

Poster Abstracts

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[P01] Osteoporosis-Related Infection: Novel Treatment

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Background

Osteoporosis is a common skeletal disease characterised by reduced bone mass and increased fracture risk, affecting around 13% of women and 15% of men over 50 years old in the UK. Low bone mineral density (BMD) is independently associated with higher rates of pneumonia, UTIs and sepsis, suggesting osteoporosis is an under-recognised risk factor for infection-related morbidity and mortality. This disease arises from altered osteoblast-derived factors that support lymphocyte survival, alongside low-grade inflammation causing immune cell dysfunction.

Objective

This project examines how improving BMD with anabolic therapy may modify infection risk in osteoporosis, focusing on the novel agent romosozumab.

Methods

A narrative review of cohort data linking BMD to infection, alongside phase 3 trials and systematic reviews of romosozumab, was used to integrate bone-immune pathophysiology with emerging therapeutic evidence.

Results

Individuals with osteopenia and osteoporosis show significantly lower survival free of pneumonia and sepsis over long-term follow-up than those with normal BMD. Romosozumab, a humanised monoclonal antibody against sclerostin, increases bone formation, reduces resorption, and significantly improves BMD and fracture outcomes in postmenopausal women and in men with osteoporosis. By restoring skeletal integrity and potentially altering the inflammatory bone microenvironment, romosozumab may reduce infection-related complications, although direct infection endpoints remain to be fully established.

Conclusion

Osteoporosis should be regarded as a modifiable risk factor for serious infection. Romosozumab offers a way to improve BMD and fracture risk but also helps lower infection burden, supporting earlier and more targeted treatment of low BMD.

[P02] Management of Large Infected Bone Defects around the Ankle with Bone Transport over a Retrograde Nail

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Background

Ankle fusion is a good treatment for complex pathology around the ankle(1). However, both trauma and infection can create large bone defects making fusion difficult(2). We describe two cases with large, infected defects around the ankle, managed with a novel technique. One had severe infection of a total ankle replacement (PJI) and the other sustained major open trauma of the distal tibia and ankle joint with infection (FRI), while serving in the Ukrainian armed forces.

Method

Both patients had excision of the dead and compromised tissues around the ankle, creating major segmental bone defects (5 and 8cm respectively). Deep tissue sampling and local and systemic antimicrobial therapy were performed. The defect was stabilized by a retrograde intramedullary nail and an Ilizarov circular fixator. The soft tissue defects were closed at the time of nail insertion, including an ALT flap in the FRI case. The bone defect was managed with bone transport over the IM nail. Cultures revealed complex polymicrobial infections with multi-resistant organisms. Once the bone transport had reached docking, the 'ankle' was fused with internal fixation and the Ilizarov frame removed. Both cases united with eradication of infection at final review. Function was good with comfortable walking for several kilometres.

Discussion

This technique, combining retrograde nailing, antegrade bone transport and local antimicrobials was effective in these difficult cases. It can be performed in one or two stages. We recommend avoiding delays in definitive treatment and antibiotic-coating of the IM nail to avoid colonisation of the implant(3).

Management of Large Infected Bone Defects around the Ankle with Bone Transport over a Retrograde Nail

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Background

Ankle fusion is a good treatment for complex pathology around the ankle¹. However, both trauma and infection can create large bone defects making fusion difficult to achieve². We describe two cases with large infected defects around the ankle, managed with a novel technique.

Case One

A 64 year old woman had a total ankle arthroplasty for generative arthritis in 2018. She functioned well for 5 years. In 2022, she presented with a large abscess over the dorsum of the foot, loss of ankle movement, pyrexia and nausea. The abscess was drained and fluid plus tissue samples were sent for microbiology culture. The abscess communicated with the ankle implant which was loose in very soft tibial base, confirming a late acute prosthetic joint infection.

Cultures grew *Staph. aureus*, treated with IV Vancomycin. She was then referred to the Oxford BIU after 10 days of therapy.

At referral, she was systemically well with a lot of pain in the ankle and a discharging wound (Fig 1). Plain x-ray showed the loose implant with osteolytic bone (Fig 2). Treatment options were discussed and she opted for removal of the loose infected prosthesis and ankle fusion³.

At surgery, the loose implant was removed with 5.2cm of grossly infected dead bone. The tibia was preserved.

Five deep samples were taken and empiric antibiotics given. An Ilizarov frame was applied to allow bone transport. A retrograde tibial nail was passed through 32mm Cerament G[®], injected into the cancellary to coat the nail and protect it from colonisation⁴.

A corticotomy was created in the upper tibia and the central segment transported at 1mm/day (Fig 3). Cultures grew *Staph. aureus* and *Pseudomonas aeruginosa*, treated with oral antibiotics for 6 weeks.

After 54 days, the docking site was secured with 2 screws through the tibia and the frame removed (Figs 3-5). Total frame time was 81 days. The tibial regenerate and ankle fusion consolidated over 3 months.

At 39 months, she was infection-free and united (Fig 6a & b). Her only symptom was mild mid-foot discomfort. She walked up to 3km with a simple in-shoe heel cushion only.



Figure 1 and 2: Initial presentation



Figure 3: Retrograde bone transport over retrograde antibiotic coated nail. Fig 4 shows the Cerament G has permeated the bone defect (arrow). Fig 5 shows the docking site secured through the tibia to fix the transport nail.

Discussion

Many techniques have been described to manage bone loss around the ankle, but all have major complications and involve prolonged time in treatment. These cases illustrate a reliable technique for this very difficult problem, with acceptable treatment times. Full weight-bearing can be allowed once the heel wound from nail insertion is healed. It can be performed as a single stage procedure, as in case one, but we recommend coating the nail in local antibiotics to reduce the risk of recurrent infection.

Case Two

A 32 year old man sustained a blast injury to both lower limbs while serving in the Ukrainian armed forces. He was evacuated to Norway 3 weeks after injury. At presentation, he had severe open fractures with bone and soft tissue loss in the right distal tibia (Fig 1). He was otherwise well but smoked 30 cigarettes/day. Initial treatment was with debridement, deep sampling, empiric local and systemic antibiotics and external fixation (Fig 2). Cultures grew multi-resistant polymicrobial bacteria from the initial debridement and fungus from the last debridement.



Figure 1 and 2: Appearance open ankle

Fig 2: Fixation, insertion of PMMA spacer, Rt nail and ALT flap

The first step of definitive treatment was insertion of a hindfoot nail and defect filling with a temporary PMMA spacer, performed 25 days after the initial debridement. The wound was closed with a free antero-lateral thigh flap (ALT) (Figs 3-5). Six weeks later the spacer was removed, the RT nail exchanged to a retrograde tibial nail and a bone transport frame was applied (Fig 6). Transport progressed at 1mm/day after an 8 day latent period, to fill the fibre defect. At 130 days, the ankle arthrodesis was performed with a plate, autologous bone graft and BMP-2 (Figs 7-10).

Antibacterial therapy was given for a total of 22 weeks and antifungals for 1 year. However, re-sampling at the time of ankle arthrodesis revealed a Coagulase-negative staphylococcus requiring an additional 12 weeks of antibiotic therapy.

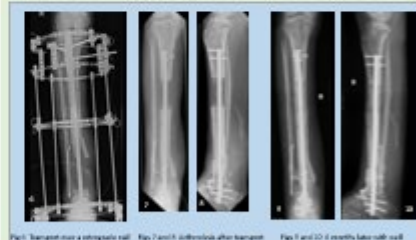


Fig 6: Transport over a retrograde nail

Fig 7: Ankle arthrodesis after transport

Fig 8 and 9: 6 and 10 months later with nail, mobilisation frame and regenerate

Six months after ankle arthrodesis, the patient is fully weight-bearing with walking distance up to 4-5km. He remains infection-free.

Conclusion

Bone transport to ankle fusion gave good clinical outcome in these severe infections with bone and soft tissue loss of the distal tibia even in the setting of multi-resistant microbes. It is probably an advantage to avoid delay from initial debridement to definitive treatment due to risk of infection evolution.

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2. Grewer C, et al. *Foot & Ankle Spec Int* 2015; 8(2): 143-151.
3. Pomeroy E, et al. *J Ortho Sci Res*. 2024; 5(1): 1-7.

⁴ Cerament G[®] (Stryker, Kalamazoo MI, USA), Sweden



Oxford University Hospitals NHS Foundation Trust

OSLO UNIVERSITETSSYKEHUS

[P03] Management of Fracture Related Infections: Are we assessing cases in accordance with updated guidance?

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Background

Fracture-Related Infections (FRI) are a recently defined and poorly categorised orthopaedic complication. The term having been defined in 2018, FRI lack substantial data regarding assessment and management. In 2019, comprehensive guidelines were published to standardise detection and treatment. Adherence to these standards at a tertiary care level may improve outcomes and resource use.

Methods

A retrospective audit was conducted on the Leeds Teaching Hospitals Trust (LTHT) bone infection service, focusing on 84 patients managed by fracture infection consultants. After exclusions, 27 patients' records were reviewed for compliance with British Orthopaedic Association Standards for Trauma (BOAST) relating to fracture related infection.

Results

LTHT performed well in multidisciplinary (MDT) management. All patients had prompt antibiotic narrowing, and 93% received infection specialist input. Similarly, 93% underwent antibiotic review within 48 hours. However, LTHT lacked a formal policy for 'leaky wounds', and there was no evidence of consultant-led clinic review within 48 hours for systemically well patients. Only 33% had wound photography for monitoring, and just 55% adhered to the recommended two-week antibiotic-free interval.

Discussion

Given the limited understanding of FRI, improving guideline adherence at LTHT is essential to enhance patient outcomes and reduce the need for radical treatments. This audit highlights strengths and gaps within current practice and encourages similar evaluations across other tertiary services to promote consistent, high-quality FRI management.

[P04] Beyond the Flap: Orthoplastic Management of Delayed Sternal Osteomyelitis and Non-union

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Purpose

Sternal osteomyelitis (OM) following cardiothoracic surgery, particularly in late-presenting non-union, is poorly characterised and inconsistently managed. Delayed cases involve established infection, instability, and biofilm formation, requiring multidisciplinary care. BOAST fracture-related infection (FRI) guidelines advocate a combined orthoplastic approach for such complex presentations.

Methods

This retrospective case series identified all patients referred to a specialist bone infection unit with delayed sternal OM from March 2015 to March 2025. All were managed through a multidisciplinary pathway involving cardiothoracics, orthopaedics, plastic surgery, and microbiology. Management included MDT planning, radical debridement, deep tissue sampling, removal of infected material, skeletal stabilisation where required, definitive soft tissue reconstruction, and targeted antimicrobial therapy. Clinical outcomes, microbiology, and recurrence were evaluated.

Results

Fourteen patients were included (mean age 63.7 years), all with significant comorbidities. The interval from index cardiac surgery to definitive debridement ranged from 25 to 3,251 days. Eleven patients underwent single-stage debridement with immediate reconstruction: three required staged procedures. The most commonly isolated organisms were *Staphylococcus epidermidis* (7/14), *Cutibacterium acnes* (5/14), and *Staphylococcus aureus* (4/14); mixed infections were frequent. Mean length of stay following single-stage procedures was 10.5 days. During a mean follow-up of 410 days, one patient experienced recurrence requiring further surgery.

Conclusion

Delayed sternal OM and non-union can be effectively managed using a structured orthoplastic approach aligned with established FRI principles. Isolated soft tissue coverage alone risks persistent infection and ongoing mechanical instability. These findings support multidisciplinary management in specialised centres and suggest FRI frameworks may be safely applied beyond the appendicular skeleton.

[P05] "Oh Deer!" Preventing infection in open fractures involving deer fur contamination: A case report

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Introduction

Motorcycle accidents are a frequent source of orthopaedic trauma. In areas with large wildlife populations, motorcycle collisions with animals contribute to these numbers. Open fractures from these motorcycle accidents can be complicated by significant contamination, with high risk for infection.

Case presentation

A 61-year-old female presented to the emergency department as a trauma alert after colliding with a deer on her motorcycle, and was found to have a Gustilo-Anderson type IIIA open fracture of her left distal femur, along with a Schatzker VI left tibial plateau fracture. Her open fracture was noted to be contaminated with deer fur. She was given 1 dose of Ancef by EMS and received Zosyn in the trauma bay. She was taken urgently to the OR for irrigation and debridement, as well as stabilization of her floating knee, and was found to have a significant amount of deer fur in her femoral canal. She underwent two repeat debridements in the OR prior to any definitive hardware placement. She has been followed for over 2 years since the initial accident and has not had any evidence of infection.

Discussion

Motorcycle accidents have significant morbidity and mortality, as they often occur at high speeds and riders have limited protection. Collisions with wildlife add an additional complication when open wounds are contaminated with animal fur and tissue. The patient in this case report received early and appropriate antibiotics as well as multiple debridements, which were instrumental in preventing infection despite the contamination with deer fur.

[P06] Pathogen-Specific Risk for Iterative Surgical Debridement in Orthopedic Infections: A Prospective Multicohort Analysis

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Background

Almost all orthopedic infections require a combination of surgical debridement with targeted antimicrobial treatment. The number of debridement may vary considerably between infection episodes. The case-mix is enormous and so-called "second looks" are frequent. We investigate which bacteria are associated with second looks to achieve local infection control.

Methods: We used a composite database stemming from three prospective randomized-controlled trials (RCTs) 2019-2025 with protocolled surgical debridement (initial debridement). In these RCTs, we allowed additional debridement only in case of persistent (during several days) or progredient local infection.

Results

Overall, 201/1,067 (18.8%) orthopedic infections required multiple debridement (median two second looks, range 2–8 surgeries). Gram-negative pathogens revealed the highest risk for "second looks" (28.2%), followed by implant-related infections (25.4%). Cutibacteria yielded the lowest risk (11.7%). In the multivariable logistic regression model, Gram-negative infections (odds ratio 2.04, 95%CI 1.20-3.47) and infected implants (OR 2.18, 95%CI 1.56-3.03) were independently associated to multiple interventions, in contrast to *Staphylococcus aureus*, enterococci or streptococci.

Conclusions

When analyzing orthopedic infections included in prospective RCTs, Gram-negative pathogens groups significantly associate with the need for second looks, which matches our own experience. Today findings support preoperative counseling, antibiotic stewardship, and operative planning for a staged management in infection cases with a high risk of clinical failure.

Trials registrations: NCT04048304, NCT04081792, NCT05499481.

[P07] No need for routine histopathology in the assessment of surgical spine infections

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Background/Objectives

Per protocol, many surgeons add histology to the intraoperative microbiological samples during the debridement of (surgical site) infections (SSI); even in clear situations. We question the benefit of this practice.

Methods

This is a side study of a prospective-randomized, trial 2019-2024 on the duration of postoperative antibiotic treatment (SASI Trials). We evaluate the performance of routine histological samples regarding the detection of infection (EJBIS definitions) or of another pathology.

Results

We included 95 deep infection episodes, with bone involvement (53% females; 58% immune suppressed (mostly diabetes mellitus); median age 72 years; median ASA-Score 3 points). Upon admission, 19% of all SSI were bacteremic, and 75% implant-related; with a median serum C-reactive protein level of 55 mg/L; with a median of 5 out of 6 intraoperative tissue samples positive. The histology showed acute in-flammation in 62 SSI episodes (62/95; sensitivity 0.65), and the presence of possible bacteria in 10 cases (11%). It did not detect new pathogens or incidental pathologies. In no case, the antibiotic treatment was interrupted because of the absence of histological confirmation of infection. The histo-pathological results arrived approximately after 1 week, when most patients were already discharged and started their antibiotic treatment. In multivariate analysis, a Gram-negative infection (odds ratio 9.1, 95%CI 1.2-78) and a strong bacterial visibility in microscopic examination ("abundance"; OR 6.6; 95%CI 1.1-41) predicted the picture of "infection" in histology.

Conclusions

There is no place for adding a routine histopathological examination in clear acute surgical site spine infections.

Trials registration: ClinicalTrials.gov; NCT04048304.

[P09] Reconstruction of Sequelae Following Pediatric Septic Arthritis of the Hip: Outcomes Based on a Modified Choi Classification

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Purpose

This study aims to evaluate the clinical characteristics and surgical outcomes of an optimized reconstruction strategy using a unilateral rail fixator guided by a modified classification system.

Methods

A retrospective analysis was conducted on patients with SAH sequelae treated with reconstructive surgery. Deformities were categorized using a modified Choi classification: the original four types were supplemented with Type V (hip fusion) and Type VI (femoral defect).

- Type II: Modified femoral neck lengthening (12 cases with concomitant femoral lengthening).
- Type III: Proximal femoral osteotomy (11 cases with femoral lengthening).
- Type IV: Pelvic support osteotomy (PSO) in 8 cases.
- Type V: Staged treatment (initial head/neck resection followed by delayed reconstruction) for 5 patients with active infection; direct PSO for 7 patients without active infection.
- Type VI: Lengthening and reconstruction in 5 patients. A unilateral rail fixator was uniformly applied in all cases for stabilization and deformity correction.

Results

All patients were followed for 12–24 months. The unilateral rail fixators provided stable fixation with no major complications. Modified femoral neck lengthening effectively restored neck length and limb alignment in Type II. PSO significantly improved acetabular coverage and hip stability in Types IV and V. For Type VI, limb length discrepancy was markedly reduced, and hip function showed varying degrees of recovery.

Conclusions

Individualized surgical intervention based on the modified Choi classification (including Type V and VI) provides predictable clinical outcomes. The unilateral rail fixator is a reliable and versatile tool for fixation, deformity correction, and lengthening in complex pediatric hip reconstructions.

[P10] Individualized Reconstructive Strategies for Lower Limb Deformities Secondary to Chronic Osteomyelitis: A Review of 190 Cases

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Purpose

Reconstructing lower limb deformities resulting from chronic osteomyelitis is complex due to bone loss, limb length discrepancy (LLD), and joint stiffness. This study evaluates the efficacy of individualized surgical strategies for these multifaceted sequelae.

Methods

We retrospectively analyzed 190 cases (112 males, 78 females; mean age 18.7 years) treated between 2010 and 2020. Deformities included LLD (n=91), pseudarthrosis (n=32), complex multi-planar deformities (n=45), articular surface defects (n=8), and joint stiffness (n=14).

Targeted interventions were applied:

- LLD: Single-level (n=67) or multi-level (n=24) osteotomy for distraction osteogenesis.
- Hip defects: Pelvic support osteotomy (n=6).
- Complex deformities: One-stage (n=29) or staged (n=16) correction.
- Knee contractures: Modified quadricepsplasty (n=11).
- Ankle deformities: Ilizarov technique (n=38), including "V" osteotomy (n=13).
- Pseudarthrosis: Combined osteotomy, bone grafting, and internal/external fixation.

Results

During a mean follow-up of 2.8 years, the mean LLD significantly improved from 3.2 ± 1.5 cm to 0.8 ± 0.4 cm. The excellent/good rate for complex deformity correction was 82.2%. Functional scores (AOFAS/Harris) improved significantly ($P < 0.05$). Complications included pin-track infection (n=12) and delayed union (n=8), all resolved with treatment. No infection recurrence was observed.

Conclusions

Individualized reconstruction—combining bone transport, staged correction, and functional joint procedures—effectively restores limb alignment and length. Utilizing Ilizarov techniques and specialized osteotomies provides a safe and reliable strategy for treating diverse osteomyelitis sequelae.

[P11] Treatment of Femoral Osteomyelitis with Antibiotic Cement-Coated Intramedullary Nails and the reamer-irrigator-aspirator (RIA) -our experience

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Objective

To review and synthesize the clinical evidence on the efficacy and outcomes of using antibiotic cement-coated intramedullary nails for the treatment of femoral osteomyelitis.

Methods

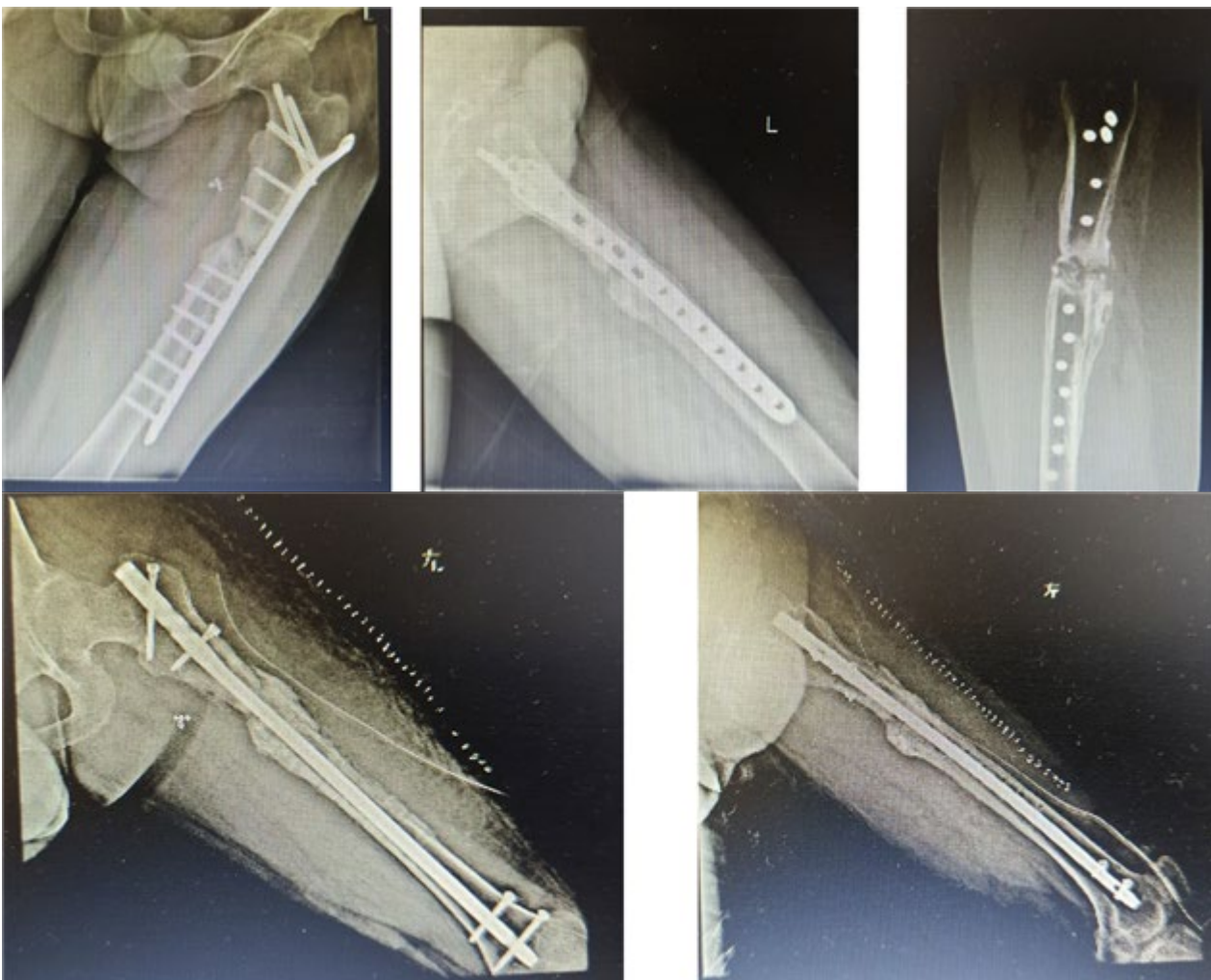
Two cases were treated by surgical debridement of infected and necrotic tissue, followed by the implantation of an intramedullary nail coated with antibiotic-impregnated calcium sulfate, and PMMA in the defect area. When the infection was controlled 6-8 weeks later, The reamer-irrigator-aspirator (RIA) was used to bone graft instead of PMMA in the bone defect area. A plate was also added to provide enough stability for bone union. This technique provides both mechanical stability to the femur and high local concentrations of antibiotics, directly addressing the site of infection while managing the resulting dead space. All the cases was treated

Results

All the 2 cases got very good results after 8-10 months follow up.

Conclusion

This technique provides both mechanical stability to the femur and high local concentrations of antibiotics, directly addressing the site of infection while managing the resulting dead space.





[P12] Clinical Outcomes of Continuous Local Antibiotic Perfusion in Fracture-Related Infection: A Systematic Review

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Purpose

Fracture-related infection (FRI) remains a challenging complication in orthopedic trauma, particularly when implant retention is required to preserve mechanical stability and promote fracture union. Continuous local antibiotic perfusion (CLAP) has emerged as an adjunctive technique to deliver sustained high local antibiotic concentrations directly to infected tissues while minimizing systemic toxicity. This study aimed to systematically review the available clinical evidence on the use of CLAP in the management of fracture-related infection.

Methods

A systematic literature review was conducted in PubMed, the Cochrane Library, and ScienceDirect following PRISMA guidelines. Clinical case series reporting the use of CLAP for fracture-related infection after traumatic fracture fixation were included. Single-patient case reports, oncologic reconstruction, periprosthetic joint infection, spinal infection, and prophylactic local antibiotic use were excluded. Data on treatment techniques, infection control, implant retention, fracture union, and complications were qualitatively synthesized.

Results

Four retrospective case series published between 2021 and 2024 were included, comprising 65 patients with fracture-related infection. CLAP was delivered through intra-soft tissue or intra-medullary perfusion, frequently combined with negative-pressure wound therapy. Infection control was achieved across all studies, although repeat CLAP procedures were required in selected cases. Most patients achieved fracture union while retaining their implants, with no clinically significant systemic antibiotic toxicity reported.

Conclusion

Based on limited retrospective evidence, continuous local antibiotic perfusion appears to be a feasible adjunctive strategy for selected cases of fracture-related infection, particularly when implant preservation is desired. Further prospective and comparative studies are required to better define its role in routine clinical practice.

[P13] An Unusual Case of Disseminated Gonococcal Spinal Infection

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A 38 year old immunocompetent male described a four week history of interscapular pain, night sweats and weight loss. This progressed to right upper limb weakness and wrist drop one week prior to admission, followed by truncal numbness, parasthesia and an unsteady gait. Examination revealed upper motor neuron signs in his right upper limb and reduced power in the C6/C7 distribution, reduced sensation throughout the T4-L3 dermatomes and an ataxic gait.

C-reactive protein (68 mg/L) and white cell count (17.0 x 10⁹/L) were elevated. Blood cultures were negative after five days incubation. Urgent MRI confirmed a cervical epidural abscess at C4-T1 with cord compression at C5-C7.

The patient underwent a posterior cervical decompression with laminectomy and excision of the epidural abscess. Antimicrobial therapy consisting of ceftriaxone 2g BD and metronidazole were commenced. Cultures of the tissue were positive for *Neisseria gonorrhoeae*. Nucleic acid amplification tests were positive on urine but negative at the oropharyngeal site. The patient reported a one week history of dysuria prior to admission. Blood borne virus screen was negative. A further washout was undertaken two weeks later after repeat MRI continued to show a large collection at the laminectomy site

Antimicrobial therapy was rationalised to ceftriaxone 2g once daily as per BASHH guidelines and he received 14 weeks in total with radiological resolution. One year follow-up revealed persistent right upper limb neurological weakness.

This case describes a very rare presentation of disseminated gonococcal infection with only six cases to date of spinal involvement being reported.

[P14] Joint Effort: A Multi-Disciplinary Approach to Multidrug-resistant TB of the Hip

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Purpose

This poster was conceived with the dual purpose of improving our own understanding of multi-drug resistant tuberculosis (MDR-TB) of the hip whilst disseminating our experience to other healthcare providers with an interest in bone and joint infections.

Methods

Review of patient clinical notes, imaging and bloods, discussion with patient and clinical teams involved and focussed review of the available literature using Embase and MEDLINE. The patient was treated with levofloxacin, clofazimine, linezolid and cycloserine with co-administration of pyridoxine; all for 18 months, plus bedaquilline for 6 months.

They were managed by the Infectious Diseases and Orthopaedic departments at the Royal Sussex County Hospital, Brighton, with input from the Royal National Orthopaedic centre, Stanmore.

Results

At the time of writing, the patient is completing his final month of TB treatment and is due to finish April 2026. An MRI carried out 2 months prior to completion shows “resolution of acute tuberculous arthritis....severe osteo-arthritis...[and] CT evidence of collapse of the femoral head”. This is in keeping with the patient’s clinical state, where pain currently limits exercise tolerance. To improve function and to reduce pain, once he has completed his oral TB therapy, the patient is planned for a Kiwi Prostalac total hip replacement. This can be revised later, pending his progress off oral medication.

Conclusion

This case highlights the essential role of the MDT in managing TB and the importance of aftercare and follow-up given the associated chronic pain and disability of locally destructive bone infections.

[P17] Short postsurgical antibiotic therapy for implant related spinal infections (SASI trials) - a stratified unblinded randomized-controlled non-inferiority trial

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¹Balgrist, Zürich, Switzerland

Purpose

The minimum duration of postoperative systemic antibiotic treatment for implant-related spinal infections remains unclear. Here, we present the results of a randomized, prospective trial, comparing short- and long-term postoperative antibiotic treatment.

Methods

We randomized adult spine patients with implant-related spinal infections into short-term (six weeks) and long-term (12 weeks) postoperative antibiotic treatment groups at a 1:1 ratio, with a non-inferiority margin of 10%. The primary outcomes were "clinical failure" (reoperation for any reason) and microbiologically-identical relapses within one year of follow-up. All debridement was performed by experienced orthopedic spine surgeons.

Results

Overall, we included 208 operated spine infections (104 females; 50%). The median age was 69 years, the median ASA score 3, and 53 episodes occurred in immune-compromised patients. Among the 108 infections in the short-term group and the 100 episodes in the long-term group in the Intention-to-Treat (ITT) population, 16 (15%) and 15 (15%) yielded a "clinical failure" (Chi-square-test; $p=0.97$), respectively. The proportion of serious adverse events (SAE) were 21/49 versus 28/49 ($p=0.16$), of which 4 versus 10 were antibiotic-related ($p=0.08$). The risk for "clinical failure" in the per protocol population (PP) was 12/84 (14%) versus 14/84 (17%). The corresponding PP results for "microbiological recurrence" were 2/84 (2.4%) versus 2/84 (2.4%), $p=1.00$.

Conclusions

After surgical debridement, a six-week systemic postoperative antibiotic regimen is non-inferior to 12-weeks for residual, adult implant-related spinal infections.

Trial registration number: NCT04048304.

[P18] Two-Year Outcomes of Deep Surgical Site Infection After Spinal Surgery: Implant Retention and Predictors of Treatment Failure

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Background

Deep surgical site infection (SSI) after spinal surgery occurs in approximately 1–2% of cases and causes significant morbidity, yet high-quality evidence to guide prevention and management is limited.

Methods

We retrospectively studied adults who underwent spinal surgery at a tertiary hospital (2020–2023) and developed deep SSI requiring reoperation for washout and/or debridement. Clinical, microbiological, treatment, and 24-month outcome data were collected. Inclusion required positive surgical cultures and targeted antibiotic therapy. Treatment failure was defined as unplanned reoperation for persistent infection or infection-related implant failure. Descriptive statistics and univariate logistic regression explored factors associated with failure.

Results

63 deep SSIs were identified (median age 59 years, range 18–91; 56% female). Indications for index surgery were degenerative disease (39.7%), deformity (20.6%), malignancy (20.6%), and trauma (19.0%); 81% involved instrumentation. Surgical washout ranged from 4 days to 30 weeks after index surgery (median 20 days). Staphylococcus aureus and Enterobacterales were the most frequent pathogens. Treatment failure occurred in 13 cases (21%) within 24 months. In instrumented cases, culture directed antibiotics were usually planned for 12 or 24 weeks, with similar success rates ($p=0.76$); 6 patients (12%) ultimately required implant removal. Infections involving Cutibacterium acnes were associated with implant removal ($p = 0.04$).

Conclusions

Most prosthesis-associated spinal SSIs were successfully managed with surgical debridement, implant retention, and targeted antibiotics. Cutibacterium acnes infection was associated with increased risk of implant removal. Prospective studies are needed to define optimal antibiotic duration as well as peri- and post-operative risk factors for infection.

| Patient characteristic | Success (n=44) | Failure (n=13) | Odds Ratio (95% CI) | P-value |
|--|-----------------|-----------------|---------------------|---------|
| Demographics | | | | |
| Male sex, n (%) | 22 (50.0) | 6 (46.2) | 0.86 (0.24–2.98) | 0.81 |
| Age, mean \pm SD, years | 50.4 \pm 23.4 | 58.8 \pm 19.8 | 1.02 (0.99–1.05) | 0.24 |
| Charlson Comorbidity Index, mean \pm SD | 2.2 \pm 2.4 | 2.2 \pm 1.7 | 1.01 (0.75–1.31) | 0.97 |
| Risk factors for infection | | | | |
| Diabetes, n (%) | 4 (9.1) | 2 (15.4) | 1.82 (0.23–10.68) | 0.52 |
| Active malignancy, n (%) | 8 (18.2) | 2 (15.4) | 0.82 (0.11–3.89) | 0.82 |
| Steroid use \leq 2 weeks of surgery, n (%) | 2 (4.5) | 2 (15.4) | 3.82 (0.42–34.90) | 0.20 |
| BMI >30, n (%) | 14 (31.8) | 3 (23.1) | 0.64 (0.13–2.50) | 0.55 |
| Indication for surgery | | | | |
| Degenerative spinal disease, n (%) | 18 (40.9) | 6 (46.2) | Reference | — |
| Spinal deformity, n (%) | 11 (25.0) | 2 (15.4) | 1.50 (0.29–11.40) | 0.65 |
| Trauma, n (%) | 8 (18.2) | 4 (30.8) | 2.75 (0.43–23.60) | 0.30 |
| Malignancy, n (%) | 7 (15.9) | 1 (7.7) | 1.83 (0.07–27.20) | 0.66 |
| Surgical factors | | | | |
| First spinal operation, n (%) | 28 (63.6) | 9 (69.2) | — | 0.87 |
| Insertion of implant, n (%) | 35 (79.5) | 10 (76.9) | 0.86 (0.21–4.40) | 0.84 |
| Number of instrumented vertebrae, mean (SD) | 5.3 (3.5) | 5.5 (4.2) | 1.01 (0.84–1.19) | 0.88 |
| Polymicrobial infection, n (%) | 14 (31.8) | 4 (30.8) | 0.95 (0.23–3.49) | 0.94 |
| Days from index surgery to surgical washout/debridement, mean \pm SD | 35.9 \pm 44.8 | 54.8 \pm 69.3 | 1.01 (0.99–1.02) | 0.26 |
| Number of surgical samples, mean | 5.1 | 4.1 | — | 0.13 |
| Number of positive cultures, mean | 4.2 | 3.5 | — | 0.26 |

Patient and Surgical Characteristics by Outcome (Treatment Success vs Failure). Baseline characteristics of patients stratified by 24-month outcome. Values are number (%) or mean \pm SD. Six patients were excluded from this analysis; two cases lost to follow up and a further four cases who died without surgery referenced on their death certificate were excluded (3/4 of these deaths were in patients with metastatic malignancy) Total n = 57 (44 successes, 13 failures) included into analysis. Univariable logistic regression was used (failure = outcome of interest); an OR > 1 indicates higher odds of failure.

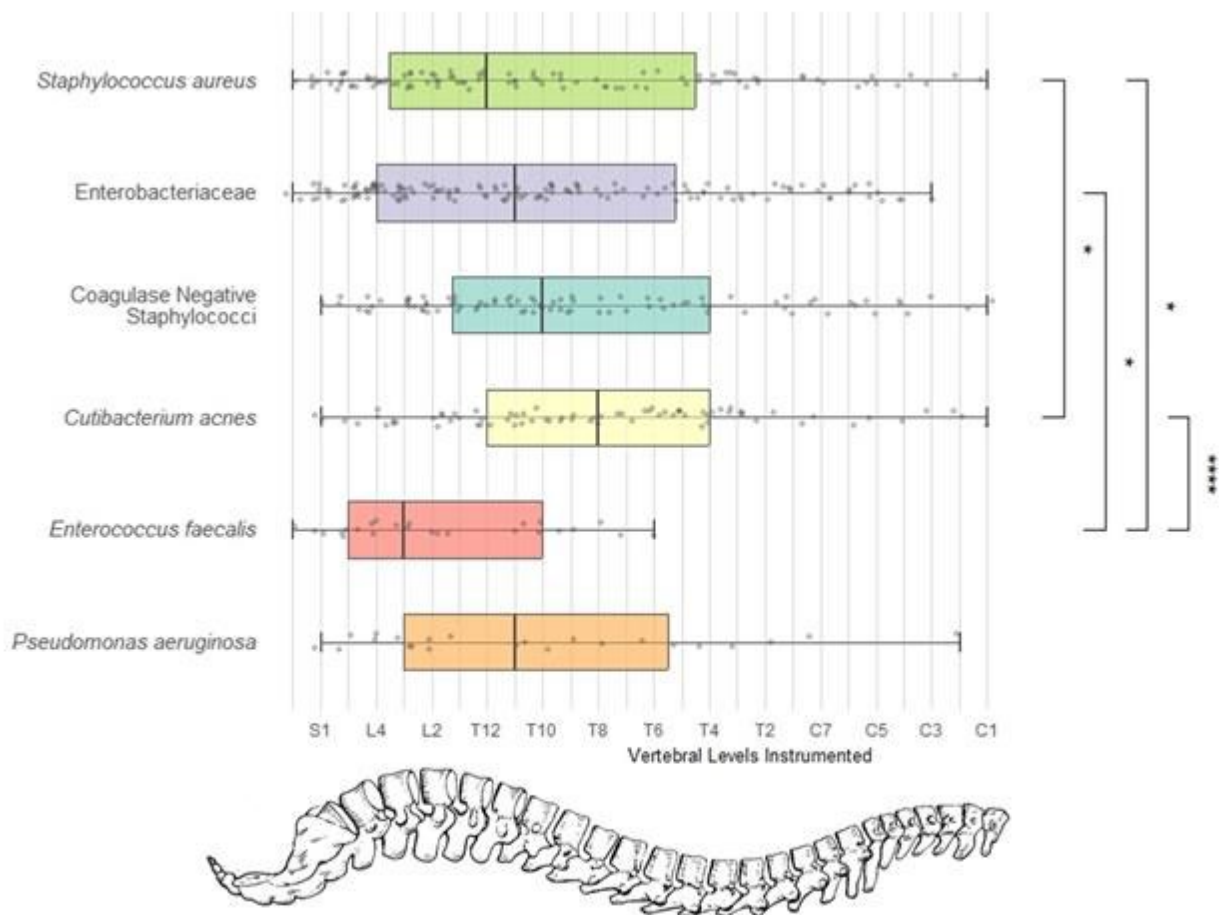
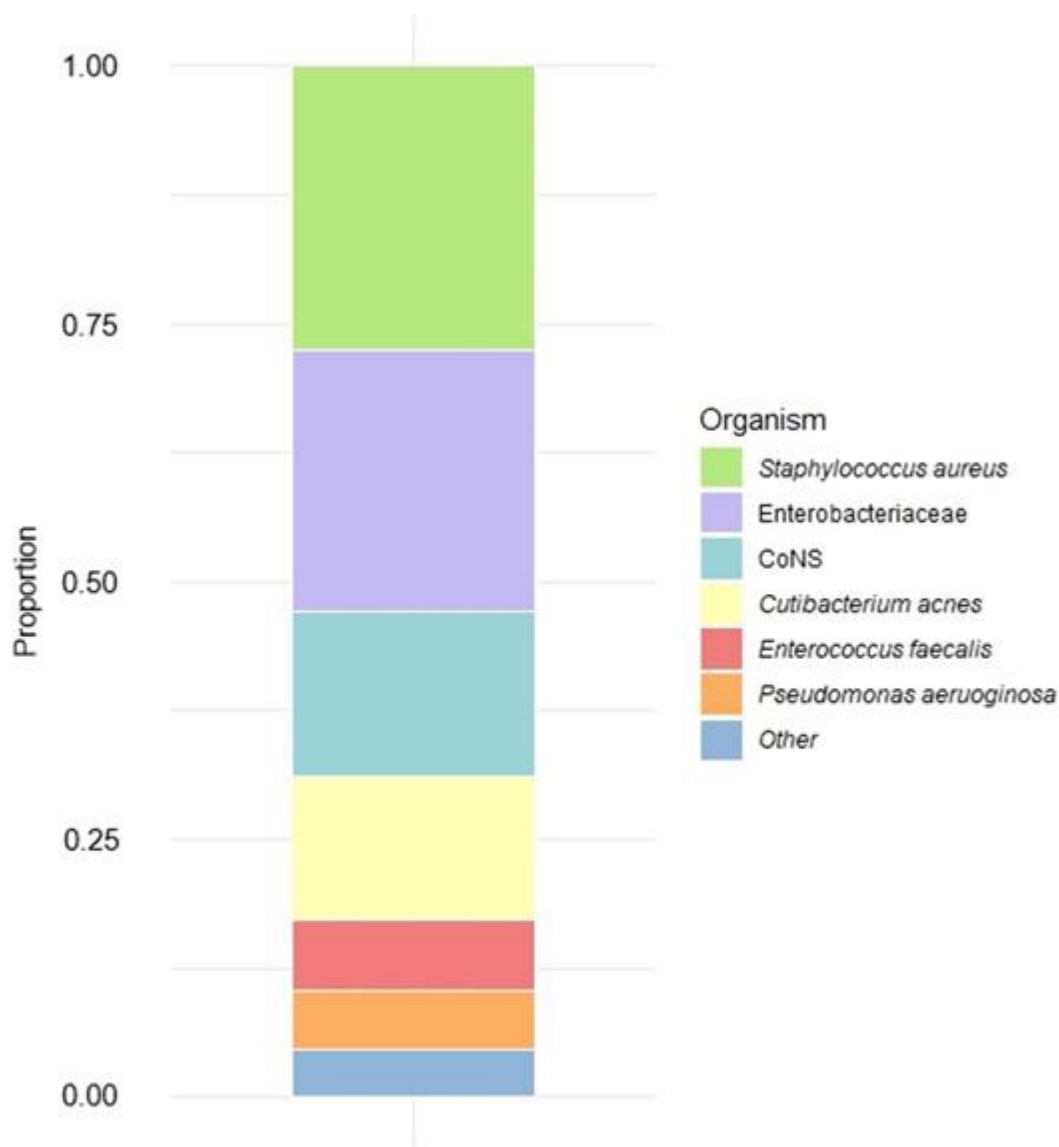
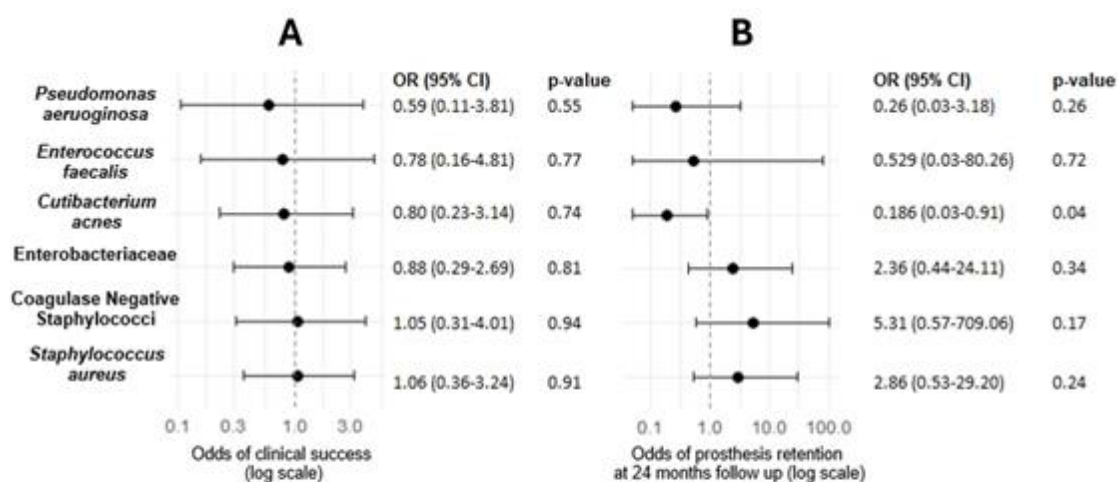


Figure 3. Association of infecting organism with level of spinal instrumentation. Boxplot / showing distribution of instrumented vertebral levels by pathogen. p-values from Wilcoxon rank-sum tests. * $p < 0.05$, **** $p < 0.0001$. Base image: "Spine" by Pearson Scott Foresman.



Plot of relative frequency of organisms isolated from deep surgical site infection cultures. *Staphylococcus aureus* was found in 24 cases, *Enterobacteriales* in 22, Coagulase-negative staphylococci (CoNS) in 14 cases, *Cutibacterium acnes* in 12 cases, *Enterococcus faecalis* in 6 cases and *Pseudomonas aeruginosa* in 4 cases.



Forest plot demonstrating the association of infecting organism with clinical success (A) and implant retention (B) at 24 months. ORs and 95% CIs were calculated using Firth's penalised logistic regression to account for small-sample bias. Separate models were fitted for each organism, using binary indicators as predictors.

| Characteristic | Overall (N = 51) | ≤12 weeks (N = 31) | 24 weeks (N = 20) | p-value |
|--|------------------|--------------------|-------------------|--------------|
| Age, mean ± SD, years | 51.4 ± 21.3 | 53.1 ± 21.3 | 48.8 ± 21.7 | 0.48 |
| Charlson Comorbidity Index, mean ± SD | 2.7 ± 2.8 | 2.7 ± 2.6 | 2.7 ± 3.2 | 0.94 |
| No. of vertebrae instrumented, mean ± SD | 5.5 ± 3.4 | 5.2 ± 3.3 | 6.1 ± 3.6 | 0.35 |
| First spinal surgery, n (%) | 41 (80) | 28 (90) | 13 (65) | 0.04 |
| Indication for surgery | | | | |
| Degenerative spine, n (%) | 16 (31) | 11 (35) | 5 (25) | |
| Malignant cord compression, n (%) | 3 (6) | 0 (0) | 3 (15) | |
| Pathological fracture, n (%) | 5 (10) | 4 (13) | 1 (5) | |
| Primary tumour, n (%) | 4 (8) | 2 (6) | 2 (10) | |
| Spinal deformity, n (%) | 11 (22) | 5 (16) | 6 (30) | |
| Traumatic fracture, n (%) | 12 (24) | 9 (29) | 3 (15) | |
| Antibiotic duration extended, n (%) | 5 (10) | 2 (6) | 3 (15) | 0.56 |
| Return to theatre, n (%) | 14 (27) | 9 (29) | 5 (25) | 0.99 |
| Readmission, n (%) | 10 (20) | 5 (16) | 5 (25) | 0.49 |
| Treatment success, n (%) | 35 (69) | 21 (68) | 14 (70) | 0.76 |
| Treatment failures | | | | |
| Died – SSI-related, n (%) | 2 (4) | 1 (3) | 1 (5) | |
| New SSI, n (%) | 2 (4) | 2 (6) | 0 (0) | |
| Primary failure, n (%) | 5 (10) | 4 (13) | 1 (5) | |
| Relapse failure, n (%) | 1 (2) | 1 (3) | 0 (0) | |
| Lifelong suppressive antibiotics, n (%) | 1 (2) | 0 (0) | 1 (5) | |
| Died – unrelated, n (%) | 4 (8) | 1 (3) | 3 (15) | |
| Unknown/lost to follow-up, n (%) | 1 (2) | 1 (3) | 0 (0) | |
| Days from index surgery to surgical washout/debridement, mean ± SD | 42.5 ± 53.8 | 42.1 ± 51.5 | 43.1 ± 58.6 | 0.95 |
| Organisms identified | | | | |
| <i>Staphylococcus aureus</i> , n (%) | 17 (33) | 12 (39) | 5 (25) | 0.37 |
| Coagulase-negative Staphylococci, n (%) | 13 (25) | 9 (29) | 4 (20) | 0.53 |
| <u>Enterobacterales</u> , n (%) | 19 (37) | 6 (19) | 13 (65) | 0.002 |
| <i>Cutibacterium acnes</i> , n (%) | 12 (24) | 9 (29) | 3 (15) | 0.32 |
| <i>Enterococcus faecalis</i> , n (%) | 3 (6) | 0 (0) | 3 (15) | 0.06 |
| <i>Pseudomonas aeruginosa</i> , n (%) | 4 (8) | 2 (6) | 2 (10) | 0.64 |
| Polymicrobial infection, n (%) | 17 (33) | 8 (26) | 9 (45) | 0.22 |

Comparison of Clinical Characteristics and Outcomes in Patients planned to receive ≤12 Weeks vs ≥24 Weeks of Antibiotic Therapy with retained prosthetic material. Continuous variables are mean ± SD, categorical variables are number (%). Statistical comparisons used Wilcoxon rank-sum tests for continuous variables and Fisher's exact test for categorical variables. Bold indicates p < 0.05.

[P19] Intramedullary Nailing with Absorbable Antibiotic Carrier (INAAC) for Treatment and Prophylaxis of Fracture-Related Infection in a Major Trauma Centre

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Purpose

Intramedullary nailing coated with antibiotic carrier has been shown to reduce the risk of fracture-related infection (FRI) and successfully treat infected non-union. INAAC in these cases has managed to achieve 95% infection-free union using standardised protocol in a single centre. We aim to review our cohort to assess for union, recurrent infection or repeat surgery.

Method

All high-risk and confirmed FRI cases performed over a 10-month period were included. High-risk fractures were defined as open fracture, fasciotomies, external-fixator, or high-grade soft tissue injury. Confirmed cases grew phenotypically similar organisms from intra-operative samples.

Cases were performed by two surgeons using published INAAC technique. All patients received anatomically appropriate trauma nails, coated with absorbable bioceramic antibiotic carrier. Microbiological advice was sought for confirmed infection. Outcomes were assessed using electronic records with a minimum of 3-months follow-up.

Results

15 INAAC cases were performed in 14 patients: six femoral nails, seven tibial nails and two hindfoot nails. Six patients (43%) were female; average age 46.3 (17-85). Four had confirmed infection. 11 were high-risk for FRI; of these, two grew significant organisms.

Over 90% of cases at 3-months have demonstrated clinical and radiological union, without clinical signs infection.

Conclusion

Our series demonstrates a high success rate for INAAC nailing. These short-term results are important, as majority of cases progressed to union in an expected post-operative period. This study demonstrates that single-stage surgery with an appropriate nail, using the INAAC technique appears safe and effective in preventing infection and achieving union in these difficult cases.

[P20] Opportunistic Invader with a Kneesty Consequence. Successful Management of Bilateral Periprosthetic Knee Infection caused by *Burkholderia cenocepacia*: A Case Report

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A 68-year-old man underwent simultaneous bilateral total knee replacements in India in March 2022. In May 2023, he presented to a London hospital with bilateral knee pain, swelling, and elevated inflammatory markers. Radiographs demonstrated periprosthetic lucency, moderate joint effusions, and features suggestive of implant loosening in both knees.

Ultrasound-guided aspiration of both knees obtained synovial fluid and periprosthetic tissue samples. Microbiological cultures from both joints grew multidrug-resistant *Burkholderia cenocepacia*. Following multidisciplinary team discussion, the patient underwent elective simultaneous first-stage revision of both knees in September 2023, with placement of articulating cemented spacers. Multiple intraoperative tissue samples confirmed persistent growth of *B. cenocepacia*. Postoperatively, the patient received targeted intravenous antibiotics via OPAT and oral therapy, completing a total of 12 weeks of antimicrobial treatment.

After an antibiotic-free interval, repeat aspirations of both knees showed no bacterial growth after 14 days of incubation, and serial CRP measurements returned to normal. Second-stage revision was performed for the right knee in September 2024 and for the left knee in August 2025. At the time of abstract submission, the patient remains clinically well with no evidence of infection recurrence.

Periprosthetic joint infection caused by *Burkholderia cenocepacia* is rare, and evidence guiding optimal antimicrobial management is limited. This case highlights successful eradication using staged bilateral revision and targeted antibiotic therapy. It contributes to the limited literature on managing multidrug-resistant Gram-negative periprosthetic joint infections. Full details of the antimicrobial regimen will be discussed.

[P21] Timing of Surgical Antimicrobial Prophylaxis in Orthopaedic Surgery at a Tertiary Orthopaedic Unit: A Prospective Observational Study

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Introduction

Surgical site infection (SSI) remains a devastating complication in orthopaedic surgery, particularly surrounding implant surgery, where infection can result in substantial complications. The World Health Organization (WHO) guidelines outline clear guidance for Surgical Antimicrobial Prophylaxis (SAP) for reducing SSI. Despite this, optimal SAP timing in routine clinical practice remains variable. This study aims to evaluate SAP agents and adherence to timings in our Tertiary Orthopaedic Centre.

Methods

Theatre records were prospectively analysed over a 1-month period. SAP were sub-grouped into agents requiring infusion within 60 minutes (Shorter Infusion Agents (SIA) i.e. β -lactams) of skin incision and those requiring infusion between 60-120 minutes (Longer Infusion Agents (LIA) i.e. Vancomycin) of skin incision.

Statistical analysis was performed to assess compliance in timings between subgroups.

Results

89 surgeries were included. The SIA subgroup were used in 94.3% (n=84) of cases and had compliance of 90.5% (n=76) cases. LIA were used in 5.6% (n=5) of cases and had 0% (n=0) compliance. Compliance was statistically significantly lower in LIA group vs SIA group (Fisher's exact test, $p < 0.001$)

Discussion

Within the SIA subgroup, compliance in SAP timings were 90.5% (n=76). 0% (n=0) of the LIA subgroup were compliant in SAP timings. Despite accounting for a small number of cases, this suggests a significant systems-level deficiency in the understanding and usage of these medications for SAP. These findings highlight the need for improved awareness for optimising SAP, particularly with agents requiring longer infusion times.

[P22] Culture is the gold standard but when Culture Fails

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Background

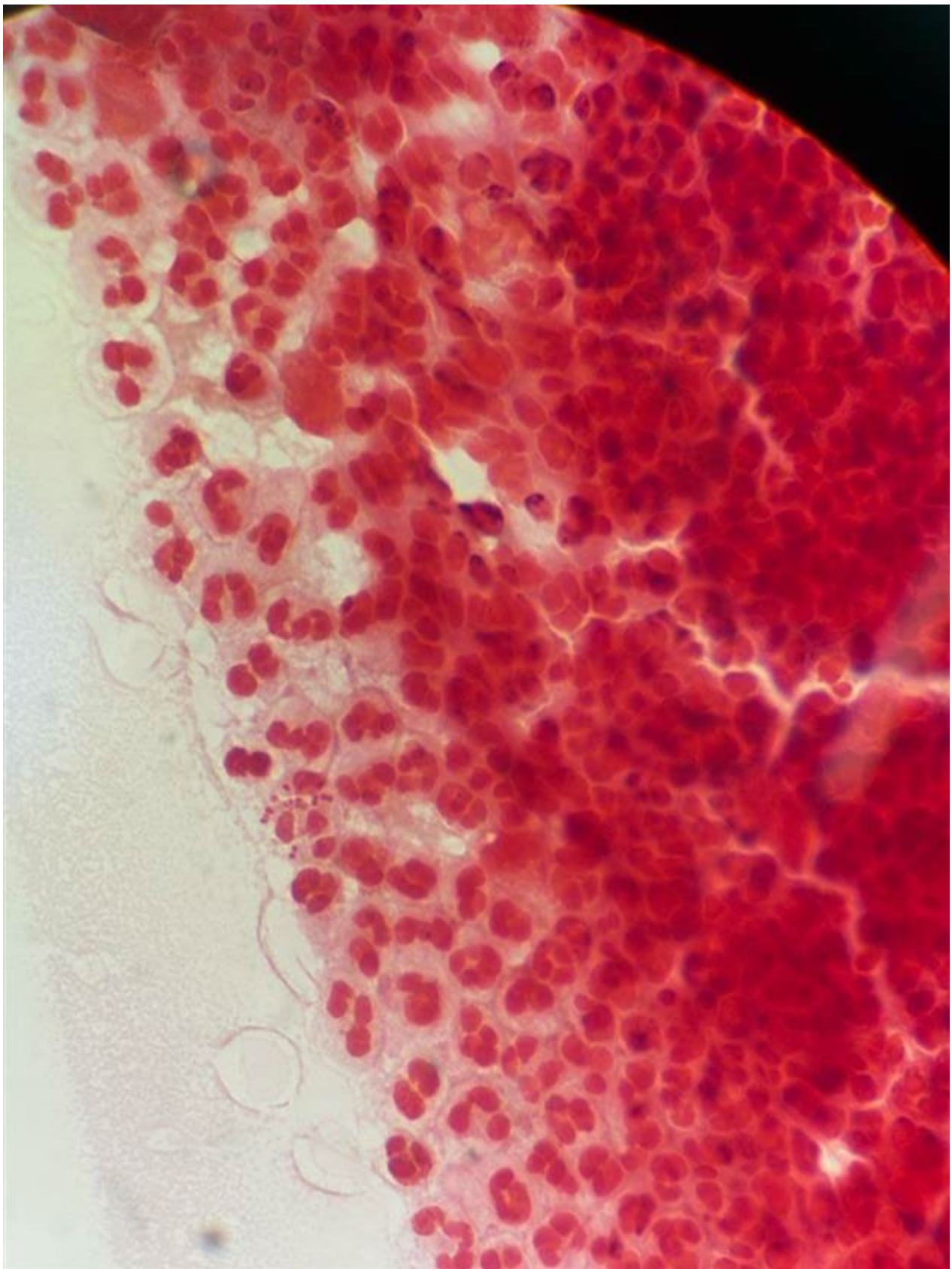
Septic arthritis is a medical emergency requiring prompt diagnosis to prevent joint damage. *Neisseria gonorrhoeae* is an important but often overlooked cause, especially in sexually active patients. Microbiological diagnosis is challenging as synovial fluid cultures are frequently negative. Delayed recognition can lead to inappropriate management.

Cases

We report two adult cases (one male and one female) of gonococcal septic arthritis presenting within four months. Both were sexually active and had recent overseas travel. Presentations were non-specific, with acute joint symptoms. Synovial fluid Gram stain in both cases showed gram-negative cocci. *N. gonorrhoeae* was isolated from synovial fluid culture in one case. In the second, routine cultures were negative, and diagnosis was confirmed by nucleic acid amplification testing (NAAT) of synovial fluid. Both patients were treated with intravenous ceftriaxone and made a full recovery.

Conclusion

These cases highlight the limitations of routine culture and the need to consider *N. gonorrhoeae* in sexually active patients with acute arthritis, even without genitourinary symptoms. Culture-positive and NAAT-only findings show the importance of targeted microbiological testing to guide timely antimicrobial therapy. Early recognition and appropriate diagnosis are essential to optimise outcomes, prevent joint damage, and address public health implications amid rising gonorrhoea rates and emerging resistance.



[P23] Management of Native Vertebral Osteomyelitis at a UK Teaching Hospital: Retrospective Audit Against IDSA Guidelines

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Purpose

Native vertebral osteomyelitis (NVO) requires prolonged antimicrobial therapy and carries significant morbidity. The 2015 IDSA guidelines provide evidence-based recommendations, yet adherence varies. We audited NVO management at a UK teaching hospital against these standards.

Methods

Retrospective observational cohort study of adults with NVO managed via outpatient parenteral antimicrobial therapy (OPAT) at Oxford University Hospitals from 2022-2024, with one-year follow-up. Metalwork-associated infections were excluded. Cases were assessed against IDSA guideline standards for baseline investigations, imaging, microbiological sampling, and antimicrobial duration.

Results

Thirty-three patients were included; lumbar involvement predominated (76% with osteomyelitis). Pathogens were identified in 82%; *Staphylococcus aureus* was commonest (33%). Only 42% had two blood culture sets. MRI was universal. Among 13 patients with negative blood cultures, 76% proceeded to biopsy. However, IDSA guidelines recommend biopsy unless cultures yield *S. aureus* or *S. lugdunensis* specifically; only 8% (1/12) with other bacteraemias underwent biopsy, mirroring NITCAR findings. Eighty-four percent received at least six weeks of parenteral or highly bioavailable oral therapy. Treatment success was 73%; *S. aureus* infections demonstrated a 36% failure rate (4/11).

Conclusions

UK practice diverges from IDSA biopsy recommendations when non-staphylococcal pathogens are cultured from blood, reflecting clinical judgement that invasive sampling is unnecessary when a plausible organism is identified. However, low repeat biopsy rates for non-diagnostic samples represent a possible improvement area. The high *S. aureus* failure rate warrants investigation into optimal management of this subgroup.

[P24] What Bugs? – The microbiology of Trauma Associated Infections in the Major Trauma Centre in Dublin

Josephine Hebert¹, **Michael Feely**¹, Aisling Spratt¹, Ahmed Al Badi¹, Katherine Egan¹, Robert Milling¹, Kasie O'Reilly¹, Kevin McSorley¹, Claire Kenny¹, James Woo¹, Colette O'Connor¹, Christine Quinlan¹, Eavan Muldoon¹

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Multidisciplinary meetings (MDTs) are crucial for improving patient outcomes. In the Major Trauma Centre (MTC) in Dublin, Ireland, a new orthopaedic, plastic surgery, and infectious diseases (OPID) MDT discusses complex trauma cases and challenging post-operative complications.

We performed a retrospective review of patients discussed at the OPID MDT between January 2024-September 2025 inclusive. Collected data included age, gender, reason for discussion, mechanism of injury, causative organisms in infections, and treatments (antimicrobial and surgical).

67 patients were discussed at the OPID MDT, 52 (77.6%) of whom were male. Most cases involved polymicrobial infections (N=34), while no infection was suspected in 11 cases. On average, in polymicrobial infections, 3 micro-organisms were cultured on average. Gram positive organisms were most common (94/123), in trauma and post-operative cases. Staphylococcus aureus was the most frequently cultured organism (29/123) and was methicillin-sensitive in 24 isolates. It was cultured in polymicrobial infections in 15/34 cases, and caused 45% (13/29) of monomicrobial infections. 16S rDNA PCR was sent on 8 culture-negative samples, detecting bacterial DNA in 3 (37.5%). Aspergillus fumigatus and C. albicans were the only fungal species isolated, in 3 separate patients. 31 patients presented with open fractures, with only 1 growing a bacteria resistant to perioperative prophylactic antimicrobials per local guidelines.

The complexity of cases discussed at the OPID meeting, illustrated by the wide range of pathogens involved, prolonged antibiotic courses and multiple surgeries required emphasizes the importance of OPID MDTs in MTCs and of frequent audits of the microbiological profile of cases and antimicrobials used.

[P25] Cracking the case : From culture to cure

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Background

Rat bite fever, a rare zoonosis caused by *Streptobacillus moniliformis*, often evades early recognition due to protean, nonspecific features. We report an unusual presentation masquerading as septic arthritis.

Methods

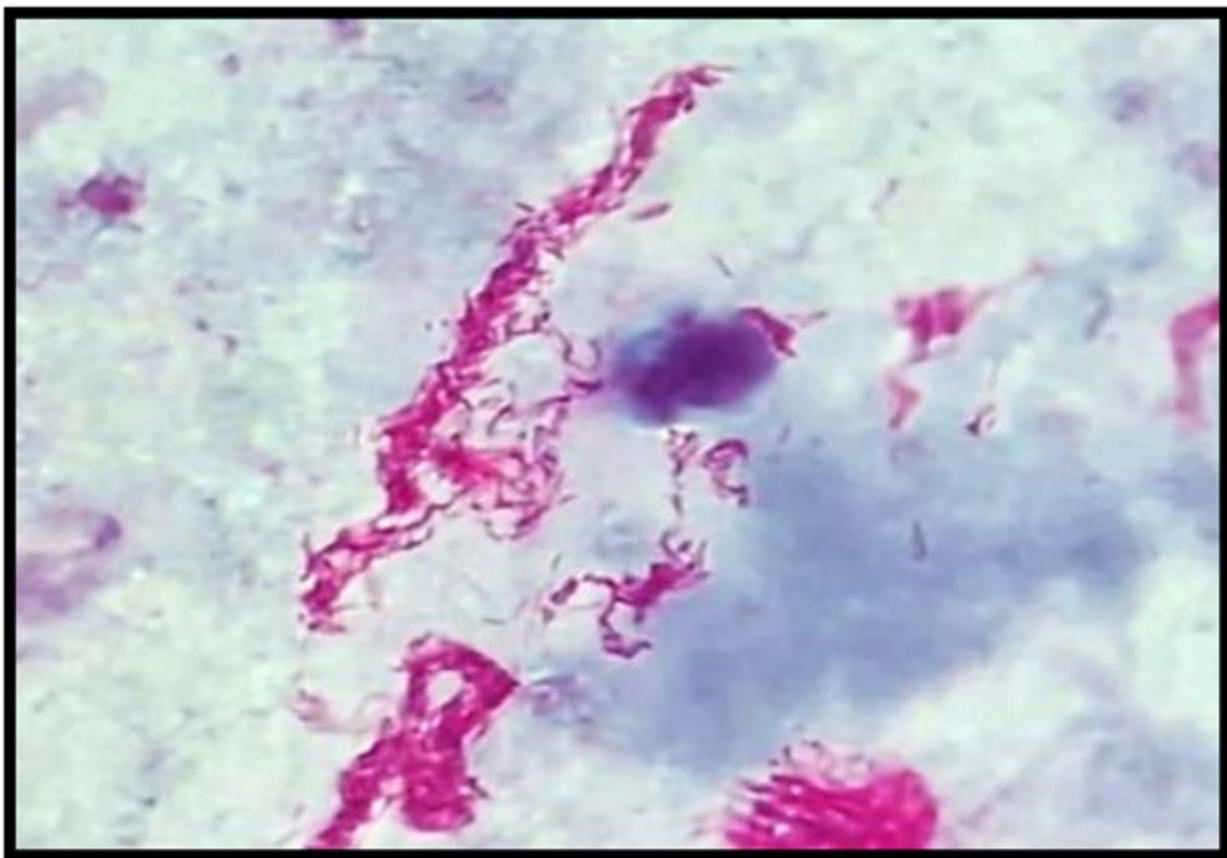
A 44-year-old woman presented with 1 week of fever, rash and polyarthralgia with a palpable right-knee effusion following a viral-like prodrome. Synovial aspirate was directly inoculated into blood culture media and empirical co-amoxiclav was commenced with planned ambulatory reassessment. Blood cultures and inflammatory markers were monitored.

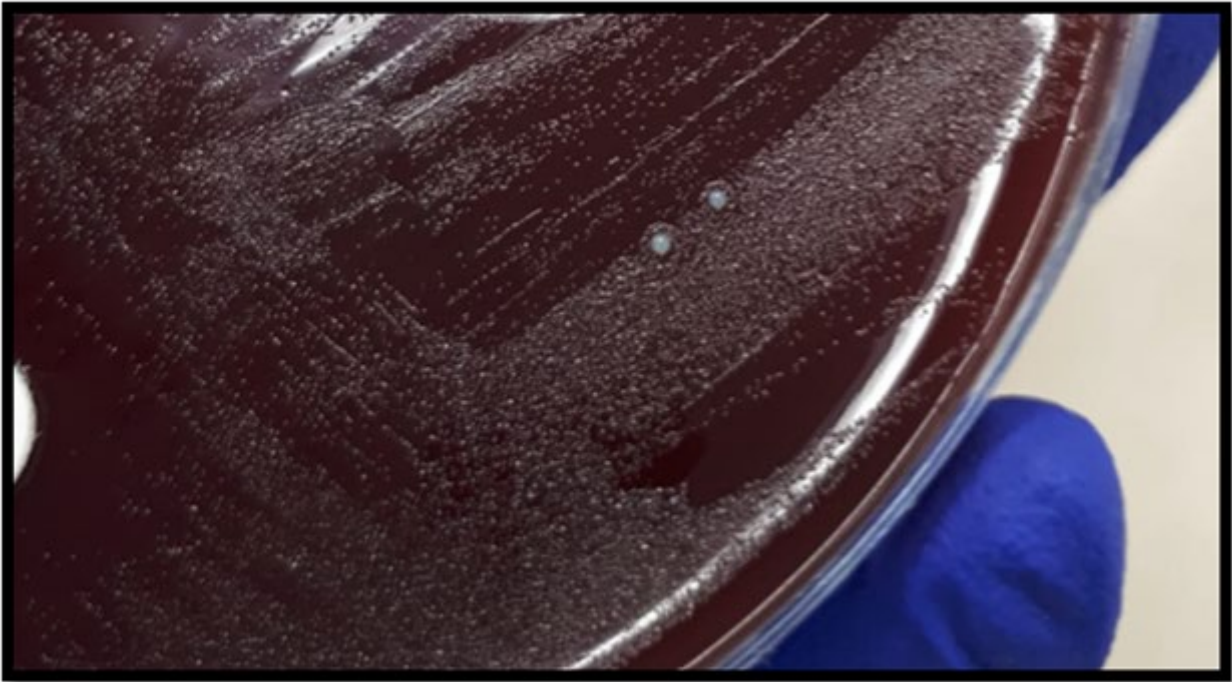
Results

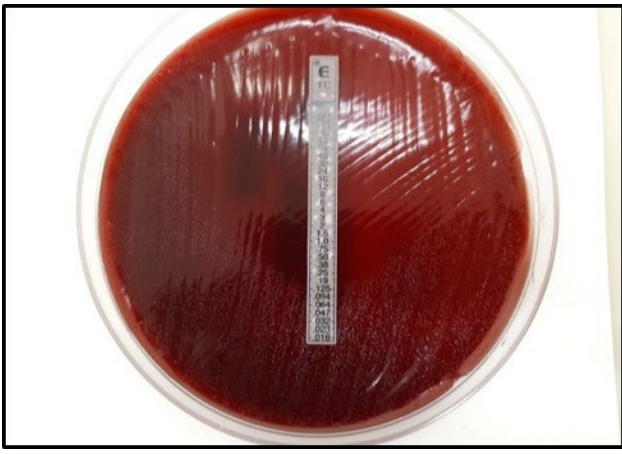
Peripheral blood cultures remained sterile. Synovial fluid signalled positive at 2.6 days, yielding *Streptobacillus moniliformis* (penicillin-sensitive). Exposure history revealed ownership of five pet rats, occasional nibbling but no frank bite. Patient completed a four-week antibiotic course with weekly review and achieved full recovery.

Conclusion

A fastidious organism, non-specific early features and negative blood cultures make *S. moniliformis* a diagnostic challenge. High clinical suspicion, careful exposure history (including pet rodents) and appropriate microbiological technique are pivotal to avoid missed or delayed diagnosis; prompt, directed antibiotic therapy yields excellent outcomes.







[P26] The Result of Standardized “No Touch Sampling Technique” Combine with BCB for Bone and Soft Tissue Infection

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Purpose

In this study, we hypothesized that the effectiveness of the “No Touch Sampling Technique” combined with the blood culture bottle (BCB) system is superior to the conventional swab culture in terms of required specimen amount and microbial identification rate. We also analyzed the pathogen spectrum and antimicrobial resistance patterns, as well as the coverage of commonly used dual antimicrobial regimens.

Methods

We analyzed the prospectively collected data of 77 cases that underwent surgical treatment for suspected or confirmed bone and soft tissue infection at our center in 2025. Each sample was collected using sterile, single-use instruments to inoculate aerobic and anaerobic BCB. We also collected one swab sample from the identical area. Compare positivity rates between culture modalities; summarize overall pathogen spectrum, single-agent susceptibility rates, and standard dual-agent regimen coverage.

Result

The overall detection rate is 93.50% for primary revision surgery cases (72/77). Across 328 specimens, the positive rates for blood culture bottle inoculation and anaerobic culture were 75.61% (248/328) and 72.56% (238/328), respectively, significantly higher than the 24.09% positive rate for swab culture (79/328) ($P < 0.001$). The multi-pathogen detection rate was 20.83%, plateauing at a rate of 5 or more samples as the number of samples increased. Antimicrobial susceptibility patterns showed dual-drug combinations such as vancomycin + amikacin, vancomycin + meropenem, and vancomycin + rifampin demonstrate higher coverage rates.

Conclusions

“No Touch Sampling Technique” combined with a blood culture bottle is superior to the conventional swab culture. The empirical value of certain cephalosporins and traditional oral β -lactams has diminished.

[P27] Culture-Negative Septic Arthritis in an Immunosuppressed Host: The Hidden Threat of *Mycoplasma hominis*

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Background

Mycoplasma hominis is a cell wall-deficient genital tract commensal that can cause invasive infection in immunocompromised hosts. Septic arthritis due to this organism is rare, difficult to culture, and intrinsically resistant to beta-lactams and glycopeptides, posing diagnostic and therapeutic challenges. Patients with systemic lupus erythematosus (SLE) are at increased risk of atypical and opportunistic infections.

Case

A 57-year-old woman with SLE on maintenance prednisolone presented with progressive right wrist swelling. Escalation of steroids and treatment for crystal arthritis were ineffective. Ultrasound-guided aspiration yielded purulent fluid, but Gram stain and routine cultures were negative. Empirical antibiotics per local guidance were commenced. She later developed fever, sepsis and was escalated to critical care. Four weeks after symptom onset, 16S rRNA PCR from synovial fluid detected *M. hominis*, prompting initiation of doxycycline and subsequent addition of levofloxacin and clindamycin following clinical deterioration. Susceptibility testing by a national reference laboratory confirmed sensitivity to these agents. Bronchoalveolar lavage (BAL) specimens tested negative for *Mycoplasma hominis*. Her course was complicated by candidaemia, CMV viraemia, CMV pneumonitis, *Pneumocystis jirovecii* pneumonia, renal impairment, profound thrombocytopenia and DIC. Despite maximal therapy, she deteriorated and transitioned to end-of-life care.

Conclusion

M. hominis septic arthritis should be suspected in immunosuppressed patients with culture-negative infection and poor response to standard therapy. Early clinical suspicion, prompt use of advanced molecular diagnostics, such as 16S rRNA PCR, and multidisciplinary discussions with infection specialists are critical to enable timely targeted therapy. Delayed recognition may contribute to adverse outcomes in this high-risk population.

[P28] Endpoint Sensitivity and Non-Inferiority in Diabetic Foot Surgery: An Exploratory Subgroup Analysis of the SOLARIO Randomised Trial

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Antibiotic duration following diabetic foot surgery is a topic which remains controversial and uncertain among clinicians. Shorter courses may reduce side effects, antibiotic resistance and overall costs, but safety ought to be ensured if this practice is adopted. We analysed outcomes among participants with diabetes enrolled in the SOLARIO randomised trial.

Methods

We conducted a subgroup analysis of participants with diabetes undergoing foot surgery within the SOLARIO randomised trial comparing short- and long- course systemic antibiotic therapy. The primary endpoint was definite treatment failure as defined in the trial protocol. Secondary endpoints included probable failure and composite outcomes. Absolute risk differences were estimated using binomial regression with identity link. The absolute non-inferiority margin was set at 10% as per the primary endpoint of treatment failure at 12 months, in accordance with the parent trial design

Results

Fifty-one participants were included (31 long-course, 20 short-course). Median antibiotic duration was 42 days (IQR 31–47) in the long arm and 7 days (IQR 6–32) in the short arm.

Definite treatment failure occurred in 16.1% (5/31) in the long arm and 10.0% (2/10) in the short arm (risk difference –6.1%, 95% CI –24.6 to 12.3). Although the confidence interval was wide, the upper bound of the short-course therapy did not exceed the 10% margin previously defined.

When broader endpoints were measured, definite or probable failure occurred in 25.8% versus 35.0% respectively (risk difference 9.2%, 95% CI –16.8 to 35.2), and non-inferiority was not demonstrated.

Local antibiotic therapy was administered to all participants in the short-arm group. Gentamicin-containing preparations were the most frequently used (75%), followed by vancomycin (35%).

Tobramycin and clindamycin were not used. Reported doses varied, with a single extreme value of 5 mg likely reflecting a recording error rather than actual antibiotic content.

In this dataset, each participant was recorded as receiving a single systemic antibiotic agent during the treatment period. Therefore, analysis of antibiotic sequencing or combination therapy was not possible. The most frequently used antibiotic therapy included co-amoxiclav, ciprofloxacin, and teicoplanin, reflecting broad-spectrum coverage in this cohort. Despite allocation to short-course therapy, 28% of participants received more than 8 days of systemic antibiotics, indicating frequent extension of treatment beyond the intended protocol.

Conclusions

Within this small exploratory analysis of cases of diabetic feet surgery, short-course antibiotics did not increase definite treatment failure and met non-inferiority criteria for this outcome. However, the precision of estimates was limited, and inference varied substantially according to endpoint specification. The high rate of systemic antibiotic extension in the short course group suggests potential deviations from a protocol which affect interpretation. These findings underscore the influence of outcome definition on non-inferiority conclusions in high-risk surgical populations and highlight the need for adequately powered dedicated trials in diabetic foot infection.

[P29] Surprising native clavicular osteomyelitis in an immunocompetent adult

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A 32-year-old female was referred to the bone infection clinic (BIU) from the sarcoma team with six months of progressive pain and swelling in the left medial clavicle. Her history included palindromic small joint polyarthritis and extensive travel history to Southeast Asia, Argentina and Africa, some for archaeological digs but no orthopaedic surgery.

MRI had demonstrated an expansile subarticular lytic lesion of the left medial clavicle extending up to the midshaft level along with cortical erosion and extraosseous component and diffuse surrounding soft tissue oedema. CT guided bone biopsy had excluded malignancy and revealed an inflammatory cell infiltrate. Gram, ZN and fungal stains were negative. No microbiology had been sent at this point.

When seen in BIU, the clinical features, imaging and histology were consistent with osteomyelitis or non-bacterial osteitis (NBO). Whole body MRI showed some non-specific changes in the lumbar spine (further MRI awaited). Serology for dimorphic fungi, brucella and coxiella were non diagnostic. A further biopsy was done as an open surgical procedure. Five samples were taken using the no-touch technique and each using separate sterile instruments. The area was debrided and a bone void filler used.

Four out of five samples grew *Cutibacterium acnes*. Histology showed a diffuse mixed inflammatory cell infiltrate.

This case highlights the possibility of *C. acnes* as a pathogen particularly in the upper limb. There have been similar case reports. In this case the diagnosis seems likely based on sampling, although NBO not excluded. She has commenced oral doxycycline and will be followed up.

[P30] Clostridium Perfringens Prosthetic Joint Infections: A Case Report and Literature Review

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Purpose

Clostridium perfringens is a Gram-positive, spore-forming, toxin-producing anaerobic pathogen rarely implicated in prosthetic joint infections (PJIs). We present a complex case and literature review of *Clostridium perfringens* PJIs to identify patterns in presentation, management, and outcomes.

Methods

We conducted a literature review of PubMed for case reports and series describing microbiologically confirmed *Clostridium perfringens* PJIs. Fifteen cases met the inclusion criteria.

Case Presentation

A 91-year-old female presented two weeks post-hemiarthroplasty with wound discharge and pyrexia. Due to the clinical suspicion of a PJI, she underwent a Girdlestone excision arthroplasty. Intraoperative findings included multiple sinus tracts and extensive soft tissue necrosis. The patient developed septic shock postoperatively. Intraoperative cultures grew *Clostridium perfringens* and *Escherichia coli*. She was treated with intravenous meropenem followed by oral amoxicillin and co-trimoxazole before her discharge to rehabilitation to complete a 12-week antibiotic course.

Literature Review

Fifteen cases met the inclusion criteria, with a median age of 70 (Interquartile Range 64-80), which mostly involved the hip (53%) and knee (47%) joints. Most were monomicrobial (93%) and early-onset PJIs (67%). Among late-onset PJIs, a biliary source was identified in 80% of cases. Penicillin (60%), clindamycin (33%) and metronidazole (33%) were the predominant antibiotics used. No relapses were reported on follow-up.

Conclusion:

This case and literature review highlight the need for early recognition and management of *Clostridium perfringens* PJIs, given their rarity and clinical severity. Late-onset *Clostridium perfringens* PJIs often reflect biliary source infections. Multidisciplinary efforts, appropriate source control, and targeted antibiotic therapy are essential for favourable outcomes.

[P31] Establishing the first Orthopaedic Infection Biobank in Denmark – FRAMED MSI. Fragment Recognition of All Musculoskeletal Infections Providing Early Diagnostics

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Purpose

Musculoskeletal infections (MSI) constitute severe and intricate clinical entities associated with substantial morbidity and mortality, presenting significant diagnostic and therapeutic challenges. The timely diagnosis of these conditions remains difficult, and the escalating issue of antimicrobial resistance further complicates effective treatment strategies. High-quality frozen biospecimens serve as a critical resource for hypothesis-driven research, facilitating accelerated identification and development of novel diagnostic biomarkers. FRAMED MSI aims to improve early recognition and understanding of MSIs through systematic collection and storage of biological samples and predefined clinical data.

Methods

All patients with suspected or confirmed MSI are enrolled and followed up for two years, with extended questionnaire-based follow-up for up to ten years. Blood samples, intraoperative tissue specimens, joint fluid, and microbiological isolates are collected and stored in a dedicated biobank. Predefined clinical data, including demographics, comorbidities, treatment strategies, imaging findings, microbiological results, and clinical outcomes, are collected. Planned analyses include routine laboratory testing, bacterial culture, immune profiling, and investigation of signalling molecules associated with infection and inflammation.

Results

The presentation will address the logistical challenges and barriers associated with establishing an MSI Biobank. Additionally, preliminary biological data and test results will be presented.

Conclusions

FRAMED MSI establishes a comprehensive resource to advance understanding of MSIs and strengthen research capacity, including antimicrobial resistance surveillance. By integrating clinical and tissue-specific phenotyping with long-term clinical follow-up, the study will support improved diagnostics, targeted treatment strategies, and preventive approaches. Additionally, immunosuppressive effects and other host-related factors on infection severity and outcomes will be investigated.

[P32] Introducing “Antimicrobial Brachytherapy” Protocol for Chronic Periprosthetic Joint Infection in Total Knee Arthroplasty: Case Series with Preliminary 2-year Results

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Background

Success rates treating chronic PJI have plateaued in the last two decades. Extended systemic antimicrobials have known detrimental host effects. This study introduces a tactical treatment shift focusing on local biocidal treatment, that we aptly name “antimicrobial brachytherapy” protocol (ABP).

Methods

A consecutive series of 25 patients with chronic PJI in TKA were treated with ABP which includes:1)local multimodal antimicrobial therapy applied during debridement reaching microbial reserves,2)eliminating parenteral antimicrobials,3)employing variable explantation times (longer when needed) via a 1.5 exchange technique allowing individualized host/limb rejuvenation. Patients were graded according to McPherson staging. MSIS tier levels were used to rate success. All patients had a minimum two-year follow-up.

Results

Most patients were significantly compromised; B and C hosts having 2 and 3 limb scores comprised 80% of the cohort. MSIS tier rating showed 16/25(64%) tier 1 success(infection free without antimicrobial suppression). There were 2/25(8%) tier 3C outcomes(aseptic revision at 3 and 5 months), and 6/25(25%) tier 3E failures with 4 amputations for continued infection, and two repeat 1.5 exchanges for recurrent infection. Of the 4 patients amputated, 3 had fungal microbes identified in post-resection aspirations. Lastly, there was one (4.15%) tier 4a outcome (mortality at 8 weeks).

Conclusion

The ABP concept is a tactical shift focusing antimicrobial therapy within the zone of infection, avoiding extended antimicrobials, and allowing variable explantation time for host/limb rejuvenation. Success was comparable to published 2-stage MSIS Tier 1 outcomes despite our very compromised cohort. The ABP’s early results are encouraging, and justify further rigorous evaluation and refinement.

| Items | Description | Dosing | Comments |
|---|---|--|---|
| 1.5 Implant Exchange Technique | Cemented Commercial Implants with <u>High Dose</u> Antimicrobial Loaded Bone Cement | | Provides patient comfort & longer explantation time to allow host & limb rejuvenation |
| High Dose Antimicrobial Loaded Bone Cement (ALBC) | <u>High Dose</u> Antimicrobial Formula Closed bowl mixing w/ digital pressurization of cement within bone Calcium sulfate beads w/in canals serve as restrictor | 40g Palacos® powder 5g vancomycin powder 3.6g tobramycin powder 10cc saline with 1cc methylene blue Antifungal when needed: Voriconazole 400mg | Saline is added with the monomer to mix all powders Methylene blue serves as cement marker & accelerant |
| Operative Antiseptic Lavage - 1:1 PIHP | Lavage after removal of all implants and debridement 1:1 mix of povidone iodine & hydrogen peroxide | 10% Povidone Iodine + 3% Hydrogen peroxide Dwell time 5 minutes each application Rinse with saline until clear | Mixed at point of care Deliver immediately after mixing. Irrigate target areas w/ bulb syringe including medullary canals. |
| Antimicrobial Loaded Calcium Sulfate Beads (ALCSB) | Mix antimicrobials into CaSO ₄ powder Create 3.0 & 4.6mm beads | Synthecure® 10cc CaSO ₄ powder Mix 1g vancomycin powder & 240mg tobramycin liquid (6cc) per 10cc powder Antifungal when needed: Voriconazole 200mg per 10cc powder | Fill the canals with beads up to the level of stems 10-15 cc bead volume into joint space (Note: 10cc CaSO ₄ powder makes ≈25cc bead volume) |
| Limited Parenteral Antimicrobials | No more than 3 days Weight-based 1 st generation cephalosporin | Ancef 1-3g every 8 hours | Used for <u>prophylactic purposes</u> only No long-term indwelling percutaneous catheters |
| Oral Antimicrobial of limited duration | Doxycycline, if possible (human cell membrane permeable) | Duration 3 weeks only | Tailor to microbe sensitivity |

[P33] Osteomyelitis: A Rare But Serious Complication of Hidradenitis Suppurativa

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Background

Hidradenitis suppurativa (HS) is a chronic inflammatory skin disorder marked by recurrent nodules, abscesses, sinus tracts, fistulae, and scarring in intertriginous areas. Although associated with significant morbidity, osteomyelitis (OM) remains a rare and underrecognized complication, with limited guidance for diagnosis and management.

Methods

We report an institutional case of HS-associated OM and performed a literature review of published cases. In July 2025, two reviewers searched PubMed, Embase, and Scopus using predefined terms, identifying 14 cases.

Results

Our case involved a male with Hurley stage III HS (severe, diffuse disease with interconnected sinus tracts and extensive scarring) admitted for advanced gluteal involvement complicated by MRI-confirmed sacral osteomyelitis. Initial antibiotic therapy failed, requiring bone biopsy, prolonged intravenous antibiotics, and re-initiation of adalimumab. Interruption of biologics was followed by recurrent infection and progression, whereas resumption led to clinical stabilization, underscoring the importance of inflammatory control.

Across 15 cases, patients were predominantly male (80%) with a median age of 53 years and advanced HS. Osteomyelitis most frequently involved the sacrum or coccyx (87%), consistent with contiguous spread. Bone cultures were obtained in 26%. Treatment approaches varied: 73% received antibiotics, 33% underwent surgical debridement, and 33% received TNF- α inhibitors. Squamous cell carcinoma occurred in 20% of cases.

Conclusions

HS-associated OM should be suspected in advanced gluteal disease associated with intractable pain or refractory infection. Bone biopsy and cultures are essential to guide antimicrobial therapy. Remission appears to require aggressive control of underlying inflammation, often necessitating biologic therapy in addition to antimicrobial and surgical management.

[P34] Can classifications predict outcomes in long bone Fracture Related Infection or Osteomyelitis?

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Purpose

To compare the Cierny-Mader and JS-BACH Classification in predicting treatment success and quality of life (QoL) in long bone osteomyelitis.

Methods

Patients undergoing reconstructive surgery for long bone infection between 2006 and 2016 were retrospectively identified. Infection was confirmed using clinical, microbiological, and/or histological criteria. Cierny-Mader classification was assigned at the time of surgery; JS-BACH classification was applied retrospectively, blinded to outcome. Treatment failure was defined as recurrent infection confirmed clinically, microbiologically, or histologically at the same site. A second cohort (2019-2022) was classified prospectively using both systems. QoL was assessed pre-operatively and at five post-operative timepoints using the EQ-5D-5L.

Results

A total of 456 patients were included (mean follow-up 4.2 years). Treatment failure occurred in 44 cases (9.7%). Failure was significantly higher in JS-BACH 'complex' cases (41/337; 12.2%) compared to 'uncomplicated' cases (3/119; 2.5%) (HR 5.3;95%CI1.6-17.0). On multivariate analysis, greater severity in Bone (HR 3.5;95%CI1.8-6.9), Antimicrobial options (HR 2.9;95%CI1.6-5.5), and Host status (HR 2.8;95%CI1.3-6.2) independently predicted failure. Soft tissue coverage requirements were not associated with outcome. Cierny-Mader classification did not significantly differentiate failure risk between anatomical types or host grades.

At two years, JS-BACH 'uncomplicated' patients reported significantly higher QoL than 'complex' patients (0.898 vs 0.552, $p < 0.001$). Bone severity and Host status independently predicted QoL. Cierny-Mader Anatomic Type IV was associated with lower QoL than Type III, but host status was not predictive.

Conclusion

The bone/anatomic component of both systems predicts QoL. However, JS-BACH more effectively stratifies treatment failure risk and provides meaningful prognostic information pre-operatively.

[P35] Can extending enrichment duration improve yield of *Cutibacterium acnes* in shoulder prosthetic joint infection?

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Purpose

Cutibacterium acnes is a recognised cause of shoulder prosthetic joint infections (PJI), often requiring a prolonged culture period for successful isolation. Currently, enrichment culture duration varies between laboratories. Local practice has been to incubate directly on agar and for 5 days in Fastidious Anaerobe Broth (FAB) enrichment broth. We trialled a modified protocol, extending culture to 14 days and sought to determine whether this improved culture yield of *C. acnes* from shoulder tissues.

Methods

From January-December 2025, shoulder PJI tissues submitted to Infection Sciences at Severn Pathology were cultured directly as before, and incubated in FAB and also an anaerobic blood culture bottle (aBC), both for 14 days or until positive. Culture results were collated.

Results

108 shoulder PJI tissue samples were analysed from 26 surgical procedures in 21 patients. 66/108 samples were processed fully compliant with the modified protocol. 30/108 were not inoculated in an aBC. *C. acnes* was isolated in 12 samples from 5 procedures (4 patients). One of these patients, who had two procedures, had tissues isolating *C. acnes* on extended FAB enrichment culture only on one occasion. *C. acnes* was cultured within 5 days from the other 4 procedures. *C. acnes* was not cultured from any of 78 aBCs.

Conclusion

Despite small numbers, we found extended enrichment culture of shoulder tissue for 14 days in FAB, but not aBCs, can improve *C. acnes* yield compared to 5-day incubation. We now need to evaluate the impact of isolating more contaminants against the modest improvement in yield.

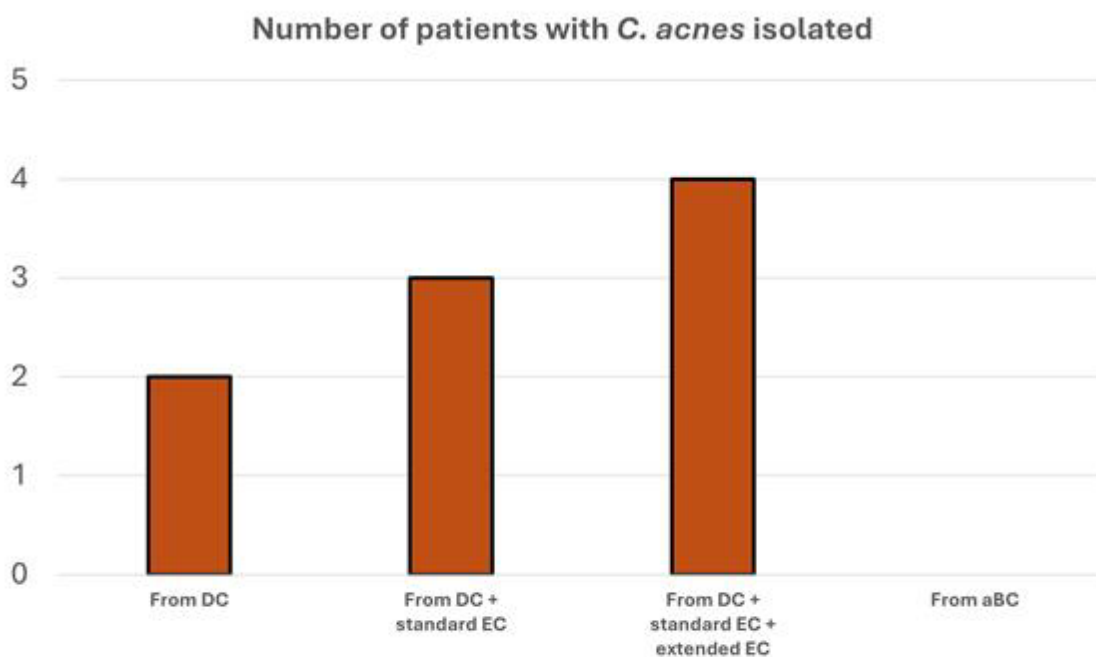


Figure 1. Number of patients whose shoulder PJI tissue samples isolated *C. acnes* from Severn Pathology Services over 2025. Cumulative graph of direct culture, standard EC (0-5 days incubation), and extended EC (5-14 days incubation) as well as aBC incubation for 14 days. aBC = anaerobic blood culture bottle, DC = direct culture, EC = enrichment culture, PJI = prosthetic joint infection.

[P36] Two knees Too Many. Arthrodesis versus reimplantation in bilateral knee infection.

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We report two cases of bilateral knee infection in patients with unilateral total knee arthroplasty (TKA) and contralateral native joint involvement.

Case 1: A 75-year-old cow farmer with a history of left TKA presented with bilateral knee effusion. Arthrocentesis confirmed septic arthritis of the right native knee and periprosthetic joint infection (PJI) of the left TKA, both caused by methicillin-sensitive *Staphylococcus aureus* (MSSA). After initial irrigation and debridement of the right knee and antibiotic therapy, the patient deferred the proposed two-stage revision for the left knee and was lost to follow-up. Four months later, he returned with recurrent bilateral infection and severe articular destruction of the right knee, requiring repeat debridement with partial extensor mechanism sacrifice. The left prosthesis was explanted and an antibiotic spacer was put in place. Due to extensive damage, the right knee underwent arthrodesis with a circular external fixator. Reimplantation of the left TKA was performed eight weeks later, and solid fusion of the right knee was achieved. The patient finally had excellent left knee motion and pain-free ambulation.

Case 2: A 63-year-old farmer with prior right TKA and left femoral intramedullary nailing presented with recurrent bacteremia and bilateral knee infection. Cultures grew multisensitive *S. aureus* and additional organisms. The left nail was removed with debridement, followed by right TKA explantation and spacer placement. Progressive degeneration of the left knee required spacer implantation. Second-stage revision was completed on the right, while the left knee required arthrodesis. At final follow-up, the patient had returned to daily activities.

[P37] *Malassezia pachydermatis* in a Fracture-Related Infection

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Background

Malassezia species are human and animal skin flora yeasts. *Malassezia pachydermatis* is typically dog-associated. Treatment for invasive infections is usually fluconazole or amphotericin B.

Case

19-year-old with open tibial plateau fracture secondary to motorcycle road traffic collision requiring open reduction internal fixation (ORIF) and medial gastrocnemius flap. Background: type 1 diabetes, splenectomy (trauma).

Four months after ORIF, presented with fracture-related infection (*Staphylococcus aureus*/*Staphylococcus epidermidis*), non-union and soft tissue breakdown. First-stage required metalwork removal, segmental bone resection, insertion of antibiotic-loaded cement spacer (vancomycin, gentamicin), application of spanning circular frame and anterolateral thigh flap reconstruction.

First-stage samples grew *Malassezia pachydermatis* (5/6; enrichment culture (EC) only). Patient systemically well, owned a dog - healthy, no direct wound contact although dog allowed in bed. Discussed with Mycology Reference Laboratory; first-stage debridement repeated. Managed with liposomal amphotericin B locally in cement and systemically (peri- and post-operatively), completing two weeks with high-dose oral fluconazole. Intra-operative findings: nail biofilm (exchanged), no other overt evidence of infection.

No *Malassezia* subsequently isolated, but vancomycin-resistant *Enterococcus faecium* and *Staphylococcus epidermidis* in 2/5 samples (EC only). Treated with pristinamycin, planned to continue until second stage bony reconstruction - induced membrane technique augmented by a 3D-printed bioabsorbable graft case (DePuy Synthes).

Discussion

Malassezia pachydermatis likely transmitted from the patient's dog through direct contact. Unclear source and significance of the VRE, but treatment initiated in light of pending bone grafting procedure.

Conclusion

Malassezia pachydermatis is an unusual pathogen to cause a fracture-related infection, but appeared to be successfully eradicated with debridement alone.

[P38] Multidrug resistant *Fusarium solani* eumycetoma with midfoot osteomyelitis treated with radical surgical debridement and fosmanogepix resulting in successful limb salvage

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Eumycetoma is a rare, chronic fungal infection with potential for extensive soft tissue and bone destruction, often presenting diagnostic and therapeutic challenges in non-endemic regions. We report a case of *Fusarium solani* eumycetoma involving the midfoot of a 47-year-old man from Indonesia who presented with a two-year history of a painless enlarging medial midfoot mass. Imaging demonstrated a multiloculated soft tissue lesion with intraosseous extension and marrow oedema. Histopathology revealed neutrophilic inflammation with PAS-positive filamentous organisms, but cultures were negative. Repeat biopsy identified pan-resistant *Fusarium solani* with only intermediate sensitivity to voriconazole. He commenced oral voriconazole and terbinafine and was referred to orthopaedics for consideration of debridement. After approximately 8 months on systemic antifungals he underwent staged joint orthopaedic/plastics procedure involving radical debridement, implantation of antifungal-loaded cement (voriconazole and amphotericin B), stabilising metal plate, and free flap reconstruction. Multiple intra-operative samples isolated the MDR *Fusarium solani*. Access to the novel antifungal fosmanogepix (FMGX) was obtained through the Expanded Access Programme (EAP), but initiation delayed due to the necessary approvals. He switched to monotherapy with oral FMGX 4.5 months post debridement, with no toxicity and no clinical recurrence. On 25th Feb 2026 he is planned for definitive orthopaedic intervention with removal of the previous cement/metal plate and reconstruction with bone graft.

This case highlights the importance of confirming the pathogen in eumycetoma cases, the need for coordinated surgical and novel medical strategies in managing resistant fungal bone infections, and is to our knowledge the first case of FMGX use in the UK.

[P39] The Orthoplastic Gap: A National Survey on the Management of Open Fractures and Systemic Barriers to Collaborative Care in Ireland

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Purpose

International guidelines emphasize early orthoplastic collaboration to prevent bone infection and optimize outcomes in complex open fractures. This study evaluates guideline adherence, clinical practices, and systemic barriers across the Irish trauma network.

Methods

A national cross-sectional survey was distributed to Irish orthopaedic and plastic surgery consultants and trainees, yielding 118 consenting participants.

Results

Although 61.9% of respondents routinely use BOAST standards, infrastructural and clinical deficits are profound. Adherence to acute protocols is low, with 17% reporting that ED wound photography is always performed. Structurally, 62.9% say their hospital lacks a formal orthoplastic pathway. The majority, 78.4%, state orthopaedics alone lead primary debridement, with only 22.7% noting a consultant is always present. Furthermore, only 14.4% report open fractures are always prioritized first on operating lists.

A significant clinical-structural disconnect exists regarding fracture severity. The majority, 81.7%, believe GA2 injuries require orthoplastic care. Yet, 64.8% report GA2 fractures do not actually receive orthoplastic care in practice. Simultaneous definitive fixation and soft-tissue coverage is rare, 11.7%. Post-operatively, 90.2% state joint ward rounds are not conducted. Systemically, 69.3% cite theatre access as a limiting factor, and 27/67 open-ended responses identified the lack of plastic surgery access as their primary challenge. Encouragingly, 81% expressed interest in national orthoplastic training.

Conclusion

Despite awareness of international standards, open fracture management in Ireland suffers from severe collaborative and structural deficits. The absence of joint pathways, and reliable plastic surgery access underscores an urgent need to formalize regional orthoplastic networks to mitigate infection risks and improve limb salvage.

[P40] The orthoplastic management of fracture related infection (FRI), early experience of a novel Multi-Disciplinary Team.

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Purpose

Since July 2023, the Mater Misericordiae University Hospital (MMUH) has experienced an increase in patients with major open limb injuries, of which fracture-related infection is a complication. In response, a monthly multidisciplinary team (MDT) meeting was established to optimise patient outcomes. The aim of this evaluation was to review the orthoplastic management of fracture-related infection in patients discussed at the MDT.

Methods

Cases of patients with fracture related infection were identified through Patient Centre records with retrospective review of multidisciplinary meeting outcomes from July 2023-December 2025 inclusive.

Results

A total of 16 patients were identified (n=16). The mean age was 41.7 years and 31.3% (n=5) were female. The mean time from surgery for acute fracture management to surgery for orthoplastic management of FRI was 158 days. At infection surgery, all patients had debridement with washout. In those with metalwork in situ, 44.4% (n=4) had removal and 66.6% (n=5) had replacement of metalwork. Local antibiotics were applied in 68.75% (n=11) of cases. Deep histological samples were obtained intra-operatively in 75% of cases, the mean number of samples were taken was 6.9. 35% samples yielded positive culture results, the majority of which were gram-positive organisms. The mean duration of systemic antibiotic treatment for our cohort was 5.25 weeks of intravenous antibiotics followed by 5.85 weeks of oral antibiotic treatment.

Conclusions

A multidisciplinary team (MDT) approach for the management of FRI has been developed at our centre which has allowed for complex treatment regimens to be implemented.

[P41] Developing a Radiological Pathway for Bone Infection Management in Secondary Care

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Background

Bone infection presents a significant diagnostic and therapeutic challenge within secondary care, frequently requiring multimodal imaging to support diagnosis, surgical planning, and treatment monitoring. Radiology plays a central role in clinical decision-making; however, radiological pathways for suspected or confirmed bone infection remain poorly defined, with no established minimum standards for imaging provision or reporting timelines. This variability may contribute to delays in diagnosis and inconsistencies in management.

Methods

A multidisciplinary service evaluation was undertaken to review existing radiological pathways for patients with suspected or confirmed bone infection managed in secondary care. Diagnostic imaging workflows were assessed, including access to magnetic resonance imaging (MRI), computed tomography (CT), nuclear medicine imaging, and image-guided intervention. Imaging availability, reporting turnaround times, and integration with multidisciplinary decision-making were analysed to identify variation in current practice. Based on identified gaps, a standardised radiological pathway was developed.

Results

Variation in access to advanced imaging modalities and image-guided sampling was identified, with delays in obtaining MRI and nuclear medicine studies impacting diagnostic certainty and treatment planning.

Conclusion

Implementation of a standardised radiological pathway may improve diagnostic efficiency, support multidisciplinary decision-making, and enhance consistency of care for patients with bone infection in secondary care.

[P42] Outcomes of Debridement, Antibiotics and Implant Retention (DAIR) for Periprosthetic Joint Infections: A Single-Centre Retrospective Review

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Introduction

Debridement, antibiotics and implant retention (DAIR) is an established treatment for acute periprosthetic joint infections (PJIs). However, reported success rates vary widely in the literature from 15- 100%, making accurate patient counselling difficult.

Aims

We performed a single-centre retrospective study to determine DAIR outcomes at our trust. The primary outcome was treatment failure requiring revision surgery. Secondary factors examined included ASA grade, BMI, time to surgery from symptom onset, time from index procedure to symptoms, presence of type 2 diabetes mellitus (T2DM) and immunosuppressant use.

Methods

All patients who underwent DAIR after primary or revision hip or knee arthroplasty at our institution between 2019 and 2024 were identified. Repeat DAIR procedures, hemiarthroplasties and non-hip or knee sites were excluded. Success was defined as infection-free survival at two years without revision surgery.

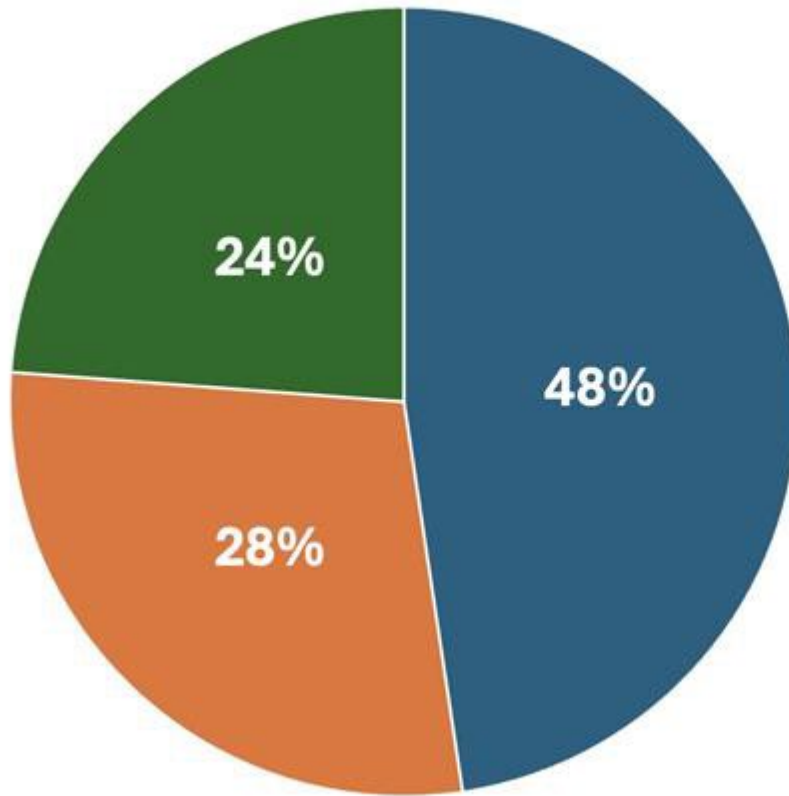
Results

Twenty-one patients met the inclusion. The overall success rate was 48%. Twenty-eight percent required revision surgery and 24% died during follow-up. Ninety-five percent of cases proceeded to DAIR within six weeks of symptom onset. Presentation of symptoms from date of index procedure followed a predominantly bimodal distribution of either 0-6 weeks (n=9) or over 52 weeks (n=11). There were no statistical differences when analysing the patient or procedural factors.

Conclusion

DAIR remains a valuable option in the management of acute PJIs, achieving a 48% success rate in our series. We plan to expand this study regionally to increase statistical power and provide more robust local data for patient and clinician decision-making.

DAIR Success



N=21

■ Yes ■ No - revision ■ No - died

Success rate by pathogen

