ISSN: 2640-4133

Research Article

Advances in Bioengineering & Biomedical Science Research

Primary Vnutrikostnyj Osteosynthesis Diaphysis of Tibia Counter Pins

Shaposhnikov Veniamin Ivanovich

Professor, Vice Rector, Department of Surgical Diseases, Noncommercial Educational Private Institution of Higher Education, Kuban Medical Institute, Krasnodar, Russia

***Corresponding author**

Shaposhnikov Veniamin Ivanovich, Professor, Vice Rector, Department of Surgical Diseases, Noncommercial Educational Private Institution of Higher Education, Kuban Medical Institute, Krasnodar, Russia, E-mail: Shaposhnikov35@mail.ru

Submitted: 13 Feb 2019; **Accepted**: 20 Feb 2019; **Published**: 27 Feb 2019

Abstract

The author developed and introduced into clinical practice method intraosseous osteosynthesis counter pins diaphysis of long bones. He applied his 185 victims with fractures of the diaphysis of tibia. Of these, 101 (54.6%) operation was a primary character, is performed during the first 6:00 since the injury, with 50 (27%) It was open. The method resulted in complete stillness fragments while maintaining joint mobility of a limb. Describes monitoring almost complete detachment of the tibia, which managed to restore its function.

Keywords: Vnutrikostnyj, Vstrechnonapravlennyj, Osteosynthesis, Stability

The Purpose of the Study

To demonstrate the advantages of back-to-back directional intraosseous osteosynthesis of bone diaphysis of long bones before other ways sustainable reposition of bone fragments.

Introduction

Vnutrikostnyj osteosynthesis is one of the common ways of fragment fixation of long tubular bones. With this method the rod immersed inside the bone fragments. However, the usual technique of this operation, in order to achieve stability fragments cannot, and the seams want complete immobility [1,2]. For this reason, traumatologists forced to resort to additional external extremity fixation bandages to complete fracture splicing that causes the patient discomfort, and sometimes develop a false joint [3-5]. Diafizarnye fractures of the tibia tend to have a negative medical feature, i.e. when they happen with small interpoziciej fragment offset bone fragments and soft tissues. This calls for open their reposition. Furthermore, these fractures are often open-ended nature that requires the audit of wounds with foreign body's removal, excision of non-viable tissue and stop bleeding, while the area of overlapping joints should have permanent access to a visual inspection, to prevent and promptly recognize the complication. Taking into account these requirements for operations, we have developed a method of intraosseous osteosynthesis counter pins which can be metal, plastic, so that it is directly related to scientific and technical progress. It allows you to obtain complete immobility of fragments and thereby relieves patients from having worn plaster bandages. They have retained the full mobility of joints, and extremity it prevents the development of stiffness in them [6].

Material and Methods

185 have affected with fractures of the diaphysis of tibia was applied method of intraosseous osteosynthesis counter pins. Of these, 101 (54.6%) operation was a primary character, is performed during the first 6:00 from the date of receipt of the patient injuries, with 50 (27%) She wore an open nature. Of the 185 patients from 59 (31.8%) was polytrauma. The age of the victims was from 16 to 64 years. Method to achieve full stability fragments while maintaining joint mobility of a limb. This is achieved as follows. When you turn the choice of approach to fracture zone was defined in advance, only required a thorough treatment of the wound. With the same turn, the question only after x-rays on a damaged Shin. If offset bone fragments were observed, or their reduction was achieved through closed, and metal osteosynthesis produced closed by. For this did two cut lengths 1.0 -1.5 cm one in the area of this tuberoses bone and the second in the area of the medial her ankles. Through these incisions fat Shiloh did channels towards fracture. Then through each of them in the noon the channel in the opposite direction injected steel structures-tuberoses bone pin Kjunchera through and through the medial ankle-Bogdanov Figure 1 (a, b). In Figure 2 is represented by radiograph finished oncoming osteosynthesis.

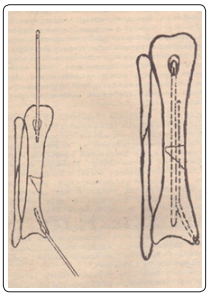

Figure 1 (a, b)

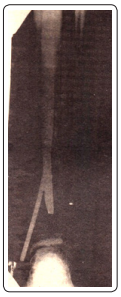

Figure 2

Vstrechnonapravlennogo schema osteosynthesis:
Figure 1: a) start synthesis, b) end of the osteosynthesis
Figure 2: Radiograph finished oncoming osteosynthesis

Of particular interest is the observation in which this method was applied in an open fracture of both bones of left shin at the level of its middle third with the loss of a large fragment of tibia and posterior tibia artery ruptured and deep man tibia. Let me bring this observation. In 45 years, has been woman's Office. Her left leg was zamotana the sheets. Injury she got 15-20 minutes ago at the gate of his own House-when the street was knocked down by a motorcyclist. First aid provided to her husband who was wrapped in sheets injured Shin, picked up from the Earth freely lying bone fragment, and personal transport brought his wife to the hospital. Visual examination of the injured tibia showed, that her lower and middle thirds of the heavily deformed due to the shortening of the limb and foot lateral in the reversal of rotational direction. On the front of its surface had a laceration the size of 8 x 4 cm, of which survived the end of the proximal fragment. Delivered the same bone fragment was a circular segment tibia length of 8-9 cm, at the same time he was abundantly dirty Earth and debris. The stop was pale and cold to the touch. The wound lightly bleeding.

The injured was taken urgently to the operating room. Started a general anesthesia. Urgent wound revision was required to develop treatment algorithm. The first time her surgical treatment, except fracture of both bones, revealed the gap back tibia artery and deep veins of tibia and tibia nerve skeletizirovan. Clearance end artery was covered by a blood clot. Given that it is only from the date of injury 20-25 minutes, it was decided to try to save the leg. Without going into the details of the operation, will describe only the most important of its details. You must first complete a sustainable immobility fragments, because without it the seam artery has been doing is pointless. Was careful with the free fragment of bone removal of soil residues of the periosteum and the bone marrow. Then carried out his abundant lavage in 0.02% chlorhexidine solution (up to 2 liters consumed this antiseptic) and then in a concentrated solution of penicillin (12 mil in 100 ml of saline). Following this, through bone pin Kjunchera entered tuberoses. Once the end appeared in the lumen of the upper fragment of tibia, he wore a loose bone fragment. Then through the medial ankle was put nail Bogdanova. When it appeared in kostnomozgovom channel nadlodyzhechnoj zone, he was inserted into the gutter pin Kjunchera. Immediately was skolachivanie between bone fragments of the bone. Thus was made a steady metal osteosynthesis of the tibia. This allowed overlay vascular seam on back bolshebercovuju artery. Stop immediately warmed, but emerged bleeding from deep veins of the legs and had to wrap. Following this, carried out an open reduction of fibula fracture, but without fixing pins. The audit showed that the anterior tibia artery and fibular nerve do not have signs of damage. The tibia nerve perinevrij stitches, while the visible gap fibers were not. Tibia was covered offset soft tissue. At the wound edges imposed rare seams, between which are inserted rubber strips. The wound was covered with massive vlazhnovysyhajushhej bandage which changed 2-3 times a day. As an antiseptic has been used 0.02% chlorhexidine solution mixed with 1.5% solution of table salt. Such dressings continuously used 9 days (not yet eliminated the threat of gas gangrene). Along with the treatment described the patient carried out the usual anti-inflammatory and correcting medical therapy. Despite all the medical complexity, extremity patient managed to save.

Results

185 victims died 2 (1.08%). they both (men aged 34 and 49 years) was an open-fractures polytrauma tibia, one was a bruised brain, and another gap liver. Osteosynthesis, including in polytrauma, not increased the risk of developing all sorts of complications, but rather their reduced because strong fixation of fragments was crucial in a favorable outcome of treatment. This factor can be traced in a favorable outcome of treatment described observations.

Discussion

Counter metal osteosynthesis already embedded in clinical practice. It is characterized not only by the simplicity of execution and reliability achieves that goal-resistant fragment fixation without applying plaster bandages. Immobility of bone fragments contributes to the formation of calluses and prevents the formation of a false joint. Converted the same observation shows that you can save the finality, seemingly hopeless situation. Stable osteosynthesis allowed this woman execute stitch back tibia artery, and then other manipulations that are aimed at preserving a limb. Its positive role and application of vlazhnovysyhajushhej dressing. Constant external hypertensive osmotic Wednesday around the wound, did not allow microbial flora grow in the wound cavity, as occurred outflow of active protein detritus. Active same antiseptic made this Wednesday a sterile. All this contributed to the fact that local defenses were able to deepen and normalize homeostasis.

Conclusion

Primary osteosynthesis vnutrikostnyj counter pins allows you to perform the primary task that occurs before the emergency services is to create an early stand fixing bone fragments without plaster bandages. Free access to all injured tissues greatly simplifies their sanitization. Enables them to carry out visual inspection and correction of the inflammatory process. It can be used in all hospitals.

References

1. Blazhenko AN, Kvartej Rafael, Blazhenko AA (2005) Analysis treatment with concomitant injury. Kuban scientific medical bulletin 32-34.
2. Oghannisyan OV, Dabaghyan SS (2003) Chronic Treatment of diaphyseal fractures of tibia bone using upgraded machines to reposition and fixation of bone fragments. Kuban scientific medical bulletin 111-113.
3. Lebedev AA, ShpakovVV (1988) Vnutrikostnyj metal osteosynthesis in treatment of polytrauma and multiple diaphyseal fractures of femur and tibia//materials of the V Congress of traumatologists orthopedists of the USSR. Moscow 11-112.
4. Ochotzkii VP, Suvaljan TF (1988) Extramedullary osteosynthesis massive metal pins//Moscow 126.
5. Simon RR (1998) Emergency orthopedics. Moscow 211.
6. Shaposhnikov VI, Shaposhnikov OV (1993) Metallo osteosynthesis counter pins//library practitioner-Krasnodar 44.