov (1974). Lavsan tape was carried out through two channels formed in both bones of the lower leg and fixed on the tibia. The disadvantage of the proposed methodology was the need for mandatory revision ITS and the possibility of the reaction of local tissues to dacron.

M.S. Kuvin (2002) used dacron threads woven with a "pigtail" to stabilize the ITS. With a drill in the fibula and tibia, three channels are formed through which a dacron "pigtail" is held, fixed with biopolymer studs. Elimination of interbortal diastasis was carried out with the help of the author's interbortal syndesmosis reponator performed over the ITS.

In recent years, in the surgical treatment of ankle fractures with a rupture of the ITS, stabilization of the ITS with a positional screw has become widespread. As a

positional screw, some authors use a cortical screw with a diameter of 3.5 mm, others – 4.5 mm.

The accumulated extensive experience in the use of compression-distraction devices using spokes shows that this method has a number of significant advantages. However, some authors, emphasizing the positive aspects and high efficiency of the devices, point to complications as a result of using this method. In particular, when studying the results of treatment of patients with fractures in the ankle joint, the scientist identified the following types of complications associated with the use of spokes: skin cutting at the entrance and inflammation of the soft tissues around the long spokes associated with the formation of a channel around their entry and exit points, which serve as a gateway for microbial contamination.

The percentage of such complications, according to the Kurgan Research Institute of Experimental and Clinical Orthopedics and Traumatology, was noted in 29.1% of patients. At the same time, suppuration of soft tissues in the area of the spokes was noted in 13.6–21.3% of cases. Osteomyelitis in the spokes is also 2.7–6.4% of cases, bleeding from wound channels around the spokes is observed in 3.5–4 % cases, as well as pain syndrome, persistent edema, pathology of internal organs, developing as a result of damage to nerves and their receptors. Some authors associate these complications with damage and irritation of biologically active points.

Despite the achievements of medical science in recent decades, the introduction of various new technologies into traumatology, patients with ankle fractures with a rupture of the MBS often have unsatisfactory treatment results, which often leads to their disability. This causes significant economic damage caused by society, determines the medical and social relevance of this problem.

LITERATURE:

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