

PREVENTION OF POSTOPERATIVE RELAPSES OF TRAUMATIC PURULENT OSTEOMYELITIS WITH THE USE OF BENZOIN OINTMENT AND LYMPHOTROPIC ANTIBIOTIC IMMUNOTHERAPY

*Candidate of Medical Sciences, Associate professor **Tukhtaev J.T.**,
Master of the 3rd course **Nematov N.Q.**
Andijan State Medical Institute*

The work is based on a comprehensive analysis of data on 84 victims with chronic traumatic purulent osteomyelitis. In the control group (51.2%), local treatment with conventional drugs and traditional methods of antibiotic therapy were performed. In the main group (47.8%), in order to prepare soft tissues for surgery and in the postoperative period, a hydrophilic benzoin ointment was used in the first phase of the wound process, as well as lymphotropic administration of antibiotics and immunomodulators in the postoperative period. When studying the immediate results, the total proportion of purulent wounds and fistulas in the main group was 19.5%, in the control group – 30.2%. In a detailed analysis of the treatment results, it was found that the use of reconstructive and reconstructive operations in combination with the use of the proposed system of pre- and postoperative complex treatment, the frequency of recurrence of the process is 4.4 times less than in the control group (7.1% and 1.6%, respectively), while when performing conventional sequestral necrectomy, this indicator in the compared There was no statistically significant difference between the groups (42.9% and 47.6%, respectively).

Keywords: chronic traumatic purulent osteomyelitis, benzoin ointment, lymphotropic antibiotic immunotherapy.

ПРОФИЛАКТИКА ПОСЛЕОПЕРАЦИОННЫХ РЕЦИДИВОВ ТРАВМАТИЧЕСКОГО ГНОЙНОГО ОСТЕОМИЕЛИТА С ПРИМЕНЕНИЕМ БЕНЗОЙНОЙ МАЗИ И ЛИМФОТРОПНОЙ АНТИБИОТИКО ИММУНОТЕРАПИИ

*к.м.н., доцент **Тухтаев Ж.Т.**,
магистр 3го курса **Нематов Н.К.**
Андижанский Государственный Медицинский Институт*

Работа основана на комплексном анализе данных о 84 пострадавших с хроническим травматическим гнойным остеомиелитом. В контрольной группе (51,2%) проведены местное лечение общепринятыми препаратами и традиционные методы антибиотикотерапии. В основной группе (47,8%) с целью подготовки мягких тканей к операции и в послеоперационном периоде в первой

фазе раневого процесса применили бензойную мазь на гидрофильной основе, а также лимфотропное введение антибиотиков и иммуномодуляторов в послеоперационном периоде. При изучении ближайших результатов суммарный удельный вес гнойной раны и свища в основной группе составил 19,5%, в контрольной – 30,2%. При детальном анализе результатов лечения установлено, что применение реконструктивно-восстановительных операций в сочетании с применением предложенной системы пред- и послеоперационного комплексного лечения частота рецидива процесса в 4,4 раза меньше, чем в контрольной группе (соответственно 7,1% и 1,6%), в то время как при выполнении обычной секвестрнекрэктомии этот показатель в сравниваемых группах статистически достоверно не отличался (соответственно 42,9% и 47,6%).

Ключевые слова: хронический травматический гнойный остеомиелит, бензойная мазь, лимфотропная антибиотикоиммунотерапия.

Relevance. The problem of chronic osteomyelitis by its medical, economic, social and psychological significance still occupies a leading place in traumatology. According to the literature, in the postoperative period, secondary healing occurs up to 16.1%, purulent wounds occur up to 16.1% and fistulas occur up to 13.8%, and in the long-term period, relapses of the disease develop from 22.0% to 68.3%. Non-radicality of operations, imperfection of plastic replacement methods are considered as the reasons for the high proportion of relapses of the process postoperative bone defects and ineffectiveness of methods of pre- and postoperative treatment. Based on the above, the search for ways to improve the results of complex treatment of chronic osteomyelitis is one of the urgent tasks of practical healthcare.

The purpose of the study. Improving the results of complex treatment of chronic traumatic osteomyelitis by topical application of benzoin ointment, lymphotropic antibiotic immunotherapy and radical surgical approaches.

Material and methods. The work is based on the analysis of data of 84 patients with exacerbations of chronic osteomyelitis who were in 2012-2022 for treatment in the trauma and orthopedic department Andijan Regional Hospital. There were 69 men (82.1%), 15 women (17.9%). The age of the patients ranged from 15 to 75 years. The most common pathological process was localized on the thigh (38.1%), lower leg (26.2%) and foot (17.9%). In 2 (2.4%) patients, there was a lesion of two segments, in the rest - the process was localized on the shoulder (5.9%), forearm (5.9%) and hand (3.6%). When assessing the severity of the patients' condition according to the Humanenko scale, 26 (31.0%) patients were admitted in a satisfactory condition, 53 (63.1%) in a moderate condition and 5 (5.9%) patients in a serious condition.

Depending on the method of treatment, the patients were divided into two groups. In the control group, 43 (51.2%) patients in the postoperative period received antibiotic therapy using traditional methods. In the main group, 41 (48.8%) patients were treated

with an optimized complex treatment regimen for exacerbations of chronic osteomyelitis. In the main group, lymphotropic antibiotic immunotherapy was resorted to, as well as in order to prepare soft tissues for surgery and in the postoperative period, a hydrophilic benzoin ointment was used in the first phase of the wound process according to the list of A.N.Kakharov (benzoic acid - 10.0; anesthetic - 3.0; polyethylene glycol - up to 100.0). Benzoin ointment was injected into the fistula passages, applied to the wound, as well as through drainage tubes into the wound in the postoperative period.

Long-term results for a period of one to 5 years were studied in 75 (89.3%) patients. In the absence of clinical and radiological signs of osteomyelitis exacerbations and with functional fitness of the limb, the result was assessed as "good", in the absence of clinical and radiological signs of osteomyelitis and the presence of moderate functional disorders - as "satisfactory", in the presence of clinical and radiological signs of osteomyelitis, regardless of the functional result - as "unsatisfactory".

In addition to clinical and radiological examination and generally accepted laboratory parameters, the dynamics of microflora, the degree of endotoxemia and immunological parameters were studied.

Results and their discussion. During clinical examination, 21 (25.0%) patients had

a long-term (more than 10 years) the manifestation of the disease. In 18 (21.4%) cases, a false joint was detected, in 6 (7.1%) – purulent arthritis, in 32 (38.1%) – eczema, in 100.0% - edema and hyperemia, in 39 (46.4%) -scarring and in 19 (22.6%) cases – ulcerative skin defect. Generalization of the process (sepsis) was established in 3 (3.6%) cases due to late treatment of patients. Anemia (78.6%), leukocytosis (96.4%), acceleration of ESR were most often detected in the blood (100.0%), leucoformula shift to the left (61.9%). In the urine protein (39.3%), hypo- or isostenuria were determined (14.3%), and other changes.

X-ray examination revealed the presence of purulent cavities in 92.9% of patients, sequestration – in 76.2%, rarefaction zones – in 60.7%, sclerosis – in 54.8%, narrowing of the medullary canal– in 39.3%, bone thickening – in 32.1%, periostitis -in 10.7%. The pathological process in 31.0% of patients was limited, in 35.7% - marginal, in 29.6% -extensive and in 3.5% - total. At 30.9% patients showed signs of impaired fracture consolidation, including a weakly consolidating fracture (9.5%), a false joint (7.2%) and a bone defect (14.2%). Arthritis and ankylosis were found in adjacent joints in 23.8% of patients.

All patients underwent surgical treatment.

In the main group, traditional sequestrectomy was performed only in 19.5% of patients, and in a radical version. In the remaining 80.5% of patients, it was combined with various radical reconstructive operations: myoplasty, autoplasty (8),

alloplasty (2), segmental resection with monolocal (6) and bilocal (9) Ilizarov osteosynthesis. The proportion of sequestral necrectomy in the control group was 51.2%, reconstructive operations – 48.8%. Based on the results after a retrospective analysis of previous operations in other medical institutions and patients of the control group, we believe that sequestral necrectomy, with the exception of the marginal location of the process in the bone, should be performed exclusively in a radical version, and this provision should equally concern both soft tissues and bone.

In the immediate postoperative period, regression of general and local symptoms in the main group occurred on 6.5 ± 1.1 days, in the control group – on 8.9 ± 1.3 days after surgery. In the main group, the proportion of primary and secondary wound healing was statistically significantly higher (56.1% and 24.1%, respectively) than in the control group (41.9% and 27.9%, respectively), i.e. the risk of reinfection was lower. The total proportion of purulent wounds and fistulas in the main group was 19.5%, in the control group – 30.2%.

In the main group, good and satisfactory the results were established respectively in 54.3% and 31.4% of patients, in the control group - 30.0% and 42.5%, respectively. The proportion of unsatisfactory outcomes in the main group was 13.2% lower than in the control group (respectively 14.3% and 27,5%). A detailed analysis of the treatment results revealed that when using radical rehabilitation of a purulent focus in combination with the proposed system of pre- and postoperative complex treatment, the recurrence rate of the process is 4.4 times less than in the control group (respectively 7.1% and 31.6%), while when performing. This indicator in the compared groups did not differ statistically significantly from the usual sequester necrectomy (42.9% and 47.6%, respectively).

The results of clinical and radiological data are confirmed by studying the dynamics of the leukocyte intoxication index (LII), which objectively reflects the degree of plasma toxicity.

When studying the degree of plasma toxicity according to LII on day 3, there was no statistically significant difference in the main and control groups (1.65 ± 0.005 and 1.81 ± 0.003 , respectively). On the 15th day after surgery in the main group, the LII did not differ from the norm (normal - 0.74 ± 0.19 units, in the main group - 0.88 ± 0.01), while in the control group it was higher compared to the main group and the norm (in the control group - 1.49 ± 0.005).

Similar results were obtained when studying the degree of plasma toxicity by the survival time of paramecia.

On the third day, the survival time of paramecia in all the studied groups was statistically significantly lower compared to the norm (the norm was 25.31 ± 0.6 minutes, in the main group - 16.2 ± 0.43 , in the control group - 16.2 ± 0.72). On the 10th and 15th days after treatment, the survival time of paramecia in the control group is

statistically significantly lower than normal, while against the background of the proposed treatment regimens in the main group it approaches normal (in the main group - 24.5 ± 0.44 , in the control group -20.2 ± 0.21).

During immunological examination before treatment in signs of immunodeficiency of cellular and humoral immunity were determined in both groups.

Under the influence of the treatment, these changes normalized in the main group, while in the control group they did not differ significantly from the preoperative indicators. Moreover, in this group there is a slight aggravation of secondary immunodeficiency under the influence of negative consequences of surgical treatment and antibiotic therapy.

In a dynamic microbiological study, the proportion of the most pathogenic microbes before treatment in the compared groups is nothing it did not differ (85.4% and 83.7%, respectively). At the same time, after treatment, this indicator in the main group is statistically significantly lower than in the control group (26.8% and 62.8%, respectively).

The proportion of critical microbial contamination before surgery is also approximately the same in the compared groups (80.5% and 62.8%, respectively 81,4%). Under the influence of the treatment, this indicator in the main group was 2.2 times lower than in the control group (respectively, 24.4% and 53,5%). The frequency of sterile crops after treatment in the main group is 2.9 times higher than in the control group (29.8% and 9.3% respectively).

The use of the proposed approaches in the complex treatment of the diseases under consideration made it possible to reduce the proportion of postoperative fistulas and purulent wounds by 1.5 times compared to the control group (19.5% and 30.0%, respectively). This, in turn, contributed to a decrease in the frequency of relapses of the disease under discussion in the main group by 2.8 times than in the control group (14.3% and 40.0%, respectively). When applying the proposed approaches of complex treatment of chronic osteomyelitis in combination with a radical approach and adequate replacement the resulting defect of relapses is 3 times less than with the use of radical approaches and adequate replacement of the resulting defect without the use of a comprehensive treatment regimen (respectively 7.1% and 21.1%).

Conclusion. The results of the study indicate a high necrolytic and bacteriological effect of benzoin ointment, which is potentiated by rational lymphotropic antibacterial and immunostimulating therapy. All this, combined with a radical approach to the rehabilitation of a purulent-inflammatory focus, a rational method of plastic replacement of a bone defect and reconstruction with a combination of osteomyelitis with a violation of bone integrity, create favorable conditions for early relief of the purulent-inflammatory process and timely healing of a postoperative

wound. The latter makes it possible to significantly reduce the proportion of reinfection and, thereby, improve the results of treatment of chronic osteomyelitis.

Literature

1. On the issue of complex treatment of gunshot osteomyelitis of long limb bones in a military hospital /A.N.Anipchenko [et al.] // Medical Sciences. - 2007. - No. 1. - pp.17-19
2. Nikitin S.E. Experience of using external fixation in the treatment of false joints and defects of tubular bones complicated by osteomyelitis/ S.E.Nikitin, M.V.Parshikov// Traumatology and orthopedics of Russia. - 2006. - No. 2. - p. 217
3. Prevention of exacerbations and complex treatment of chronic hematogenous osteomyelitis with the use of probiotics / P.P.Romashov [and et al.]// Traumatology and orthopedics of Russia. - 2006.- No. 2. - p. 256
4. Chronic non-bacterial osteomyelitis in children /H.J.Girschick [et all.] // Ann. Rheum. Dis. -2005. -V.64.- №2. -P.279-285
5. A Single-Stage Operation in the Treatment of Chronic Osteomyelitis of the Lower Extremity Including Reconstruction with the Vascularized Iliac Bone Graft and Free-Tissue Transfer /M. Rhomberg[et all.]// Plastic and Reconstructive Surgery. - 2003. - V.111. -№7. -P.2353-2361