

Executive Summary

Publication	Acute periprosthetic joint infection due to <i>Fusobacterium nucleatum</i> in a non-immunocompromised patient. Failure using a Debridement, Antibiotics + Implant retention approach. Corona PS, Lung M, Rodriguez-Pardo D, Pigrau C, Soldado F, Amat C, Carrera L. Anaerobe 2018 Feb;49:116-120 https://doi.org/10.1016/j.anaerobe.2017.12.010 (free full text)
Study	Case report
Implant	Modular knee arthrodesis KAM-TITAN (PETER BREHM GmbH)
Patients	A 75-year-old obese, non-immunocompromised patient (female) presented an acute periprosthetic knee infection. 19 days prior to presentation, another hospital performed the left TKA for osteoarthritis. The patient also suffered from moderate-to-severe periodontitis.
Follow-up	Final outpatient control at a follow-up of 18 months after the second surgery procedure
Methods	The surgeons scheduled the patient for a debridement and implant retention procedure (DAIR), according to the institutions' protocol for acute periprosthetic joint infection. It was not possible to change the polyethylene liner, due to lack of a suitable replacement on hand. Instead, the existing polyethylene liner was removed, cleaned with antiseptic serum solution and reinserted at the end of the surgery. The culture of the aspirate and intraoperative biopsies were positive for <i>Fusobacterium nucleatum</i> in pure culture. Bacterial identification was performed using MALDI-TOF mass spectrometry. The surgeons decided to complete a 3-month course of antibiotic therapy. 4 weeks later, with the patient still under antibiotic treatment, the patient presented with a sinus tract on the lateral aspect of the knee. After establishing a diagnosis of infection relapse and DAIR failure, the patient scheduled for a 2-stage exchange arthroplasty. During the surgical procedure, a total necrosis of the patellar tendon was observed. After radical debridement, total exeresis of the patellar tendon and implant removal, the surgeons employed an antibiotic-impregnated cement spacer block. Again, intraoperative biopsies were positive for <i>F. nucleatum</i>. After a favorable clinical course and 15 weeks after the first stage, the uncemented modular knee arthrodesis KAM-TITAN was performed. Antibiotic-loaded cement was used to fill the void between the tibial and femoral edges. During femoral stem introduction, an intraoperative crack

	was observed and resolved using 2 wire cerclages. The intraoperative biopsies were negative.
Results	At a follow-up of 18 months after second surgery, the patient performed well and with no local signs of infection recurrence.
Key Points	This is the first reported case of an aggressive acute postoperative periprosthetic knee joint infection due to <i>F. nucleatum</i> in a non-immunocompromised patient. According to the authors, the lack of reported cases of acute periprosthetic joint infection by <i>F. nucleatum</i> made the decision-making more difficult. There is no clinical information about this bacterium's capacity for producing acute periprosthetic joint infection, or for developing clinically relevant biofilms over implant surfaces in orthopedics. <i>F. nucleatum</i> is one of the most abundant species in the oral cavity and plays an important role in the development of complex dental plaque biofilms, periodontal disease and infections associated with dental implants. The authors suggest that elderly patients scheduled for joint arthroplasty should be examined for the presence of periodontal disease. The modular knee arthrodesis KAM-TITAN proved to be clinically efficient in the short-term follow-up.
Abbreviations	TKA - total knee arthroplasty, DAIR - debridement, antibiotics, implant retention, MALDI-TOF – matrix assisted laser desorption time of flight