for 48 hours. Eradication was defined as below the limit of detection. Definitions include Sensitive (S) if 3-log decrease in bacterial density or eradication at any time point, Weakly Sensitive (WS) with 1- to 3-log decrease and Resistant (R) with no decrease.

**Results.** Based on BL alone, (n = 19), 68% strains were S, 32% were resistant. BL+R (10 μg/mL) effect in 25% (n = 3) and exerted a protective effect against 33% (n = 4). BL+D (1 μg/mL) potentiated in 67%. BL+D (0.1–1.5 μg/mL) in 83% of strains tested. The most resistant strain was eradicated using BL + D at an increased concentration of demeclocycline (2.5 μg/mL).

**Conclusion.** F and D enhanced the potential for eradication compared with BL exposure alone. R was a photo-protectant to BL for select strains. Prior studies have hypothesized endogenous intracellular porphyrins excited by BL causing energy transfer and production of highly cytotoxic reactive oxygen species causing bacterial death. Future clinical research evaluating the use of preoperative FS and surgical site exposure to BL as a preventative PJI strategy are needed. Our research with the addition of PS significantly reduces the bacterial burden of clinically relevant PJI shoulder isolates of C. acnes in an in vitro model.

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387. A Rare Manifestation of a Common Disease: Tenosynovitis Associated with Clostridium difficile: Case Report and Review of Literature

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**Session:** 48. Infections of Joints

**Background.** Reactive arthritis typically develops following enteric or genital urinary infection. The most common offending pathogens are Chlamydia, Salmonella, Shigella, Yersinia and Campylobacter. We report a unique case of a patient with tenosynovitis attributed to *Clostridium difficile* (C. difficile), and review of the literature.

**Methods.** We searched PubMed for "reactive arthritis" and "C. difficile" and found 53 cases. Two additional cases were excluded as they were published in French.

**Results.** An 18-year-old healthy male presented with nine days of abdominal pain and diarrhea, and two days of pain and swelling of bilateral fingers with an erythematous/ecnymctic rash over the second and third digits. Four weeks prior to symptom onset he received antibiotics for streptococcal pharyngitis. On presentation he had diffuse abdominal tenderness and edema of the PIP/DIP joints with tenderness throughout the phalangeal soft tissue, consistent with tenosynovitis. He had a leukocyte count of 33.0 thousand/μL and C-reactive protein of 12.0 mg/dL (normal < 1.0 mg/dL). *C. difficile* toxin PCR was positive, toxin EIA was negative. CT scan of the abdomen demonstrated mural thickening consistent with extensive severe colitis. He received 14 days of oral vancomycin, with complete symptom resolution, including the tenosynovitis. Our literature review revealed 22.6% (12/53) of cases had involvement of hands, although all also had involvement of other joints. Our patient's isolated tenosynovitis of bilateral hands is unique, and has only been reported once prior to our knowledge. Literature suggests treatment of the underlying C. difficile infection should result in rapid clinical improvement of tenosynovitis symptoms, as in our patient.

**Conclusion.** *C. difficile* continues to pose a significant threat to health and burden on the healthcare system. The association of reactive arthritis and *C. difficile* was first reported in 1976, with only 53 subsequent cases reported. Reactive arthritis classically presents as asymmetrical oligo- or polyarthritis involving lower extremities and large joints. Our case demonstrates isolated tenosynovitis of the hands may also be a possible presentation. Given the continued rise of *C. difficile*, it is imperative that this pathogen is considered in such cases.

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388. Spinal Implant Infections Treated with Debridement and Hardware Retention

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**Session:** 48. Infections of Joints

**Background.** Surgical site infections following spinal surgery affect 0.3 to 20% of patients. The longer the infection, the greater the chance of antibiotic treatment failure due to the establishment of mature microbial biofilm on the hardware, requiring its removal for infection eradication.

**Methods.** Retrospective cohort of patients with microbiologically confirmed SII following spinal surgery treated with debridement and retention. SII was defined as the presence of clinical signs of deep surgical site infection with 2 or more positive culture results of tissue surrounding the implant taken during surgical debridement; or from CT guided biopsy. Inclusion criteria: adults with a 4+ episode of microbiological confirmed SII diagnosed from 2008 to 2017 with >2 years of follow-up, treated with implant retention. Definitions Early-onset infection (EOI): infection <1 month following implant placement. Late-onset infection (LOI): between 30 days and 1 year after implant placement. Delayed onset infection (DOI): >1 year of implant placement. Statistical analysis made in Graph Pad Prism 5.0.

**Results.** We analyzed 19 patients with SII treated with hardware retention. Mean age was 54 (21–70) years, 63% were female. Comorbidities, clinical manifestations and motive for surgery are in Table 1 and Figure 2. Hardware material used was titanium 15.9% (N = 5) and steel 42.1%). In addition to the hardware,11 patients (57.9%) underwent bone grafting, 4 experienced treatment failure (4/11 = 36.4%); 2 patients had nonmetallic material inserted (carbon polymer), the 2 patients experienced failure. 16 patients (84.2%) had EOI, 2 (10.5%) LOI, 1 (5.3%) DOI. Failure requiring implant removal was observed in 26.3% (n = 5), 2 of the cases were EOI, 2 LOI and 1 DOI. Bacterial characteristics of patients are shown in Table 2. 47.4% of patients required more than one debridement (Figure 2). In the linear regression model, treatment failure was associated with bone grafting (P = 0.04) and the use of carbon polymer materials (P = 0.007).

**Conclusion.** Treatment of SII with debridement plus antimicrobials treatment is acceptable, with a rate failure of 26%. In LOI and DOI spinal implant retention is more prone to fail. Bone grafting and the presence of polymers seem to be associated with treatment failure of conservative strategies.

**Table 1. Comorbidities**

| Characteristics | Value | N (%) |
|-----------------|-------|-------|
| Diabetes        |       | 4 (21.1%) |
| Smoking         |       | 2 (10.5%) |
| Liver Diseases  |       | 0 |
| Steroid use     |       | 2 (10.5%) |
| Hypoalbuminemia |       | 2 (10.5%) |
| Immunosuppressive therapy | | 3 (15.8%) |
| Systemic malignancy | | 4 (21.1%) |
| Haemato logical malignancy | | 2 (10.5%) |
| Radiotherapy    |       | 1 (5.3%) |
| ASA score 1-2   |       | 11 (57.9%) |
| ASA score 3-4   |       | 8 (42.1%) |

**Table 2. Bacterial characteristics of patients with spinal implant infection included in the study (n = 19)**

| Characteristics | Value | N (%) |
|-----------------|-------|-------|
| Sensitive       |       | 68% |
| Weakly Sensitive|       | 26% |
| Resistant       |       | 6% |
| Enterococcus sp. | | 7 (37%) |
| Escherichia coli | | 5 (26%) |
| Staphylococcus aureus | | 1 (5%) |
| Staphylococcus multivarius | | 1 (5%) |
| Erysipelothrix rubra | | 1 (5%) |
| Entrobacter sp. | | 5 (26%) |
| MRCONS           |       | 1 (5%) |
| MRCONS + Peptostreptococcus | | 1 (5%) |
| MRCONS + Treponema phagedenis | | 1 (5%) |
| MRCONS + Entrobacter fastidiosus | | 1 (5%) |
| Late             |       | 1 (5%) |
| MSSA             |       | 2 (10%) |

**Figure 1.**

**Figure 2.**

**Disclosures.** All authors: No reported disclosures.