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ЗМІСТ / CONTENTS

B. Kravchenko Comparative analysis of statistical data and oral hygiene indices among different groups of smokers	8
Б. Кравченко Порівняльний аналіз статистичних даних, гігієнічних індексів у різних групах курців	8
I. Grichushenko Cognitive impairment in elderly patients in the postoperative period: A clinical case	20
І. Грічушенко Когнітивні порушення у літніх людей в післяопераційний період: клінічний випадок	20
T. Bakaliuk, M. Vitsentovych Investigation of brain-derived neurotrophic factor as a diagnostic marker of neuroplasticity in children with motor disorder delay	27
Т. Бакалюк, М. Віцентович Дослідження нейротрофічного фактору мозку як діагностичного маркера нейропластичності у дітей із затримкою рухового розладу	27
Ya. Duhanchik, E. Dyachuk, M. Bilyschuk Dental disease prevention in children of different ages in the Zakarpattia region	37
Я. Дуганчик, Е. Дячук, М. Білищук Профілактика стоматологічних захворювань у дітей різного віку на території Закарпатської області	37
N. Kravets Microbiocenosis in patients with acute tonsillitis influenced by smoking	50
Н. Кравець Мікробіоценоз у пацієнтів з гострим тонзилітом під впливом фактору куріння	50
Yu. Klyatsky, S. Maslennikov, M. Golovakha, V. Kosylo Differentiated tactics for surgical treatment of purulent sacroiliitis depending on the clinical and radiological stage under ASAS criteria	59
Ю. Кляцький, С. Масленніков, М. Головаха, В. Косило Диференційована тактика хірургічного лікування гнійного сакроіліїту залежно від клініко-рентгенологічної стадії за ASAS	59
V. Kovalenko Features of adipokine-mediated myocardial injury in patients with ST-segment elevation myocardial infarction	68
В. Коваленко Особливості адипокін-опосередкованих процесів ушкодження міокарда у пацієнтів з інфарктом міокарда з елевацією сегмента ST	68
V. Fishchenko, D. Yusupova Clinical and functional effectiveness of nuclear magnetic resonance therapy in the comprehensive treatment of the early stages of gonarthrosis	77
В. Фіщенко, Д. Юсупова Клініко-функціональна ефективність ядерної магнітно-резонансної терапії у комплексному лікуванні початкових стадій гонартрозу	77



Differentiated tactics for surgical treatment of purulent sacroiliitis depending on the clinical and radiological stage under ASAS criteria

Yurii Klyatsky

PhD in Medical Sciences, Associate Professor
Zaporizhzhia State Medical and Pharmaceutical University
69035, 26 Maria Prymachenko Blvd., Zaporizhzhia, Ukraine
<https://orcid.org/0009-0002-1806-067X>

Serhii Maslennikov*

PhD, Associate Professor
Zaporizhzhia State Medical and Pharmaceutical University
69035, 26 Maria Prymachenko Blvd., Zaporizhzhia, Ukraine
<https://orcid.org/0000-0002-7505-8587>

Maksym Golovakha

Doctor of Medical Sciences, Professor
Zaporizhzhia State Medical and Pharmaceutical University
69035, 26 Maria Prymachenko Blvd., Zaporizhzhia, Ukraine
<https://orcid.org/0000-0003-2835-9333>

Vasyl Kosylo

Assistant
Zaporizhzhia State Medical and Pharmaceutical University
69035, 26 Maria Prymachenko Blvd., Zaporizhzhia, Ukraine
<https://orcid.org/0009-0001-5573-244X>

Abstract. Purulent lesion of the sacroiliac joint (sacroiliitis) is a severe surgical pathology of the musculoskeletal system and requires surgical treatment in the department of purulent surgery. The purpose was to analyse the tactics of surgical treatment of purulent sacroiliitis in combination with infusion and antibacterial therapy depending on the clinical and radiological form of the disease. 27 patients with purulent sacroiliitis were studied. Patients were divided into forms: stage 2 ASAS – 40.7%, stage 3 ASAS – 33.3%, stage 4 ASAS (panarthrititis) – 26.0%. Depending on the forms, patients received combination therapy: conservative treatment (antibiotics, blockades, infusions), economical or radical joint resection with drainage, bacteriological control, detoxification. 11 (40.7%) patients with synovitis who were treated only conservatively and 9 (33.3%) patients with arthritis who had additional economical resection fully recovered. Among 7 (25.9%) patients with panarthrititis who underwent radical resection, 1 developed septic shock, which led to lethal outcomes, and 3 underwent repeated operations due to ligature fistulas. 25 (92.5 %) patients – complete recovery, 1 – periodic recurrences. It was found that treatment should consider the form of the disease; immediate resection in septic flow with bacterial control reduces chronisation and relapses, and the combined strategy is effective in avoiding complications, but requires early diagnosis and a multidisciplinary approach. The results obtained confirmed the feasibility of a differentiated approach to the choice of surgical tactics for the treatment of purulent sacroiliitis depending on the stage of ASAS, which can be considered when developing clinical protocols

Keywords: pelvic bones; antibiotic therapy; sacroiliac joint; panarthrititis; septic complications

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*Corresponding author



★ INTRODUCTION

Treatment of purulent sacroiliitis in Ukraine is an pressing issue due to several objective factors, namely: the medical aspect – the disease is often not diagnosed timely, which leads to difficult treatment and long recovery; socio-economic context – in the conditions of war, pelvic injuries and infections have increased, which becomes a challenge for both military medicine and civilian hospitals. The disease often disguises itself as normal back pain, leading to late diagnosis, chronisation of the process, and long recovery, which requires differentiated treatment approaches. The lack of detailed statistics may indicate an underestimation of the problem due to limited diagnosis, insufficient knowledge of this pathology by surgeons, lack of experience in treating patients with purulent lesions of the pelvic bones, which with the rest leads to erroneous treatment tactics.

Purulent sacroiliitis is a severe surgical pathology of the musculoskeletal system that requires surgical intervention in the context of purulent surgery. According to M. He *et al.* [1], this is a rare complication that accounts for less than 1-2% of all cases of joint inflammation, most often occurring in immunocompromised individuals after pelvic injuries or intravenous drug use. Y. Wang *et al.* [2] analysed clinical, laboratory, and instrumental data from 135 patients with infectious sacroiliitis in China for the period 2008-2020, finding that 67% of cases were purulent, and a biopsy controlled by computed tomography (CT) provided positive results in identifying pathogens such as *Staphylococcus aureus* and *Malassezia* in 87% of cases, emphasising the need for a biopsy to differentiate spondyloarthritis. The researchers noted higher rates of bone marrow erosion and oedema when performing magnetic resonance imaging (MRI) studies for purulent and tuberculosis forms compared to brucellosis, which improves early diagnosis in patients with fever and increased erythrocyte sedimentation rate (ESR). M.R.M. Rishard *et al.* [3] described a case of purulent sacroiliitis in the postpartum period in a 25-year-old woman caused by *Streptococcus agalactiae*, where timely diagnosis by MRI and bacteriological seeding enabled the appointment of successful antibiotic therapy (cefotaxime and metronidazole) with joint support by corset and traction, preventing chronisation and demonstrating the role of a multidisciplinary approach in avoiding long-term complications such as pain. Y. Tokuyama *et al.* [4] considered a case of purulent sacroiliitis caused by *Salmonella schwarzengrund*, in a young healthy woman without immunodeficiency, where interventional radiology to drain the sacroiliac abscess in combination with antibiotics (meropenem, vancomycin, later levofloxacin) provided a complete recovery in 38 days, highlighting the potential for extraintestinal infections with *Salmonella* even in immunocompetent individuals. The presence of an untreated pathological focus in the acute period leads to a chronic course of the disease with frequent exacerbations over many years. As noted by O.O. Kopchak [5], the long-term existence of pathological pain contributes to the stable chronisation mechanisms, which complicates further diagnosis and therapeutic approaches. Similar observations were also confirmed by V. Tankut *et al.* [6], emphasising that untimely or incomplete correction of pain can lead to its persistence and repeated aggravations, even in specific clinical groups, such as pregnant women.

A. Al-Mnayyis *et al.* [7] described radiological diagnostic methods, in particular MRI as the gold standard for detecting early bone marrow oedema and effusion, and CT for detailed assessment of erosions and sclerosis, which are critical for differentiating the pyogenic form from other aetiologies such as brucellosis or tuberculosis, allowing timely aspiration for microbiological confirmation. Although over-the-counter medications such as nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen have shown moderate efficacy in reducing pain and disability in chronic lower back pain, they often did not affect inflammatory lesions of the sacroileal joints, highlighting the need for a comprehensive approach with antibiotics and surgery for infectious cases, as noted by J. Peck *et al.* [8]. Analysis of these sources showed that early imaging and aetiological differentiation are key to avoiding chronisation. Without timely instrumental imaging, such as SPECT or contrast MRI, diagnosis is often delayed, leading to destructive changes in the joint [9].

The purpose of the study was to evaluate the effectiveness of differentiated tactics of surgical treatment of purulent sacroiliitis depending on the clinical and radiological stages according to the ASAS criteria to optimise results, reduce the risk of chronisation of the process, relapses, and septic complications.

★ MATERIALS AND METHODS

A retrospective analysis was conducted of medical records of patients hospitalised between 2021 and 2024 in the bone and purulent infection unit of Municipal Non-Profit Enterprise “City Hospital No. 9” in Zaporizhzhia for purulent sacroiliitis. The study was conducted in accordance with the international standards of the Declaration of Helsinki World Medical Association [10], European Commission [11] and ethical principles approved by the local ethics committee of Zaporizhzhia State Medical and Pharmaceutical University (Protocol No. 8 of August 17, 2023). All patients have given written informed consent to the use of their clinical data for scientific purposes. The criteria for including patients were: consent to the use of clinical data, confirmed diagnosis of purulent sacroiliitis, availability of complete medical documentation. The exclusion criteria were: refusal to use clinical data, patients with incomplete medical documentation, lack of a confirmed diagnosis (for example, lack of CT/MRI data or microbiological studies).

The stages of the study included: 1) selection and collection of data from medical records; 2) statistical analysis of demographic, clinical and aetiological indicators; 3) evaluation of the effectiveness of treatment based on clinical criteria; 4) presentation of generalised results and illustrative clinical case to demonstrate the typical course of the disease. In addition to the generalised analysis, a significant clinical case was presented as an illustration of the typical course of the disease and the effectiveness of the treatment strategy, in compliance with the recommendations of the CARE guidelines [12]. Data sources included retrospective analysis of medical records, including medical history, CT, MRI, microbiological studies, laboratory tests, and operating protocols. During X-ray examination to assess the degree of sacroiliitis, the criteria of the Assessment of SpondyloArthritis international Society

(ASAS) according to J. Sieper *et al.* [13] were applied, in particular, the modified New York criteria for the classification

of radiographic changes, adapted for the differentiation of infectious processes from inflammatory forms (Table 1).

Table 1. Radiological classification of sacroiliitis proposed by ASAS

Stage	Characteristics
Stage 0	Normal, no changes (or only soft tissue oedema).
Stage 1	Initial narrowing of the joint space, suspicious changes (blurred edges).
Stage 2	Minimal anomalies, erosions, sclerosis, narrowing of the joint space.
Stage 3	Significant erosions, bone lintels, partial ankylosis.
Stage 4	Complete ankylosis, overgrowth of the joint space.

Source: J. Sieper *et al.* [13]

In cases of doubt about the aetiology, ASAS criteria were used as an auxiliary tool to exclude autoimmune causes based on radiological signs, such as erosion and ankylosis. Data were collected from hospital archives without interfering with patient treatment. To evaluate the effectiveness of treatment, the following criteria were used: clinical improvement (pain reduction, normalisation of body temperature, improved mobility); laboratory parameters (normalisation of ESR, C-reactive protein, negative results of bacteriological cultures); radiological data (reduction of signs of inflammation on CT/MRI); and the absence of relapses for at least 6 months after discharge. Effectiveness was considered achieved when at least 80% of positive changes were achieved according to these criteria. Anamnestically, all 27 patients in the study were previously treated either in surgical, gynaecological, or neurological and trauma departments for complications of the underlying disease without a positive result. Distribution of patients by gender: women – 15 (55.5%), men – 12 (44.5%). The average age of patients was 32.4 years. Distribution of patients by aetiological factors: 7 (25.9 %) women – transferred postpartum sepsis with subsequent localisation of the process in the sacroiliac joint and gynaecological diseases, in 8 (29.6%) patients haematogenic osteomyelitis of the pelvic bones, in particular, the ilium was complicated by sacroiliitis, in 4 (14.8%) patients septic phenomena developed against the background of drug addiction, in 6 (22.2%) cases of the disease the root cause could not be established.

★ RESULTS AND DISCUSSION

The authors identified 3 clinical and Radiological forms of purulent sacroiliitis, which to a certain extent correspond to the classification described above: purulent non-specific unilateral synovitis, radiological stage 2 according to ASAS in 11 (40.7%) patients; purulent non-specific arthritis with destruction of articular cartilage (osteoarthritis), radiological stage 3 according to ASAS in 9 (33.3%) cases; purulent arthritis with destruction of cartilage and extra-articular bone formations – bodies ilium and sacrum (panarthrit), stage 4 radiological ASAS in 7 (26.0%) patients. Patients with the first two forms of the disease were hospitalised

in the acute period with a clinic of severe purulent inflammation, which was characterised by severe fibrillation (39-40°C), tachycardia, chills, severe pain syndrome of the sacroiliac junction, with radiation in the *n.ischiadicus*, forced position of the lower limb (flexion and adduction in the hip joint) on the affected side. The course of the disease in patients with the third form of sacroiliitis was chronic in nature with frequent episodes of exacerbations, during one of which they were hospitalised. Purulent abscesses manifested elastic, low-painful fluctuation and were localised in the groin area and at the level of the gluteal fold, and in the chronic course – in the medial areas of the thigh. X-ray signs corresponded to the characteristics given in the classification up to complete destruction of the joint with the disappearance of the joint space. In some cases, foci of destruction and osteoporosis formed with areas of sclerosis around the joints, and destruction of the body and wing of the ilium, lateral masses of the sacrum, sacral foramen with the presence of large and small sequestrs. Fistulas of various localisation were observed in 8 (29.6%) patients (Table 2).

All patients received complex therapy in a surgical hospital. The method of treatment depended on the form of the disease and aetiopathological characteristics. Conservative treatment was given to 11 (40.7%) patients with purulent non-specific unilateral synovitis. It was based on bed rest on the shield, intraosseous anti-inflammatory prolonged blockades, which included lidocaine 2% – 4.0 mL and the osteotropic antibiotic lincomycin 300 mg (1 mL) with a total course of 5-7 injections with a frequency of once every two days. Antibacterial therapy began with empirical therapy based on the use of drugs active according to the spectrum of potential pathogens and was primarily directed to methicillin-resistant staphylococci with the appointment of vancomycin. If gram-negative flora was suspected, ceftazidime with ciprofloxacin, amikacin with ceftazidime, and carbapenems were used intravenously for 14 days. Ceftriaxone, cefotaxime, and inhibitor-protected penicillins (piperacillin/tazobactam) were administered when seeding *E. coli* or *Proteus* spp. If bacteriological testing revealed coagulase-negative staphylococcus with a high level of resistance to many antibiotics, patients were given vancomycin and teicoplanin.

Table 2. Results and features of patient treatment according to the form of the disease

Form of the disease (ASAS stage)	Number of patients (%)	Treatment type	Key elements of therapy	Results and notes
Purulent non-specific unilateral synovitis (stage 2)	11 (40.7%)	Conservative	Bed rest, intraosseous blockages, empirical antibiotic therapy, infusion therapy.	Successful relief of acute inflammation; no need for surgery.

Table 2. Continued

Form of the disease (ASAS stage)	Number of patients (%)	Treatment type	Key elements of therapy	Results and notes
Purulent non-specific arthritis with destruction of articular cartilage (stage 3)	9 (33.3%)	Surgical (economical joint resection), conservative	Resection, postoperative infusion therapy, antibiotic therapy depending on the pathogen.	Successful recovery after resection; focus on preventing hypervolaemia and hypokalaemia.
Purulent arthritis with destruction of cartilage and extra-articular bone formations (panarthritis, stage 4)	7 (26.0%)	Surgical (joint resection, drainage), conservative	U-shaped/window resection, removal of affected tissue, drainage, antibiotic therapy depending on the pathogen.	Wound healing by primary tension in all patients; chronic course with relapses.

Source: systematised by the authors

Due to inflammation, the body's physiological metabolism is disrupted, pathological products accumulate, and intoxication increases. All this deepens the course of the purulent-inflammatory process, contributes to the spread of infection and, accordingly, requires intensive infusion therapy. The daily volume of infusion therapy in patients was 20-25 mL/kg of the patient's body weight. Depending on the severity, the treatment lasted from 5 to 20 days. First, an albumin solution was administered, which has high oncotic pressure and caused a directed flow of fluid from the tissues into the vessels. After that, Ringer's crystalloid solution was administered intravenously by drip. It made up for the lack of fluid in the cells and intercellular space. At the final stage, rheopolyglucin and rheosorblyact were used, which have detoxification and rheological properties. 5-10 mL of 2.4% eufillin was added to the above solutions to enhance renal circulation and stimulate diuresis. Solutions were heated to 35-36°C with the rate of administration of drugs with high osmotic activity of 15-20 mL/min, crystalloids 25-35 mL/min.

Economical resection of the sacroiliac joint was performed in 9 (33.3%) patients with purulent non-specific arthritis and signs of articular cartilage destruction. In the postoperative period, patients were prescribed infusion therapy, which included 5% glucose solution, at the rate of 10 mL/kg of body weight, insulin, B vitamins (1 mL) and C (3-5 mL), trental (5 mL), cardiac glycosides, 3% potassium chloride solution (1.0 mL/kg) to prevent hypokalaemia. Next, Ringer's solution was administered intravenously at the rate of 5-7 mL/kg of body weight. An increase in intravascular volume by extracting fluid from the cellular and extracellular spaces provided subsequent administration of rheopolyglucin. The infusion rate is 5-7 mL/min. At this stage, to prevent hypervolaemia and hemodilution, patients were administered mannitol at a dose of 0.5-0.8 g/kg of body weight and 2-3 mL of Lasix to stimulate diuresis. Infusion therapy was completed with the introduction of 5-10% albumin solution at a dose of 1-3 mL/kg, at a rate of 5-10 mL/min. The average duration of such forced actions depended on the patient's condition and was up to 10 days.

Antibacterial therapy in the postoperative period depended on the pathogen. Patients with isolated *S. epidermidis*, *S. aureus*, *Streptococcus* spp. were prescribed cefepime – 2 g IV infusion every 12 hours or ceftriaxone – 2 g IV infusion every 24 hours + amikacin – 20 mg/kg IV (diluted in 100 mL of saline solution). Patients with Gram-negative *Entrobacteriaceae*, *P. Aeruginosis* were prescribed Cefazolin 2 g IV infusion every 8 hours or oxacillin 2 g IV infusion every 4 hours + amikacin – 20 mg/kg IV (diluted

in 100 mL of saline) or gentamicin – 5 mg/kg (diluted in 100 mL of saline).

In patients who were diagnosed with purulent panarthritis of the sacroiliac joint – 7 (25.9%) cases, surgical intervention was performed depending on the location of fistulas. In the absence of fistulas or their location only in the sciatic region, U-shaped or window resection of the joint was performed. Joint elements, affected bone tissue were removed, sacral openings were opened, and the roots of the horse's tail were removed up to the sacral canal. An additional incision was made in the projection of the iliac wing for the purpose of revising the pelvic cavity. In the presence of pus, active drainage was established through a resection hole in the joint into the pelvic cavity. In the postoperative period, the wounds were washed using drainage tubes with antiseptic solutions (deccasan, chlorhexidine) by drip method. Drains were removed on Day 5. Targeted antibiotics were administered intravenously for 14 days (depending on the results of a bacteriological examination). In all patients, the wounds healed by primary tension. On average, patients stayed in the hospital for 4 weeks.

Intraoperatively, one patient was found to have a purulent process spreading within the middle third of the thigh, which required additional opening of abscesses followed by drainage. According to the data by A.R. Rezaei *et al.* [14] and C. Hinson *et al.* [15], which were confirmed by the results of studies by A. Bucataru *et al.* [16], inflammatory processes rapidly affect cell spaces, which leads to the development of various purulent accumulations in the pelvic area, extra-peritoneal space, and lower extremities. The deep location of the pelvic bones, combined with a large number of muscles, prevents direct external drainage of pus near the focus of osteomyelitis. As a result, pus migrates over distances, involving the main vascular and nerve plexuses, which provokes a range of complications.

In the postoperative period, wounds were washed through drains with antiseptic solutions of deccasan or chlorhexidine, in a volume of up to 5 litres by drip method around the clock. Drains were removed depending on the condition of the wounds and the nature of the discharge. Bacteriological cultures from wounds were inoculated every 7-10 days. At 3-4 weeks of treatment, cultures from wounds were negative. The main complication when performing sacroiliac joint resection may be damage to the superior sciatic artery. The authors did not observe such complications, since they always planned its projection, which allowed performing interventions outside this zone. In the postoperative period, there was a violation of independent urination for 4-5 days in 3 (33.3%) patients, a delay in defecation in 2 (22.2%) patients. In the future, the function of

the pelvic organs was fully restored. The pain in my back disappeared 3-4 weeks after the operation. In the immediate postoperative period, 1 (3%) patient died with bilateral damage to the sacroiliac joint, which was complicated by septic shock and manifestations of multiple organ failure. 3 (11.1%) patients were re-operated on for ligature fistulas. Long-term results were observed in 26 (96.2%) patients aged 2 to 4 years. A patient who refuses surgical treatment was periodically hospitalised in the department with an exacerbation of the process. The remaining 25 (92.5%) patients had no complains.

The positive results of treatment of 11 patients using conservative methods with an emphasis on empirical antibacterial therapy (vancomycin, ceftazidime, ciprofloxacin) and intensive infusion detoxification are consistent with the literature data, where antibiotics remain the basis for the treatment of infectious sacroiliitis, especially in the early stages, in order to prevent the spread of infection. For example, in the retrospective multicentre study by M. Hermet *et al.* [17], 39 adult patients with infectious sacroiliitis have been shown to be effective with conservative antibiotic treatment in 70-80% of cases without complications, while surgery is reserved for abscesses or osteomyelitis.

For patients with purulent arthritis (stage 3 according to ASAS), where articular cartilage destruction was observed, economical resection of the sacroiliac joint in combination with postoperative infusion and antibacterial therapy ensured the elimination of the inflammatory process in all 9 cases. This approach was justified by the literature data, so L.S. Briongos-Figuero *et al.* [18] emphasised the need for surgical intervention in case of destructive changes to prevent chronisation of the process and to reduce the risk of sepsis. In a recent multicentre study of infectious sacroiliitis in children and adults, M. Cahueque *et al.* [19] noted that surgical rehabilitation with abscess drainage improves prognosis in patients with extensive infection, reducing the risk of relapse by up to 10-15%.

The results of treatment of patients in the group with panarthritis (stage IV according to ASAS criteria) who underwent radical resection with opening of purulent abscesses, drainage and antiseptic lavage emphasise the risks of septic complications, especially in bilateral lesions, which is confirmed by contemporary studies: in the case of *Salmonella*-associated infectious sacroiliitis of postgastroenteritis origin, timely surgical intervention with antibiotics is key to preventing multiple organ failure. Long-term results showed the advantages of radical treatment over symptomatic treatment, which prevents a chronic course with frequent exacerbations. However, the presence of complications such as ligature fistulas and pelvic organ dysfunction indicates the need for improved techniques, including prevention of vascular damage and enhanced bacteriological control. No less important in the successful outcome of treatment is the possibility of early instrumental diagnosis. Thus, W. Feki *et al.* [20] focused on the role of timely use of MRI and CT, which reduces the frequency of chronic forms. Data by I.K. Venher *et al.* [20] also emphasised that systemic disorders, in particular, endothelial dysfunction and increased coagulation activity in patients with connective tissue dysplasia, can significantly increase the risk of postoperative thrombotic complications, which requires careful monitoring and prevention. In general, the

data confirmed the relevance of complex treatment of purulent sacroiliitis in the context of purulent surgery, with an emphasis on aetiopathogenetic factors such as postpartum sepsis or haematogenic osteomyelitis, and highlighted the need for a multidisciplinary approach to improve treatment outcomes.

To illustrate the course of purulent sacroiliitis and evaluate the effectiveness of the treatment methods used, a clinical example is given that reflects the manifestations of the disease characteristic of this pathology. Patient R., 29, was hospitalised in the department with complaints of sharp pain in the right sacroiliac joint and right hip. According to the patient, he fell ill seven days ago, when after hypothermia there was pain in the pelvis and an increase in temperature to 39.0°C. On examination, the patient had sharp pain over the right sacroiliac joint and the presence of a fistula with purulent contents. Severe swelling of the right thigh. Movement in the right hip joint was restricted due to pain. Body temperature – 38.5°C. In the general blood test, leukocytosis was $14 \cdot 10^9/L$, ESR – 45 mm/h, procalcitonin – 2.2 ng/mL. Computed tomography showed a significant expansion of the joint space with signs of destruction of the articular surface of the right sacroiliac joint (Fig. 1, 2).



Figure 1. CT scan image of a patient with destruction of the sacroiliac joint on the right side

Source: photo by the authors obtained during an instrumental examination



Figure 2. Photographic image of a 3D CT model Lesion of the sacroiliac joint

Source: photo by the authors obtained during an instrumental examination

During contrast CT, contrast fluid spread through the fistula to the sacroiliac joint. On the day of hospitalisation, the patient was prescribed empirical antibacterial therapy with vancomycin intravenously 500 mg, diluted with 10 mL of water for injection twice a day. For detoxification therapy, rheosorbilact was used intravenously at 200 mL twice a day for three days. To improve blood circulation, the patient received intravenous drip of pentoxifylline 2% solution at 5.0 mL diluted in 200.0 mL of saline solution for 10 days. A diagnostic puncture of the soft tissues of the right thigh was performed, during which pus was extracted.

After preoperative preparation, surgical rehabilitation of the purulent focus with “window” resection of the sacroiliac joint and opening of purulent abscesses in the right thigh area was performed (Fig. 3).

In the postoperative period, the wounds were constantly washed with antiseptics by the installation of drainage tubes (Fig. 4). The complex treatment, including drug therapy and dressings with active flushing of drainage tubes, contributed to wound healing. The patient was discharged in a satisfactory condition for further rehabilitation.



Figure 3. Resection of the right sacroiliac joint and opening of purulent abscesses between the muscles along the back of the thigh

Source: photo by the authors obtained during surgical treatment



Figure 4. Postoperative wounds with installed drainage tubes

Source: photo by the authors obtained during a clinical examination

The results of treatment are consistent with the data of studies that have emphasised the effectiveness of a combined approach to purulent sacroiliitis. Compared to another clinical case described by X. Li *et al.* [22], purulent sacroiliitis caused by methicillin-sensitive *S. aureus* in a 29-year-old healthy woman with no risk factors, where empirical intravenous therapy for 4 weeks without surgery resulted in complete clinical recovery, but with persistent changes on MRI for months, similar to the case described above, involving antibiotics and infusion therapy with an emphasis on microbiological confirmation to avoid chronicity. Other publication by D. Colatutto *et al.* [23] was based on the outcome of treatment of two patients with post-COVID sacroiliitis, showed spontaneous improvement in symptoms when taking NSAIDs, but with persistent bone marrow oedema visualised on MRI for almost a year, highlighting the role of long-term monitoring and the possible impact of long-term viral persistence on the

immune response, which resonates with the author's observations on the need for a multidisciplinary approach to prevent septic complications.

These sources have shown that early imaging (MRI/CT) and adapted therapy (starting from 4 weeks of antibiotics) reduce the risk of sepsis, although in some cases they lead to a chronic process. Therefore, the emphasis on timely microbiological diagnostics and correction of treatment in accordance with the results obtained plays a key role in the favourable prognosis. In addition, these clinical examples demonstrated the need for individualisation of therapeutic tactics, because with successful clinical recovery, long-term residual changes in MRI data are possible, which require extended supervision and multidisciplinary support.

✦ CONCLUSIONS

Analysis of literature sources and obtained clinical data indicates that when choosing the method of treatment of

purulent sacroiliitis, it is necessary to consider various forms of joint damage and surrounding tissues, since the disease can manifest itself in both aseptic and purulent forms with varying degrees of severity. It was found that the severe condition of patients, when the disease becomes septic in nature with signs of intoxication, fever and severe pain in the lower back, is a direct indication for immediate resection of the sacroiliac joint and the opening of purulent abscesses. The study emphasised that in such cases, constant bacteriological monitoring is necessary to determine the antibiotic resistance of microorganisms, which allows adapting therapy and avoiding the spread of infection. In addition, the analysis of clinical cases proved that the delay in surgical intervention significantly increases the risk of chronisation of the process, contributing to the development of persistent inflammatory changes and complications, such as abscesses or osteomyelitis. Therefore, early intervention with bacteriological control optimises treatment outcomes, reducing the likelihood of relapses and improving the prognosis for patients.

A combined strategy that combines antibiotic therapy with surgical techniques such as drainage and resection has been found to avoid long-term complications, including chronic pain, joint dysfunction, and systemic septic manifestations. Clinical guidelines based on case reviews

indicate the importance of an individual approach, depending on the aetiology (e.g. bacterial, tuberculosis, or other specific), with an emphasis on conservative methods for the early stages and surgery for purulent forms. Overall, systematic analysis has shown that timely diagnosis using MRI, CT, and laboratory tests is key to success, minimising the invasiveness of interventions and improving patients' quality of life. Prospects for further research include the need for high-quality randomised clinical trials to establish clear diagnostic and treatment protocols, comparison of conservative methods (antibiotics with drainage) with minimally invasive surgical techniques such as joint arthroscopy, identification of potential in the study of new antibiotics considering the growth of resistance, and the role of biomarkers for early identification of septic forms.

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Диференційована тактика хірургічного лікування гнійного сакроілеїту залежно від клініко-рентгенологічної стадії за ASAS

Юрій Кляцький

Кандидат медичних наук, доцент
Запорізький державний медико-фармацевтичний університет
69035, бульв. Марії Примаченко, 26, м. Запоріжжя, Україна
<https://orcid.org/0009-0002-1806-067X>

Сергій Масленніков

Доктор філософії, доцент
Запорізький державний медико-фармацевтичний університет
69035, бульв. Марії Примаченко, 26, м. Запоріжжя, Україна
<https://orcid.org/0000-0002-7505-8587>

Максим Головаха

Доктор медичних наук, професор
Запорізький державний медико-фармацевтичний університет
69035, бульв. Марії Примаченко, 26, м. Запоріжжя, Україна
<https://orcid.org/0000-0003-2835-9333>

Василь Косило

Асистент
Запорізький державний медико-фармацевтичний університет
69035, бульв. Марії Примаченко, 26, м. Запоріжжя, Україна
<https://orcid.org/0009-0001-5573-244X>

Анотація. Гнійне ураження крижово-клубового суглоба (сакроілеїт) є тяжкою хірургічною патологією опорно-рухового апарату та вимагає оперативного лікування в умовах відділення гнійної хірургії. Метою було проаналізувати тактику хірургічного лікування гнійного сакроілеїту в комплексі з інфузійною та антибактеріальною терапією залежно від клініко-рентгенологічної форми захворювання. Досліджено 27 пацієнтів з гнійним сакроілеїтом. Розподіл пацієнтів відбувся за формами: II стадія ASAS – 40,7 %, III стадія ASAS – 33,3 %, IV стадія ASAS (панартрит) – 26,0 %. В залежності від форм пацієнти отримували комбіновану терапію: консервативне лікування (антибіотики, блокади, інфузії), економна або радикальна резекція суглоба з дренажуванням, бактеріологічний контроль, дезінтоксикація. 11 (40,7 %) пацієнтів з синовітом, які лікувались лише консервативно та 9 (33,3 %) пацієнтів з артритом, які мали додатково економну резекцію, повністю одужали. Серед 7 (25,9 %) пацієнтів з панартритом, які перенесли радикальну резекцію, у 1 розвинувся септичний шок, що призвело до летальних наслідків, 3 – перенесли повторні операції через лігатурні нориці. 25 (92,5 %) пацієнтів – повне одужання, 1 – періодичні загострення. Виявлено, що лікування повинно враховувати форму захворювання; негайна резекція при септичному перебігу з бакконтролем зменшує хронізацію та рецидиви, а комбінована стратегія ефективна для уникнення ускладнень, але потребує ранньої діагностики та мультидисциплінарного підходу. Отримані результати підтвердили доцільність диференційованого підходу до вибору хірургічної тактики лікування гнійного сакроілеїту залежно від стадії за ASAS, що може бути враховано при розробці клінічних протоколів

Ключові слова: кістки тазу; антибіотикотерапія; крижово-клубовий суглоб; панартрит; септичні ускладнення