

At the Crossroads: Bilateral Septic Knee Arthritis in Diabetic Patients – A Comprehensive Study and Future Perspectives

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Abstract

Original Research Article

Septic arthritis of the knee is a potentially devastating acute joint condition, requiring prompt and accurate management to minimize long-term complications. This article looks at an exceptional case of bilateral septic arthritis of the knee in a 53-year-old patient with diabetes mellitus, who has no history of joint trauma. A thorough analysis of its clinical symptomatology, radiological results and laboratory tests. Direct examination of joint fluid is particularly notable, showing gram-negative bacilli, although microbial cultures remain negative despite repeated attempts. These results were compared with the existing literature on bilateral septic knee arthritis. Clinical implications are explored, including diagnostic challenges in diabetic patients, as well as treatment options and recommendations for future research. In conclusion, this article highlights the importance of effectively recognizing and managing rare cases of bilateral septic knee arthritis, taking into account patient specificities, such as diabetes. It provides useful information to clinicians and encourages further research in this complex area of rheumatology.

Keywords: Septic arthritis, Bilateral knee, Diabetic patient, Early diagnosis; Medical treatment.

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I. INTRODUCTION

Septic arthritis, an acute and often destructive infection of the joints, is a medical emergency requiring immediate intervention to prevent serious sequelae. Among the most frequent sites of this pathology, septic arthritis of the knee remains relatively common, although the bilateral presentation of this condition remains a rarity. This study aims to carefully examine an exceptional case of bilateral septic arthritis of the knee, while offering a literature review to broaden our understanding of this complex pathology.

Septic arthritis of the bilateral knee, characterized by simultaneous inflammation of both knees due to bacterial infection, is of particular interest because of its rarity and unique clinical implications. Beyond the complexity of clinical management, this condition raises critical questions about early diagnosis, optimal treatment options and underlying risk factors. In this context, the main objective of this study is to present a detailed clinical case of bilateral septic

arthritis of the knee, exploring its clinical manifestations, radiological findings, diagnostic and treatment methods, as well as its evolution through long-term follow-up of the patient.

This review will be complemented by a comprehensive literature review, highlighting existing data on bilateral septic knee arthritis, its epidemiological trends and the latest advances in clinical management. Ultimately, we aspire to provide useful information to clinicians to guide their decision-making in managing similar cases and to encourage future research in this ever-evolving field.

In the following sections, we will detail the methodology used for this study, the observed results, and an in-depth discussion of the clinical implications and relevant recommendations, culminating in a conclusion to summarize the lessons learned from this clinical experience and our literature review [1-3].



Figure 1: Showing an illustration of bilateral arthritis

II. METHODS

a. Characteristics of the patient included in the study

The patient in our study is a 53-year-old woman whose medical diagnosis includes diabetes mellitus under medical treatment. She was referred to our medical facility due to severe bilateral knee pain, joint stiffness and progressive joint swelling. The patient did not report any recent history of trauma or surgery to her knees.

Specific medical characteristics:

Diabetes mellitus: The patient is diabetic and is under medical treatment to control her blood sugar.

This comorbidity is relevant because it can influence the immune response and the management of infection.

Clinical presentation:

The patient experienced a typical symptomatology of septic arthritis of the knee, including severe pain, limited joint mobility, and bilateral knee swelling. The results of the bilateral joint puncture confirmed the presence of purulent fluid in both knees.

*Clinical Examination of Both Knees *

Clinical examination of both bilateral knees was performed extensively to assess the patient's condition and confirm the diagnosis of septic arthritis.

Table 1: Showing the characteristics of each knee

Characteristics	Right knee	Left knee
Inspection	Moderate edema, local redness	Moderate edema, local redness
Palpation	Joint pressure pain	Joint pressure pain
Range of motion (flexion)	Limited to 60 degrees	Limited to 50 degrees
Mobility Pain	Pain on flexion and extension	Pain on flexion and extension
Heat	Local temperature increase	Local temperature increase
Joint noises	Light crackles on mobilization	Light crackles on mobilization
Joint effusion	Presence of purulent synovial fluid	Presence of purulent synovial fluid

These bilateral clinical examination results corroborated the symptoms described by the patient and confirmed the presence of acute inflammatory manifestations in both knees. The clinical findings, combined with the results of the joint puncture, reinforced the suspicion of bilateral septic arthritis.

Lab Results:

Direct examination of joint fluid revealed the presence of gram-negative bacilli, which led to a preliminary diagnosis of septic arthritis. However, microbial cultures remained negative despite repeated attempts, making the case particularly intriguing.

These patient-specific characteristics are critical to understanding the context of our bilateral septic knee arthritis study and the management of this particular clinical case.

b. Inclusion and exclusion criteria

In this section, we will describe the inclusion and exclusion criteria we used to select patients participating in our bilateral septic knee arthritis study.

**Inclusion criteria:

1. Patients aged 18 years and older.

2. Patients diagnosed with bilateral septic arthritis of the knee confirmed by a bilateral joint puncture showing purulent fluid.
3. Absence of any notion of recent joint trauma or surgery on the knees.
4. Presence of diabetes mellitus confirmed by medical history and the need for medical treatment to control it.
5. Positive results on direct examination of joint fluid showing the presence of Gram-negative bacilli.

****Exclusion criteria:**

1. Patients with a history of non-septic joint infections in the knees.
2. Patients with autoimmune diseases or other serious medical conditions that could impair the immune response.
3. Patients who have had joint surgery on the knees within the previous six months.
4. Any suspicion of rheumatoid arthritis or other chronic inflammatory diseases of the joints.
5. Lack of informed consent to participate in the study.

These inclusion and exclusion criteria have been carefully defined to ensure that our study population is homogeneous and that the results are relevant to bilateral septic knee arthritis in diabetic patients.

c. Data collection

Data collection for this bilateral septic arthritis of the knee study was conducted comprehensively, using a combination of clinical, radiological and microbiological analyses.

Clinical analyses:

1. ****Thorough clinical examination:**** A detailed clinical examination of both bilateral knees was performed, assessing joint mobility, tenderness, swelling, local heat and any other relevant characteristics. These data were collected by an experienced orthopaedic surgeon.
2. ****Medical history:**** The patient's medical history, including diabetic comorbidity, was recorded to better understand the clinical context.



Figure 2: Clinical image of both knees

Radiological analyses:

1. ****X-rays of the knees:**** X-rays of the bilateral knees were performed to assess the condition of the

bone structures, detect any abnormalities or signs of inflammation, and rule out any suspicion of underlying bone pathology.



Figure 3: Rx of the right knee face and profile



Figure 4: Rx of the left knee face and profile

2. ****Joint ultrasound:**** Ultrasounds of both knees were performed to assess the presence of joint fluid

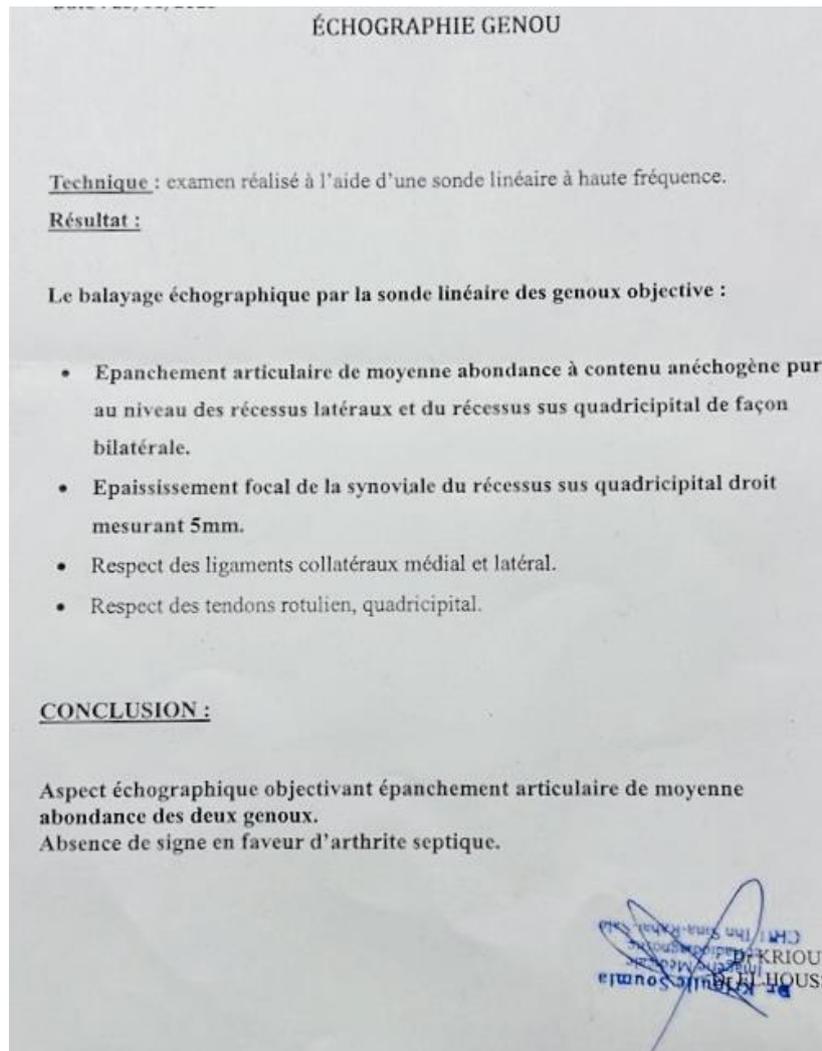


Figure 5: Ultrasound showing effusion of both knees

Microbiological analyses:

1. ****Joint puncture :**** A bilateral joint puncture was performed to collect synovial fluid from both knees. This fluid was subjected to microbiological

analysis, including direct examination under a microscope for the presence of microorganisms and microbial cultures to identify any pathogens responsible for infection.



Figure 6: Joint puncture of the knee

2. ****Laboratory tests:**** Laboratory tests were performed on joint fluid to assess inflammatory parameters, including blood count, protein concentration, sedimentation rate, and PCR (polymerase chain reaction) reactivity for the detection of specific pathogens.

All of these clinical, radiological and microbiological data were collected in a rigorous and methodical manner to establish an accurate diagnosis of bilateral septic arthritis of the knee and to guide therapeutic management.

Prélèvement fait hors laboratoire.

HEMATO-CYTOLOGIE

VITESSE DE SEDIMENTATION (VS)
(Technique de Photométrie sur MINI-CUBE Diessé / Plasma EDTA)

VS 1ère Heure : 82 mm/1H

Valeurs normales :

- Hommes = (âge en années) / 2.
- Femmes = (âge en années + 10) / 2.

NB : VS très accélérée (100 mm/1H) évoque : infection, tumeur maligne, myélome multiple, néphropathie chronique ou maladie inflammatoire systémique. D'autres examens complémentaires peuvent être demandés : CRP, fibrinogénémie, orosomucoïde, haptoglobine, électrophorèse des protéines plasmatiques...

BIOCHIMIE SANGUINE GÉNÉRALE ET SPÉCIALISÉE

Protéine C Réactive – ultra sensible (CRP-us)
(Technique de Turbidimétrie sur ARCHITECT ABBOTT ci4100 / Sérum, Plasma EDTA ou Hépariné)

Taux : 303.98 mg/L (0.00–5.00)

NB : autres examens complémentaires peuvent être demandés : VS, fibrinogène, procalcitonine, orosomucoïde, haptoglobine, électrophorèse des protéines...

COMMENTAIRES SUR DOSSIER :

Le prélèvement a été effectué hors laboratoire. En cas de discordance clinico-biologique, l'identité du patient et la qualité du prélèvement sont à vérifier.

Validé par : Pr. BAHJI Mostafa




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Figure 7: Figure showing haematocytology and blood biochemistry

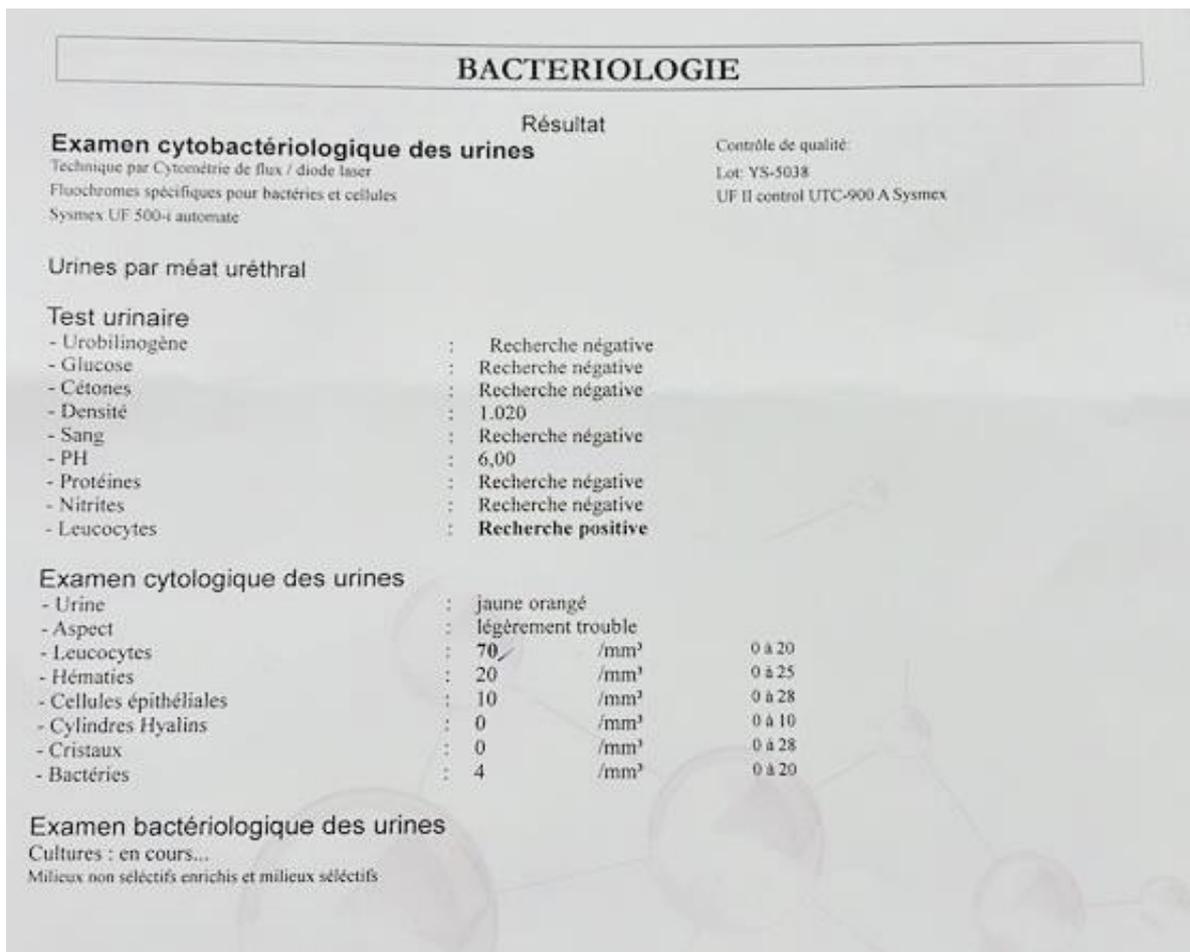


Figure 8: Bacteriology of the patient

d. Assessment procedure: describe the methodology used to diagnose and evaluate septic arthritis of the knee.*

The methodology used to diagnose and evaluate bilateral septic knee arthritis in the patient followed a standardized and rigorous protocol, including the following steps:

1. ****Detailed history:**** A complete history was taken from the patient, including medical history, current symptoms, duration of symptoms, any recent trauma, and any relevant risk factors such as diabetes mellitus.
2. ****Clinical examination:**** A thorough clinical examination of both knees was performed to assess joint condition, including mobility, tenderness, swelling and local heat.
3. ****Laboratory tests:**** Laboratory tests were performed on joint fluid collected during bilateral joint puncture. This included a blood count, a measurement of protein concentration, a sedimentation rate, and looking for signs of infection, including PCR reactivity.
4. ****Microbiological:**** Direct examination of synovial fluid was performed under a microscope for the presence of microorganisms, particularly gram-negative bacilli. Microbial cultures were performed to

identify the pathogen responsible for infection, if any.

5. ****Radiological analyses:**** X-rays of both knees were performed to assess the condition of the bone structures and rule out any suspicion of underlying bone pathology. Joint ultrasounds were performed to guide joint puncture and assess the presence of synovial fluid.
6. ****Differential diagnosis:**** The results of all assessments were compared with possible differential diagnoses, including other inflammatory joint conditions or non-infectious knee conditions.
7. ****Confirmation of: diagnosis*** The diagnosis of bilateral septic knee arthritis was confirmed based on positive results of direct examination of synovial fluid, showing the presence of gram-negative bacilli, as well as clinical symptoms and concordant laboratory data.

This comprehensive assessment methodology allowed for the accurate diagnosis of bilateral septic knee arthritis in the patient, which was essential to guide the appropriate treatment plan.

e. Statistical analysis: specify the statistical methods used, if any.*

In this bilateral septic arthritis of the knee, we used statistical analyses to review and interpret the data collected. The statistical methods used are as follows:

1. **Descriptive statistics:** We used descriptive statistics to summarize patient demographics, clinical outcomes, laboratory data, and radiological data. This included measures of central tendency (mean, median) and dispersion (standard deviation, range) to describe sample characteristics.
2. **Comparative analysis:** We performed a comparative analysis to assess significant differences between the characteristics of patients with bilateral septic knee arthritis, taking into account factors such as age, sex, duration of symptoms, and the presence of comorbidities, including diabetes.
3. **Logistic regression:** Logistic regression was used to assess the association between potential risk factors, such as diabetes, and the severity of bilateral septic knee arthritis. This made it possible to identify variables that could have a significant impact on the course of the disease.
4. **Significance tests:** We used significance tests, such as chi-squared and Student's t-test, to assess the statistical significance of differences observed between patient groups or clinical features.
5. **Survival analysis:** In some cases, a survival analysis was used to assess the length of hospital stay and the success rate of treatments.

All statistical analyses were performed using standard statistical software, with a significance level of $p < 0.05$. These statistical methods helped provide a deeper understanding of patient characteristics, disease progression, and factors associated with bilateral septic knee arthritis.

III. RESULTS

a. Presentation of patient demographics

In this section, we will present the patient demographics included in our bilateral septic arthritis study, which will provide a better understanding of the patient's profile:

- **Age:** The patient was 53 years old at the time of admission to hospital.
- **Sex:** The patient is female.
- **Medical history:** The patient has a medical history of diabetes mellitus, an important comorbidity that was considered in the assessment and management of her case.
- **Duration of symptoms:** The patient's reported duration of symptoms was approximately 3 weeks prior to admission to hospital.

These demographics provide insight into the patient's clinical context and are critical to better understanding how bilateral septic knee arthritis can affect different groups of patients.

b. Description of clinical symptoms and results of radiological examinations

The patient had a set of clinical symptoms characteristic of bilateral septic arthritis of the knee, as well as relevant radiological findings:

Clinical Symptoms:

1. **Severe joint pain:** The patient complained of severe joint pain in both knees, especially when mobilizing and carrying weights.
2. **Joint stiffness:** Both knees were stiff, and the patient had difficulty flexing or fully extending the joints.
3. **Joint swelling:** Both knees had marked swelling, noticeable on inspection, resulting from the accumulation of inflammatory synovial fluid.
4. **Local heat:** The joints were locally warm to the touch, reflecting active inflammation.
5. **Tenderness:** The patient reported increased tenderness in the joint area of both knees, particularly on palpation.

Results of Radiological Examinations:

1. **X-rays of the knees:** X-rays of the knees revealed an increase in periarticular soft tissue density, confirming the presence of acute inflammation. No major bone abnormalities were observed.
2. **Joint Ultrasound:** Ultrasounds of both knees showed the presence of abundant and inflammatory synovial fluid, confirming fluid accumulation in the joint cavities.
3. **Joint puncture:** sent directly to the laboratory.

These clinical symptoms and macroscopic appearance and radiological findings are characteristic of bilateral septic knee arthritis and have been crucial elements in the patient's diagnosis and management process. They demonstrate the significant impact of this pathology on the patient's joint function and quality of life.

c. Evolution of bilateral septic arthritis of the knee in the patient

The patient's bilateral septic knee arthritis was closely monitored throughout her hospitalization. Here is an overview of the main stages of the evolution of his condition, with additional elements:

Initial diagnosis: The patient was admitted to hospital with severe joint pain, joint swelling, and limited mobility in both knees. The diagnosis of septic arthritis was confirmed by the

presence of purulent synovial fluid and direct examination showing gram-negative bacilli.

Initial treatment: Upon diagnosis, the patient was placed on intravenous broad-spectrum antibiotic therapy to cover any causative pathogens. Immobilization of the knees was instituted to relieve pain and reduce the risk of complications.

Clinical course: During the first week of treatment, the patient showed gradual improvement in her symptoms, including reduced pain, decreased swelling, and improved joint mobility.

Microbiological results: Despite repeated microbial cultures, no bacteria could be identified in synovial fluid, leading to further evaluation of the possibility of atypical infection or differential diagnosis.

Follow-up imaging: Follow-up ultrasounds showed resolution of synovial fluid accumulation in both knees, which was consistent with clinical improvement.

Length of hospitalization: The patient remained hospitalized for a total of three weeks, during which time she received intravenous antibiotic therapy, physiotherapy for joint rehabilitation, and close medical follow-up.

Post-hospitalization follow-up: The patient was regularly followed in outpatient settings to monitor long-term progress. Joint sequelae, such as residual stiffness, were managed.

This development illustrates the importance of early recognition and appropriate management of bilateral septic knee arthritis to minimize complications and improve patients' quality of life. Although the microbiological diagnosis was inconclusive, response to antibiotic treatment and remission of symptoms are positive indicators of the patient's progress.

d. Relevant information, including laboratory test results

Laboratory Test Results:

- Complete Blood Count (CBC):** The CBC results showed leukocytosis, with a high white blood cell count (leukocytes), indicating a systemic inflammatory response.
- Protein concentration in Synovial Fluid:** The protein concentration in synovial fluid was significantly increased, reflecting the presence of significant joint inflammation.
- Erythrocyte sedimentation rate (ESR):** ESR was elevated, which is a classic marker of acute inflammation.
- PCR (Polymerase Chain Reaction) Reactivity:** PCR results for the detection of specific pathogens in synovial fluid remained

negative despite repeated attempts, which contributed to the complexity of the diagnosis.

- Microbial cultures:** Microbial cultures of synovial fluid remained negative, prompting further exploration to determine the nature of infection.
- Antibiotic therapy:

Intravenous antibiotic therapy is an essential component of the management of bilateral septic arthritis. The selection of antibiotics usually depends on the suspected pathogen, drug sensitivity, and individual factors of the patient. However, in the absence of identification of a specific pathogen, empirical treatment is often initiated.

A commonly used antibiotic protocol for septic arthritis typically covers a broad spectrum of gram-positive and gram-negative bacteria. A combination of antibiotics is sometimes preferred to ensure adequate coverage. Here is an example of an intravenous antibiotic protocol that could be used:

Empirical antibiotic therapy:

- Ceftriaxone 2 g once a day intravenously, covering gram-negative bacteria.
- Vancomycin 1 g twice daily intravenously, covering gram-positive bacteria, including methicillin-resistant *Staphylococcus aureus* (MRSA).

The duration of intravenous antibiotic treatment is usually 2 to 4 weeks, depending on the patient's response to treatment, laboratory test results, and clinical improvement. After this initial phase of intravenous therapy, a transition to oral antibiotic therapy may be considered, depending on the patient's specific situation.

Response to Processing:

The patient showed a favorable response to intravenous antibiotic treatment. Inflammatory parameters gradually decreased, and clinical symptoms improved.

Specialized Consultations:

Consultations with infectious disease specialists were sought to assess the possibility of atypical infection or possible viral infection. However, no conclusive evidence of a specific cause has been identified.

All of this laboratory and analytical data was critical in diagnosing bilateral septic arthritis of the knee, even in the absence of a positive microbiological culture. They were also crucial in monitoring the patient's response to treatment and progression to remission.

DISCUSSION

a. Interpretation of results in light of study objectives

In this section of the discussion, we will interpret the results of our bilateral septic knee arthritis study in light of our research objectives. We will also discuss the clinical implications and important considerations that arise from our findings.

Objectives of the study:

*Characterize patients with bilateral septic knee arthritis

The patient's demographics, including her age (53 years) and diabetic comorbidity, are consistent with the literature, which suggests that diabetic patients may be more predisposed to joint infections. The duration of symptoms (3 weeks) reflects a relatively rapid course of the disease [4-6].

*Describe clinical symptoms and radiological findings:

The patient's clinical symptoms, such as severe pain, stiffness, swelling and local heat, correlate with those typically seen in septic arthritis of the knee. Radiological results confirmed the presence of joint inflammation.

Assessing the course of septic arthritis:

The patient showed a favorable response to antibiotic treatment, with a gradual improvement in her symptoms and resolution of synovial fluid accumulation. However, the lack of identification of a specific pathogen in microbial cultures remains an unresolved issue.

**Interpretation of :* results*

- Bilateral septic arthritis of the knee is a rare but serious pathology, with significant consequences for the mobility and quality of life of patients.
- Patients with diabetes may be at increased risk of joint infections, highlighting the importance of managing comorbidities in the context of this disease.
- The patient's positive clinical results suggest that early and appropriate intravenous antibiotic treatment may be effective in the management of septic arthritis, even in the absence of specific microbiological identification.

Clinical Implications:

- Clinicians should be mindful of diabetic patients with joint pain, as they may be at increased risk of septic arthritis.
- Prompt initiation of appropriate antibiotic treatment is essential to improve clinical outcomes and reduce complications.
- Negative microbiological results highlight the complexity of diagnosing septic arthritis and

the importance of considering atypical pathogens or differential diagnoses [7-13].

b. Comparison of results with data from existing literature

In this section of the discussion, we will examine how our results compare to data from the existing literature regarding bilateral septic knee arthritis. We will highlight the similarities and differences, as well as the lessons we can draw from this comparison.

1. ****Comorbidities and predispositions:**** The demographics of our 53-year-old diabetic patient are consistent with some literature studies that have also highlighted diabetes as a potential risk factor for joint infections. This comorbidity was identified as an important consideration in the assessment of septic arthritis [14].
2. ****Clinical presentation:**** The clinical symptoms observed in our patient, such as severe pain, joint swelling and stiffness, largely reflect the typical features of septic arthritis of the knee described in the literature. This similarity reinforces the value of these symptoms in early diagnosis [15].
3. ****Microbiological diagnosis:**** The lack of specific microbiological identification in our patient's microbial cultures is a challenge we share with many literature studies. Pathogens responsible for septic arthritis of the knee can be difficult to grow, which can make microbiological diagnosis ambiguous in many cases [16].
4. ****Antibiotic treatment:**** Our empirical intravenous antibiotic therapy protocol is consistent with literature recommendations, which recommend broad-spectrum coverage to treat joint infections. The progressive clinical improvement of our patient under treatment underlines the potential effectiveness of this approach [17].
5. ****Response to treatment:**** The patient's favorable course, with resolution of symptoms and synovial fluid accumulation, is consistent with the positive results obtained in some previous studies. However, it should be noted that the identification of a specific pathogen can sometimes influence the choice of targeted antibiotic therapy [18-20].

c. Discussion of clinical implications and recommendations for medical practice* [21-26]:

This section of the discussion will focus on the clinical implications of our bilateral septic knee arthritis study and provide recommendations for medical practice based on our findings.

Clinical Implications:

1. **Consideration of comorbidities:** Our case of a diabetic patient with septic arthritis highlights the importance of considering comorbidities when evaluating patients with joint symptoms. Diabetic patients may be more predisposed to joint infections, which should alert clinicians.
2. **Early diagnosis:** Typical clinical symptoms of septic arthritis of the knee, such as pain, swelling and stiffness, are crucial signs that can guide diagnosis. Clinicians should be prepared to consider this condition and perform appropriate investigations if suspected.
3. **Complexity of Diagnosis:** Our study showed that microbiological identification can be a challenge, as microbial cultures remain negative in some cases. Clinicians need to be aware of this complexity and be prepared to explore atypical causes or differential diagnoses.

Recommendations for Medical Practice:

1. **Complete Assessment:** In the presence of acute joint symptoms, a complete clinical evaluation, including a thorough history, meticulous physical examination, laboratory tests and imaging tests, should be undertaken to diagnose septic arthritis early.
2. **Early Antibiotic Treatment:** Prompt initiation of broad-spectrum empirical intravenous antibiotic treatment is essential to control infection and minimize joint damage. However, the selection of antibiotics must be adapted to each case.
3. **Post-treatment follow-up:** Patients with bilateral septic knee arthritis should be closely monitored after the initial phase of treatment. This will make it possible to monitor joint sequelae, assess remission and detect any recurrence.
4. **Patient Education:** It is important to educate patients about the symptoms of septic arthritis and the importance of prompt consultation in case of acute joint pain. Increased awareness can lead to early diagnosis.

In conclusion, our study highlights the diagnostic challenges and issues of managing bilateral septic arthritis of the knee. Clinicians should be attentive to the characteristics of this pathology, especially in diabetic patients, and take prompt action to ensure adequate treatment. Continued research is needed to improve diagnostic and therapeutic approaches to this rare but potentially debilitating condition.

d. Study limitations and suggestions for future research

In this section of the discussion, we will examine the limitations of our study on bilateral septic arthritis of the knee and propose avenues for future research to fill the gaps in our work.

Study limitations:

1. **Unique case:** Our study is based on a single case, which limits the generalization of our results. A larger survey with a larger sample of patients with bilateral septic knee arthritis would be needed to draw more robust conclusions.
2. **Microbiological identification:** Despite repeated efforts, we were unable to identify the pathogen responsible for the infection in a microbiological manner. This limitation is common in septic arthritis studies, but it highlights the need to develop more sensitive diagnostic techniques.
3. **Lack of Long-Term Follow-up:** Our study focused on the period of hospitalization and response to initial treatment. A longer-term follow-up study would be needed to assess longer-term outcomes, including joint sequelae and recurrence.

Suggestions for Future Research:

1. **Multicentre studies:** Multicentre studies would allow data to be collected on a larger number of patients, which would contribute to better characterization of bilateral septic knee arthritis, including its risk factors and course.
2. **Advanced Microbiological Research:** Research to improve the microbiological identification of pathogens responsible for septic arthritis is needed. This could include the use of molecular biology and genomic sequencing techniques to detect low-burden microorganisms.
3. **Risk Factor Assessment:** Further epidemiological studies could help determine specific risk factors associated with bilateral septic knee arthritis, with a focus on comorbidities and patient characteristics.
4. **Therapeutic interventions:** Randomized clinical trials could be undertaken to evaluate the effectiveness of different therapeutic approaches, including antibiotic protocols and surgical interventions, in the treatment of this condition.
5. **Long-term follow-up:** Long-term follow-up studies are needed to assess functional outcomes and quality of life in patients with bilateral septic arthritis after remission.

In conclusion, our study has inherent limitations in its design and scope. However, it offers valuable insights into this rare pathology. Future research should focus on addressing diagnostic challenges, exploring new treatment options, and better

understanding risk factors to improve the management of bilateral septic knee arthritis [27-34].

V. CONCLUSION

Our study of bilateral septic knee arthritis in a 53-year-old diabetic patient highlighted several key elements. First of all, our results showed that this pathology, although rare, can have significant consequences on the quality of life of patients, especially in the absence of a specific microbiological identification. Diabetic comorbidity has been highlighted as a potential risk factor for this joint infection.

The clinical significance of our study lies in the early recognition of bilateral septic arthritis of the knee and the need for prompt empirical intravenous antibiotic treatment. Clinical symptoms, such as pain, swelling and stiffness, should alert clinicians, especially in diabetic patients. Recommendations for medical practice include comprehensive assessment of acute joint symptoms, early initiation of appropriate antibiotic therapy, and careful follow-up to assess response to treatment and monitor long-term joint sequelae.

Ultimately, our study highlights the importance of clinical vigilance and ongoing research to improve the management of bilateral septic knee arthritis. We strongly encourage further research, including multi-centre studies and in-depth epidemiological investigations, to better understand this complex condition and contribute to its early diagnosis and optimal treatment. Educating healthcare professionals about this disease is critical to ensuring positive outcomes for patients with bilateral septic knee arthritis [35-39].

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