Arthroplasty Today 32 (2025) 101637

Contents lists available at ScienceDirect

Arthroplasty Today

journal homepage: http://www.arthroplastytoday.org/

Case Report

Sequential Knee and Hip Arthroplasty in a Patient With Pfeifer-Weber-Christian Disease

Edgar Barros Prieto, MD[a, b], Eduardo Noboa Freile, MD[a, c], Carlos Peñaherrera Carillo, MD[a, d], Francisco Endara Urresta, MD[a, e, *], Alejandro Barros Castro, MD[a, e], Paul Vaca Perez, MD[a, e]

[a] Department of Orthopedics and Traumatology, Hospital Metropolitano, Quito, Pichincha, Ecuador
[b] Specialist in Pelvis and Hip Surgery, Attending Physician, Hospital Metropolitano Quito, Attending Physician, Hospital Vozandes Quito, Quito, Ecuador
[c] Attending Physician, Hospital Metropolitano Quito, Attending Physician, Hospital Vozandes Quito, Quito, Ecuador
[d] Specialist in Orthopedics and Traumatology, Attending Physician, Hospital Vozandes, Quito, Ecuador
[e] Resident in Orthopedics and Traumatology, Universidad Internacional del Ecuador, Hospital Metropolitano, Quito, Ecuador

ARTICLE INFO

Article history:
Received 25 November 2024
Received in revised form
2 January 2025
Accepted 16 January 2025
Available online xxx

Keywords:
Pfeifer-Weber-Christian Disease
Panniculitis
Knee arthroplasty
Hip arthroplasty
Chronic inflammation
Surgical complications

ABSTRACT

Pfeifer-Weber-Christian Disease (PWCD) is a rare chronic inflammatory condition characterized by recurrent painful subcutaneous nodules and systemic manifestations. Long-term corticosteroid therapy, essential for managing PWCD, predisposes patients to complications such as osteoarthritis and avascular necrosis, often necessitating joint replacement surgeries. This report discusses a 38-year-old woman with a 15-year history of PWCD who underwent sequential knee and hip arthroplasty due to severe joint degeneration. The patient presented with debilitating pain, significant functional impairment, and advanced degenerative changes in the left knee and right hip. A multidisciplinary team provided comprehensive perioperative care to address the complexities of chronic inflammation, immunosuppression, and poor bone quality. This case highlights the feasibility of joint replacement in PWCD patients when a multidisciplinary approach and meticulous planning are applied. It underscores the importance of individualized surgical strategies and extended follow-up to optimize outcomes in complex cases.

Introduction

Pfeifer-Weber-Christian Disease (PWCD) was first described by Pfeifer in 1892 and later established in the 1920s by Weber and Christian in 1928. It is an extremely rare condition, with only 19 cases of Weber-Christian Disease reported since 1951, 10 of which were associated with panniculitis. Its incidence remains unknown [1–3,21,22]. There are no reports in the literature of simultaneous coexistence of hip and knee osteoarthritis. PWCD presents significant challenges in orthopaedic management due to its rarity and the associated complications of chronic inflammation and immunosuppression. These challenges are informed by documented cases in the literature and principles derived from similar chronic inflammatory conditions. Specific perioperative and surgical strategies are essential to optimize outcomes in these patients [1–3,21,22].

Inflammation of adipose tissue is known as panniculitis, a condition associated with numerous systemic diseases. It is a rare chronic inflammatory entity characterized by inflammation of subcutaneous adipose tissue, leading to the formation of painful, recurrent nodules. These nodules, typically located on the extremities and trunk, are often accompanied by systemic symptoms such as fever, lethargy, fatigue, anorexia, weight loss, night sweats, arthralgia, and, in some cases, visceral involvement.

The spectrum of diseases associated with panniculitis is broad, ranging from trauma-related injuries to systemic infections such as tuberculosis and fungal infections, inflammatory conditions, rheumatological disorders like systemic lupus erythematosus and rheumatoid arthritis, malignancies such as lymphoproliferative disorders, solid organ tumors, pulmonary diseases, and alpha-1 antitrypsin deficiency. The idiopathic variant is referred to as PWCD, an extremely rare condition considered a diagnosis of exclusion that requires extensive diagnostic evaluation [22].

Histopathologically, PWCD manifests as lobular panniculitis without vasculitis, characterized by necrotic adipocytes with mixed

* Corresponding author. Republica de el Salvador n34-311 y moscu, Quito, Ecuador 170505. Tel.: 59 399 247 2828.
E-mail address: fren9123@hotmail.com

https://doi.org/10.1016/j.artd.2025.101637

inflammatory infiltrates and fibrosis, distinguishing it from other panniculitis forms such as erythema nodosum. The exact cause of PWCD is unknown, although an autoimmune or immune-mediated etiology is suspected, alongside its association with connective tissue disorders, viral infections, and certain medications [4–6].

In the orthopaedic context, PWCD presents multiple challenges when patients require joint replacement procedures. Chronic inflammation and fat necrosis can complicate surgical planning and postoperative prognosis. Knee and hip arthroplasty, procedures inherently associated with risks such as infection, prosthetic loosening, and mechanical failure, become even more complex in patients with PWCD. Recurrent inflammation and possible systemic involvement predispose these patients to surgical site complications, including impaired healing, increased infection rates, and suboptimal implant integration due to the constant disruption of the local and systemic immune environment in patients with rare inflammatory diseases [4–8].

In addition to perioperative risks, long-term postoperative management is critical. The chronic and recurrent nature of the disease poses a risk of exacerbations that can trigger an inflammatory response around the implant, potentially leading to synovitis, granulation tissue formation, and, ultimately, prosthetic loosening or early surgical revision. Furthermore, patients with PWCD may have a reduced or altered immune reserve, particularly if receiving immunosuppressive therapy to control the disease, further increasing the risk of postoperative infections [4–8].

Joint replacement surgery in PWCD patients requires careful planning and a multidisciplinary approach, integrating input from clinicians, rheumatologists, dermatologists, infectious disease specialists, and the orthopaedic surgical team. Strategies such as preoperative optimization of the patient's immune status, extended antibiotic prophylaxis, and adherence to strict intraoperative asepsis and antisepsis protocols should be considered. Additionally, managing systemic inflammation and controlling the underlying disease are crucial elements for minimizing panniculitis reactivation at the surgical site and optimizing clinical outcomes.

This case report describes a patient diagnosed with PWCD who required hip and knee arthroplasty due to advanced osteoarthritis and disabling pain. Through this case, we explore the specific challenges of prosthetic surgery in the context of a rare chronic inflammatory disease, detailing potential complications and the strategies employed to address them. The experience gained from this case provides valuable insights for orthopaedic surgeons and multidisciplinary teams on optimally managing the challenges presented by arthroplasty in patients with unusual inflammatory conditions [8–10].

Case history

A 38-year-old female patient with a body mass index of 28 was diagnosed 15 years ago with Pfeifer-Weber-Christian (PWC) panniculitis. She was on immunosuppressive therapy with mycophenolate (750 mg orally in the morning and 500 mg at night) and methylprednisolone (4 mg every 12 hours), a regimen initiated 4 years ago. The patient also had additional comorbidities, including pancreatic insufficiency treated with enzyme replacement, gastritis managed with dexlansoprazole (40 mg once daily), hypothyroidism treated with levothyroxine (75 μg daily), vitamin D deficiency supplemented biannually, and recurrent urinary tract infections requiring antibiotic treatment. Her surgical history included an abdominal herniorrhaphy performed 2 years earlier and an aortoiliac endoprosthesis implantation 5 years ago.

The patient presented with left knee valgus deformity and chronic knee pain, ongoing for 8 years. The pain had progressively worsened, becoming disabling and significantly limiting her daily activities, requiring crutches for ambulation. Additionally, she reported right hip pain, contributing to her mobility difficulties.

On physical examination, there was a 3-cm shortening of the right lower limb. The right hip displayed limited, painful mobility (flexion: 60°; abduction: 10°; external rotation: 0°). The left knee exhibited a 30° valgus deformity, trophic skin changes compatible with her underlying condition, positive Zohlen and brushing tests (the **Zohlen test** assesses patellofemoral pathology by applying pressure on the patella while the quadriceps contracts; the **brushing test** detects joint effusion by observing the displacement of synovial fluid under the skin during palpation), crepitus during flexion-extension, pain upon palpation of the joint line, and restricted motion (flexion: 110° with pain; extension: −30°). Additionally, there was medial laxity graded 2+, hyperpigmentation, and increased skin laxity (Fig. 1).

Imaging studies included anteroposterior and axial radiographs of the pelvis and hips, revealing Kellgren and Lawrence Grade IV osteoarthritis of the right hip, with joint space loss, femoral head elevation, neoacetabulum formation, complete femoral head deformation, and multiple osteophytes. Standing anteroposterior and lateral radiographs of both knees showed Kellgren and Lawrence Grade IV osteoarthritis of the left knee, characterized by valgus deformity, multiple osteophytes, and patellofemoral joint space loss. Radiographs also suggested significant osteoporosis and widened medullary canals. A Farril test (which measures limb length discrepancy using standardized radiographic techniques) confirmed a 3-cm discrepancy in lower limb length (Figs. 2-5).

Figure 1. Clinical photograph of the patient. This image illustrates the physical presentation of the patient, highlighting the characteristic findings associated with Pfeifer-Weber-Christian Disease, including trophic skin changes, hyperpigmentation, and the 30° valgus deformity in the left knee. These clinical features underscore the systemic and localized challenges in managing advanced joint disease in patients with chronic inflammatory conditions.

Figure 2. Anteroposterior (AP) radiograph of both knees and lateral radiograph of the left knee. The images reveal advanced Grade IV osteoarthritis in the left knee, characterized by significant valgus deformity, joint space obliteration, multiple osteophytes, and severe patellofemoral degeneration. These radiographic findings confirm the extensive structural damage and serve as critical preoperative references for planning the arthroplasty procedure.

Given the clinical and radiographic findings, it was concluded that the patient required arthroplasty for both affected joints to improve her quality of life and alleviate significant health challenges. A 2-stage surgical plan was devised, starting with knee arthroplasty due to its greater symptom severity and disability compared to the right hip, with an 8-month interval between procedures. To optimize her preoperative status, medication adjustments and stabilization of her underlying condition were coordinated under clinical supervision, including corticosteroid pulses administered days before surgery and a preanesthetic evaluation to ensure optimal management during the surgical procedure.

Procedure

First stage: left knee arthroplasty

The first procedure involved a left knee arthroplasty using a medial parapatellar approach (von langenbeck). The initial incision and soft-tissue dissection were carefully planned to minimize damage to adjacent structures and preserve the vascularity of the skin and subcutaneous tissues. A hinged prosthesis (Link) was selected to provide enhanced stability and congruence, particularly given the ligamentous instability present in this case. Bone preparation was meticulous, with particular attention paid to achieving optimal alignment and balancing of the knee to ensure long-term functionality. Low-reactivity sutures were used during closure to minimize inflammation, and a layered closure technique was employed to promote wound healing. Due to concerns regarding tissue fragility, negative pressure wound therapy (NPWT) was avoided. Strict asepsis was maintained throughout the procedure to reduce infection risk (Fig. 6).

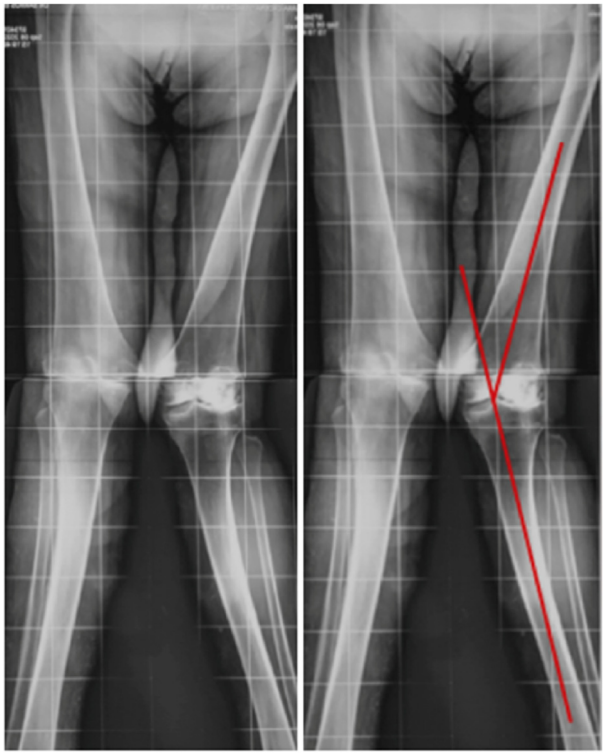

Figure 3. Panoramic radiographs of the lower limbs. The panoramic imaging highlights the overall alignment and structural condition of the lower limbs, revealing a 3 cm discrepancy in limb length, severe valgus deformity of the left knee, and evidence of advanced joint degeneration in the right hip. These findings are crucial for surgical planning and postoperative alignment correction.

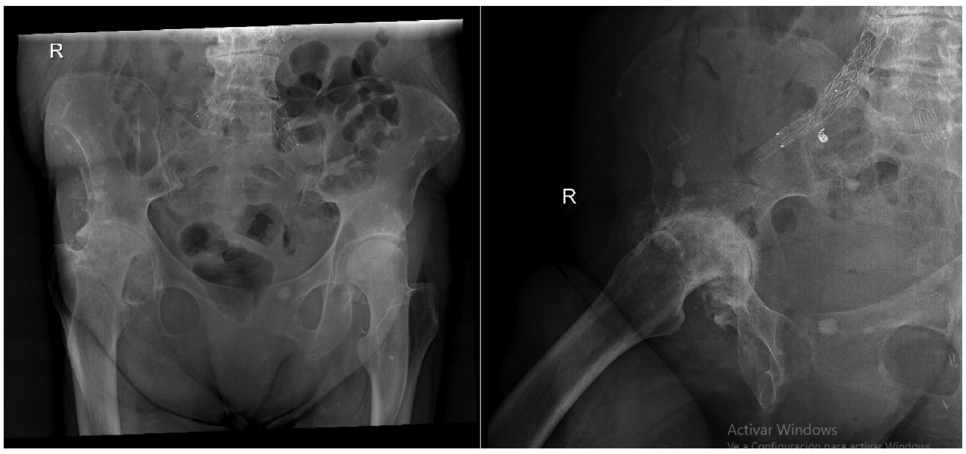

Figure 4. Anteroposterior (AP) and axial radiographs of the right hip. These radiographs demonstrate advanced Grade IV osteoarthritis of the right hip, with complete joint space obliteration, femoral head collapse, neoacetabulum formation, and extensive osteophyte development. The images also highlight the poor bone quality, which necessitated the use of a cemented femoral prosthesis and dual-mobility head during arthroplasty.

Second stage: right hip arthroplasty (8 months later)

An 8-month interval between surgeries was chosen to ensure complete recovery from the initial procedure, optimize the patient's systemic condition, and minimize inflammatory and infectious risks associated with closely spaced interventions. This interval aligns with recommendations for staged arthroplasties in similar contexts.

Eight months post knee surgery, a right hip arthroplasty was performed. Preoperative planning included the use of 3-dimensional (3D) printing technology, which allowed the creation of patient-specific templates to optimize prosthesis placement and alignment. In this case report, 3D printing was used in the second stage of treatment—right hip arthroplasty. Specifically, 3D printing technology enabled the creation of patient-specific templates. These templates were critical for optimizing prosthesis placement and alignment during the surgical procedure. This approach ensured precise customization to the patient's unique anatomy, which is particularly important in cases involving poor bone quality and structural deformities, as encountered here.

The surgery used a posterolateral approach (Kocher-Langenbeck), chosen for its ability to provide excellent exposure of the acetabulum and preserve critical soft-tissue structures. The femoral canal was prepared to accommodate a cemented femoral prosthesis, which was necessary due to the patient's poor bone quality and widened canal. A dual-mobility head was selected to enhance joint stability and reduce the risk of dislocation. The procedure also included tenotomies of the psoas and adductors to address significant soft tissue contractures that were limiting hip mobility.

Tenotomies were required in this case because the patient had significant soft-tissue contractures limiting hip mobility. Specifically, the **psoas** and **adductor muscles** were affected, likely due to chronic inflammation, prolonged immobility, or adaptive shortening secondary to joint degeneration and altered biomechanics caused by the underlying PWCD.

These contractures not only restricted the range of motion but also contributed to the patient's pain and functional impairment. Performing the tenotomies allowed the surgical team to:

1. Restore joint mobility: By releasing the contracted tissues, the joint could be properly aligned and positioned, ensuring the effectiveness of the hip arthroplasty.
2. Improve prosthesis functionality: Proper soft-tissue balance is critical to the success of joint replacement, as unresolved

Figure 5. 3D reconstruction and 3D planning for hip arthroplasty. The 3D reconstruction and preoperative planning images illustrate the detailed anatomical evaluation of the right hip, including the extensive bone deformities and femoral head collapse. These tools facilitated precise surgical planning, enabling the selection of a cemented femoral prosthesis and dual-mobility head to address the patient's poor bone quality and ensure optimal implant stability. 3D, 3-dimensional.

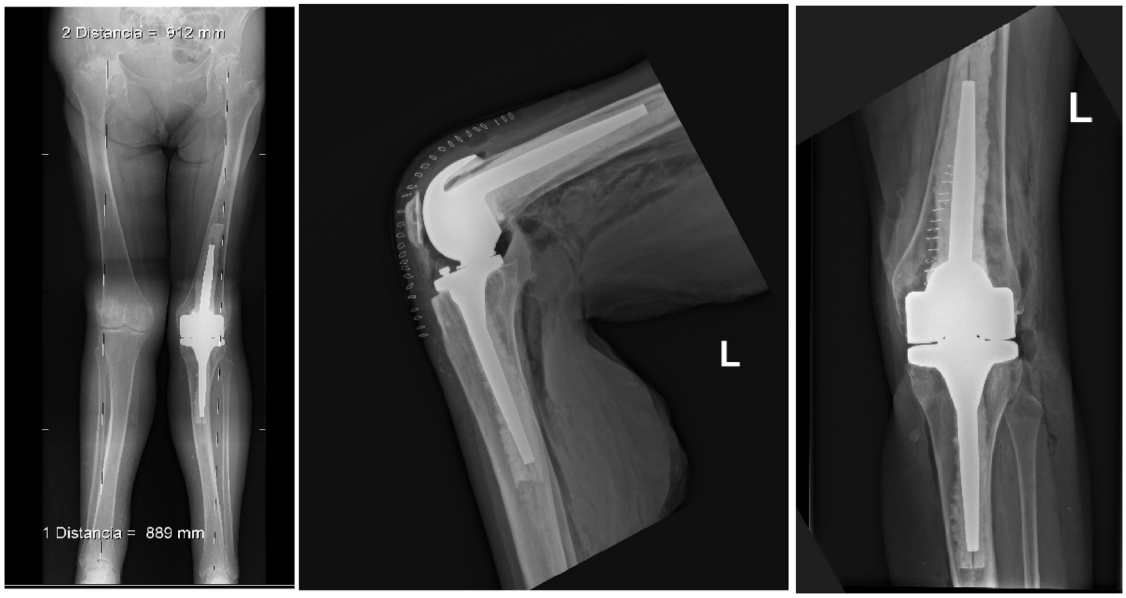

Figure 6. Postoperative outcome of knee arthroplasty. This image shows the immediate postoperative results following left knee arthroplasty with a hinged prosthesis. The correction of the severe valgus deformity is evident, and the alignment and stability of the joint are restored. The use of low-reactivity sutures minimized inflammation and promoted optimal wound healing in this patient with underlying chronic panniculitis.

contractures can lead to abnormal loading, increased wear, or dislocation of the prosthesis.

3. Optimize postoperative outcomes: Addressing these soft-tissue issues intraoperatively reduces the risk of persistent pain, stiffness, or compromised functional recovery following the surgery.

Careful hemostasis and a meticulous closure technique were employed to ensure optimal healing (Fig. 7).

Considerations for skin closure

In patients with chronic inflammatory diseases such as PWCD, skin closure poses significant challenges due to skin fragility, impaired healing, and an elevated risk of infection. In this case, surgical staples were chosen over traditional sutures, allowing for faster and more uniform closure, reducing surgical time, and minimizing trauma to compromised tissues. Surgical staples, being metallic and less reactive, decreased local inflammation compared to conventional suture materials, facilitating a more controlled healing process. This approach proved particularly beneficial for a patient with prolonged immunosuppression and high susceptibility to complications, offering an effective and safe alternative for managing surgical wound closure.

Postoperative care

Pain management

Effective pain control is critical and must be tailored to the inflammatory characteristics of panniculitis. A multimodal analgesic protocol was implemented, avoiding nonsteroidal anti-inflammatory drugs due to the patient's history of gastritis and potential gastrointestinal and renal side effects. Instead, long-acting opioids were combined with acetaminophen to manage

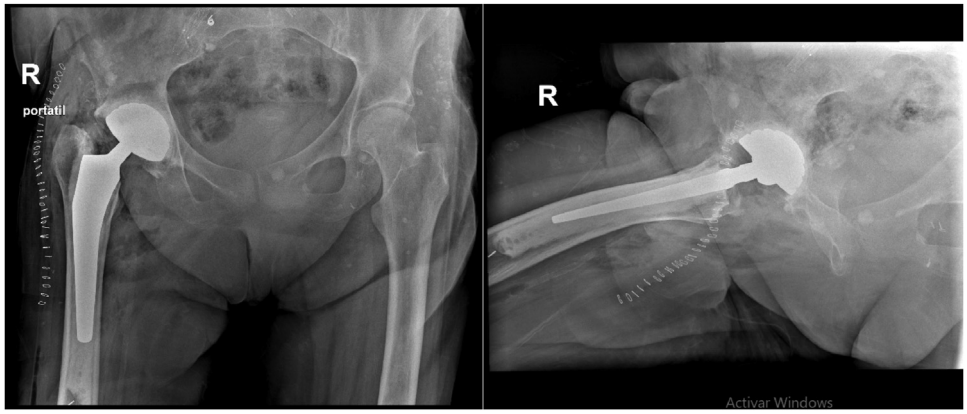

Figure 7. Postoperative outcome of hip arthroplasty. This image depicts the immediate postoperative results following right hip arthroplasty. The cemented femoral prosthesis and dual-mobility head successfully addressed the advanced osteoarthritis and poor bone quality. The surgical intervention restored hip alignment and improved joint stability, minimizing the risk of dislocation. Careful wound closure techniques and extended antibiotic prophylaxis were applied to reduce the risk of complications associated with the patient's chronic inflammatory condition.

baseline pain. Corticosteroid pulses in low doses were administered to reduce systemic inflammation, and methylprednisolone was carefully adjusted postoperatively to balance inflammation control with the risk of wound-healing inhibition. Corticosteroid adjustments in this case were tailored to balance the need for inflammation control associated with PWCD while minimizing risks related to impaired wound healing and immunosuppression. The specifics of the adjustments included:

Preoperative adjustments

- Corticosteroid pulse:
  - o Dose: 250 mg of methylprednisolone administered intravenously every 8 hours.
  - o Duration: For 24 hours prior to surgery.
  - o Purpose: To control systemic inflammation, stabilize the underlying disease (PWCD), and minimize the risk of an inflammatory flare during surgery.

Postoperative adjustments

1. Immediate postoperative period (days 1-3):
   - o Dose: 40 mg/day of methylprednisolone intravenously, divided into 2 doses (20 mg every 12 hours).
   - o Purpose: To continue inflammation control while avoiding excessive suppression of wound healing.
2. Subsequent postoperative period (days 4-7):
   - o Dose: 20 mg/day of methylprednisolone intravenously, divided into 2 doses (10 mg every 12 hours).
   - o Purpose: Gradual tapering to reduce systemic effects and promote immune recovery.
3. Transition to maintenance (from day 8 onward):
   - o Dose: Returned to the patient's presurgical maintenance dose of 4 mg of methylprednisolone every 12 hours, administered orally.
   - o Purpose: To manage the chronic inflammation associated with PWCD and prevent disease exacerbations.

This individualized corticosteroid protocol was developed in collaboration with rheumatologists to optimize surgical outcomes while addressing the complexities of the patient's systemic inflammatory condition.

The patient was closely monitored for adverse reactions to these medications, with regular assessments conducted during the hospital stay and follow-up visits.

Infection risk management

Patients with PWCD are at an increased risk of infections due to chronic inflammation and prolonged immunosuppressive therapy, such as mycophenolate.

Given the chronic inflammatory state and prolonged immunosuppressive therapy, the patient was at an increased risk for infections. Extended antibiotic prophylaxis with cefazolin was administered for 14 days following each procedure, guided by infectious disease specialists (for 7 days, intravenous cefazolin was administered 1 g every 12 hours, then cefadroxillo was administered 500 mg orally every 12 hours for the remaining 7 days). In addition, laboratory tests, including serial white blood cell counts, C-reactive protein, and wound cultures, were performed routinely to detect early signs of systemic or local infection (day 3, 6, 9, and 30). Strict asepsis protocols were adhered to throughout hospitalization and postoperative care.

Wound healing

Healing challenges arose from the patient's subcutaneous inflammation and skin fragility. During the initial 72 hours postprocedure, the wound was treated and covered with vaseline gauze and sterile compresses to minimize irritation and protect the fragile skin. These dressings were chosen for their nonadherent properties, which were essential to prevent further trauma to the already sensitive area.

NPWT was considered for this high-risk patient due to its benefits in promoting controlled healing, enhancing granulation tissue formation, and reducing the risk of dehiscence. However, NPWT was ultimately not implemented because of concerns regarding the fragility of the patient's skin and the potential for complications associated with adherent dressings.

After the initial 72-hour period, the vaseline gauze and compresses were carefully removed, and Rifocin was applied directly to the wound to promote healing and prevent infection. This regimen continued until the staples were removed. Daily wound inspections were conducted during this time to ensure that the healing process remained on track and to promptly address any signs of infection or other complications.

The patient remained hospitalized for 7 days following each procedure to facilitate close monitoring and ensure that wound care protocols were strictly adhered to. The healthcare team's approach emphasized gentle handling and meticulous attention to the patient's unique needs, balancing effective treatment with the minimization of further irritation to the compromised skin.

Thromboprophylaxis

Due to the patient's underlying condition and increased risk of thromboembolic events, thromboprophylaxis was initiated with rivaroxaban 10 mg daily for 30 days following each procedure. This regimen was selected to provide effective anticoagulation while minimizing bleeding risk, with regular monitoring of coagulation markers during the hospital stay and outpatient follow-up.

Rehabilitation

Early rehabilitation was initiated to prevent joint stiffness while minimizing stress on the joint and soft tissues. Continuous passive motion devices were employed, starting with limited ranges of motion that were gradually increased. Assisted ambulation using a walker or cane began in the initial postoperative days, with weight-bearing adjusted as pain and inflammation allowed.

Immunological management

Adjustments to immunosuppressive therapy were necessary to balance the risk of infection and support adequate healing. Mycophenolate and corticosteroid levels were monitored and adjusted in collaboration with the rheumatologist or autoimmune disease specialist. Regular assessments of liver and renal function, along with complete blood counts, were conducted to detect potential medication-related adverse effects.

Long-term follow-up

Given the chronic nature of PWCD, long-term follow-up is essential to detect inflammation recurrences, healing issues, or prosthetic complications. Periodic assessments of joint function and imaging studies were performed to evaluate prosthetic stability and periarticular tissue health.

Patients on immunosuppressive therapy, such as mycophenolate, are particularly susceptible to postoperative infections. Antibiotic prophylaxis was extended based on the individual infection risk. Early signs of surgical wound infection or systemic symptoms were closely monitored. Laboratory tests, including blood counts and cultures, were used to detect opportunistic infections, with antibiotic therapy adjusted as necessary.

The patient demonstrated excellent outcomes at 18 months of follow-up, with no reported complications. Both pain and function showed significant improvement, as evidenced by patient-reported outcome measures. The Visual Analog Scale for pain decreased from an initial 7/10 to 1/10, and functional capacity, as assessed by the Knee Injury and Osteoarthritis Outcome Score, improved from 50 to 85 points. Additionally, the International Knee Documentation Committee subjective score increased from 42 to 92, reflecting the patient's substantial recovery in daily and sports-related activities. These results underscore the effectiveness of the intervention and the absence of adverse effects during the follow-up period.

Discussion

PWC panniculitis is a rare lobular panniculitis without vasculitis, characterized by chronic subcutaneous adipose tissue inflammation, recurrent inflammatory nodules, and systemic symptoms. These features complicate any surgical intervention, particularly arthroplasty. Surgical treatment in patients with this condition presents significant challenges due to the constant inflammatory state and the potential need for chronic immunosuppression. This case report describes the management of a patient with PWC who required sequential knee and hip arthroplasty, addressing the specific considerations and postoperative management required in this clinical context [10–12].

In this case, the surgical plan involved a staged approach: knee arthroplasty was performed first, followed by hip arthroplasty after an 8-month interval. This gradual strategy is recommended in patients with chronic inflammatory diseases due to the risks of inflammatory overload and wound-healing complications associated with simultaneous intervention on multiple joints. Literature supports this approach in immunocompromized patients, highlighting that reduced surgical trauma and staggered procedures lower the risk of inflammatory exacerbations that could impair implant integration and prolong recovery time [12–16].

In PWC patients, avoiding surgical techniques that increase the risk of wound dehiscence or complications is paramount. Chronic inflammation in adipose tissue predisposes these patients to skin and subcutaneous tissue fragility, elevating the risk of infection and poor healing. Using less traumatic techniques for compromised tissues has proven effective in reducing complication rates and improving functional recovery in such cases.

The perioperative management for this patient was carefully adapted, including extended antibiotic prophylaxis and immunosuppressant adjustments with preoperative corticosteroid pulses. Literature suggests that in patients with chronic inflammatory diseases under immunosuppressive therapy, extending antibiotic prophylaxis and clinically supervised adjustments of immunosuppressants help prevent infections and promote adequate healing. In this case, the administration of mycophenolate and methylprednisolone was carefully monitored to balance PWC control and infection risk, considering the significant role prolonged immunosuppression plays in increasing postoperative infection risks [16–18].

Nonadherent dressings and infrequent, cautious dressing changes were employed to prevent additional trauma to inflamed tissues, aligning with current recommendations for wound management in patients with PWC or similar inflammatory conditions.

Despite the precautions taken, this patient's clinical experience underscores the need for thorough long-term follow-up to monitor both implant stability and potential inflammatory recurrences at the surgical site. Inflammatory reactivations in PWC patients could trigger synovitis around the prosthesis, a process associated with prosthetic loosening in other systemic inflammatory disease contexts. Thus, maintaining continuous control of systemic inflammation and monitoring joint functionality and prosthetic stability through imaging and periodic clinical evaluations is critical [18–20].

Finally, although reports of arthroplasty in PWC patients are extremely rare, this case provides valuable clinical data to the literature. It demonstrates that, with a multidisciplinary approach and careful perioperative planning, joint replacements can be successfully performed in this patient population, achieving satisfactory outcomes. However, further studies are needed to evaluate long-term results and develop standardized surgical management protocols for patients with rare inflammatory conditions such as PWC. This report contributes to the existing literature and provides a framework for decision-making in similar cases, emphasizing the importance of surgical adaptation and immunological management in achieving successful arthroplasty outcomes for PWC patients [18–20].

Key points in surgical management

1. Infection prevention: Extended antibiotic prophylaxis and strict aseptic techniques were critical in this case.
2. Bone quality: Severe osteoporosis necessitated the use of cemented components for stable fixation.
3. Multidisciplinary collaboration: Coordination among orthopaedic surgeons, rheumatologists, and infectious disease specialists ensured comprehensive care.

Current controversies and future considerations

1. Timing of surgery: Optimal timing for arthroplasty during active disease vs remission remains debated.
2. Perioperative immunosuppression: Balancing infection prevention with disease control requires standardized protocols.
3. Long-term outcomes: More data are needed on prosthetic survival and recurrence of panniculitis postarthroplasty.

Summary

This case demonstrates the successful management of sequential knee and hip arthroplasty in a PWCD patient, emphasizing the importance of individualized care and a multidisciplinary approach. Despite the inherent challenges, the patient achieved significant improvements in pain relief, mobility, and quality of life. Future research should focus on refining perioperative protocols and understanding long-term outcomes in similar cases.

Conflicts of interest

The authors declare there are no conflicts of interest.

For full disclosure statements refer to https://doi.org/10.1016/j.artd.2025.101637.

Informed patient consent

The author(s) confirm that written informed consent has been obtained from the involved patient(s) or if appropriate from the parent, guardian, power of attorney of the involved patient(s); and, they have given approval for this information to be published in this case report (series).

CRediT authorship contribution statement

Edgar Barros Prieto: Writing – original draft, Validation, Supervision, Conceptualization. **Eduardo Noboa Freile:** Validation, Methodology. **Carlos Peñaherrera Carillo:** Writing – review & editing. **Francisco Endara Urresta:** Writing – original draft, Methodology, Investigation. **Alejandro Barros Castro:** Writing – review & editing. **Paul Vaca Perez:** Formal analysis.

References

[1] Hirasaki S, Murakami K, Kanamori T, Mizushima T, Hanayama YKN. Weber-Christian disease developing into mediastinitis and pleuritis with massive pleural effusion. Intern Med 2015;51:943–7.
[2] Yoshimura A, Itoyama S, Mori S, Mori W, Inoue G. An autopsy case of Weber-Christian with immune complex glomerulonephritis. Nihon Jinzo Gakkai Shi 1988;30:291–6.
[3] Oram S, Cochrane GM. Weber-Christian disease with visceral involvement. Br Med J 1958;2:281.
[4] Dupont AG, Verbeelen DL. Weber-Christian panniculitis with membranous glomerulonephritis. Am J Med 1993;75:527–8.
[5] Başkan EB, Sarıcaoğlu H, Tunalı Tolunay SS. Effective treatment of relapsing idiopathic nodular mycophenolate mofetil Effective treatment of relapsing idiopathic nodular panniculitis (Pfeifer—Weber—Christian disease) with mycophenolate mofetil. J Dermatolog Treat 2003;14:57–60.
[6] Wang Y, Zhao J, Ji LI, Zhang SZZ. Weber-Christian disease present with lung nodules dramatically improved with corticosteroid therapy: one case report and literature review. Int J Rheum Dis 2018;21:573–8.
[7] Henriksson P, Hedner U, Nilsson IM, Nilsson P. Generalized proteolysis in a young woman with Weber-Christian disease (nodular nonsuppurative panniculitis). Scand J Haematol 1975;14:355–60.
[8] Mori K, Hiratsuka I, Sakai H, Hiwatashi K, Takahashi T. Hemorrhagic diathesis in Weber-Christian disease. Tohoku J Exp Med 1976;118:227–43.
[9] Kimura H, Kako M, Yo K. Alcoholic hyalins (Mallory bodies) in a case of Weber-Christian disease: electron microscopic observations of liver involvement. Gastroenterology 1980;78:807–12.
[10] Ciclitira PJ, Wight DGD, Dick AP. Systemic Weber-Christian disease: a case report with lipoprotein profile and immunological evaluation. Br J Dermatol 1980;103:685–93.
[11] Hotta T, Wakamatsu Y, Matsumura N, Nishida K, Takemura S, Yoshikawa TKM. Azathioprine-induced remission in Weber-Christian disease. South Med J 1981;74:234–7.
[12] Kirch W, Duhrsen U, Hoensch H, Ohnhaus E. Cyclophosphamide-induced remission in Weber-Christian panniculitis. Rheumatol Int 1985;5:239–40.
[13] Enk AH, Knop J. Treatment of relapsing idiopathic nodular panniculitis (Pfeifer-Weber-Christian disease) with mycophenolate mofetil. J Am Acad Dermatol 1998;39:508–9.
[14] Hojo N, Hasegawa H, Iwamasa K, Hojo S, Fujita S. A case of Weber-Christian disease associated with myelodysplastic syndrome. Mod Rheumatol 2004;14:73–6.
[15] Hagag AA, Barakat AN. Recurrent panniculitis: Weber-Christian disease. Eur J Inflamm 2016;14:113–7.
[16] Broe PJ, Kelly CJ, Bouchier-Hayes DJ. Systemic Weber-Christian disease with portal hypertension and oesophageal varices. J R Soc Med 1988;81:669–70.
[17] Heseltine D, Bramble M, Cole A, Clarke DCW. Weber-Christian disease producing splenic vein occlusion and bleeding gastric varices: successful treatment with sc lerotherapy. Postgrad Med J 1990;66:321–5.
[18] Saadeh S. Nonalcoholic fatty liver disease and obesity. Nutr Clin Pr 2007;22:1–10.
[19] Sass DA, Chang P, Chopra KB. Nonalcoholic fatty liver disease: a clinical review. Dig Dis Sci 2005;50:171–80.
[20] Alba LMLK. Review article: non-alcoholic fatty liver disease. Aliment Pharmacol Ther 2003;17:977–86.
[21] Somalanka S, Udo I, Nair H, Baikunje S. Pfeifer-Weber-Christian disease and successful treatment with mycophenolate mofetil: a case report. BMJ Case Rep 2019;12:e229167. https://doi.org/10.1136/bcr-2018-229167.
[22] White JW Jr, Winkelmann RK. Weber-Christian panniculitis: a review of 30 cases with this diagnosis. J Am Acad Dermatol 1998;39:56–62.