

Cutibacterium Acnes

An Insidious Threat to Healing

BACKGROUND

- Anaerobic gram-positive bacteria that reside in the skin's hair follicles and sebaceous glands
- Especially found in the face, shoulders, chest, and back1-3
- Forms mature biofilms on the surface of prosthetic materials within 96 hours²



AFFECTED ANATOMY

- Most frequent pathogen in total shoulder arthroplasty (TSA) infections^{1,4,5}
- Also affects prosthetic implants in the spine, elbow, hand, knee, and hip^{1,2}



CLINICAL PRESENTATION

- Does not typically elicit host inflammatory responses^{1,6-8}
- Unexplained pain, stiffness, and joint dysfunction may occur after an initially positive surgical outcome^{1,2,4,5,8}
- May not present for 3+ years postoperatively1



DIAGNOSIS

- Difficult, given absence of local inflammatory signs⁶⁻⁸
- Bacteriological testing requires high-quality samples (3-5 cultures) and prolonged culture time (10-15 days)1,2,6-8

TREATMENT

- Outcomes of implant-associated infections secondary to Cacnes are generally poor
- No current treatment standards or antibiotic regimens²
- Over half of C acnes cultures now carry resistance to more than one antibiotic1



70%

skin preparation^{5,9}

DESPITE standard chlorhexidine

of C acnes persists in skin8

JumpStart[®] ANTIMICROBIAL WOUND DRESSING

Reduce the Risk of C acnes Infection

POWERED BY V.DOX™ TECHNOLOGY

100% reduction of C acnes within 24 hours of exposure to JumpStart dressing with V.Dox technology¹¹

50%-60%

Rate of C acnes infection following revision shoulder surgery^{1,5,8}

(subacute and chronic infections)

Maximum average Medicare payment for shoulder joint revision10

(2020 rate, MS-DRG 957)

1. Elston MJ, et al. Cutibacterium acnes (formerly Proprionibacterium acnes) and shoulder surgery. Hawaii J Health Soc Welf. 2019;78(11 Suppl 2):3-5. 2. Lin ZX, et al. Cutibacterium acnes infection in orthopedics: microbiology, clinical findings, diagnostic strategies, and management. Orthopedics 2020;43(1):52-61. **3.** Khalii JG, et al. *Cutibacterium acnes* in spine pathology: pathophysiology, diagnosis, and management. J *Am Acad Orthop Surg.* 2019;27(14):e633-e640. **4.** Both A, et al. Growth of *Cutibacterium acnes* is common on osteosynthesis material of the shoulder in patients without signs of infection. Acta Orthop. 2018;89(5):580-584. **5.** Chuang M, et al. The incidence of Propionibacterium acnes in shoulder arthroscopy. Arthroscopy. 2015;31(9):1702-1707. **6.** Boistenoult P. Cutibacterium acnes prosthetic joint infection: diagnosis and treatment. Orthop Traumatol Surg Res. 2018;104(15):S19-S24. 7. Saltzman MD. Editorial commentary: Already "stealth" organism Propionibacterium acres goes covert by changing its name to Cutibacterium acnes: shoulder bacterial contamination. Arthroscopy. 2019;35(6):1758-1759. 8. Pottinger P, et al. Prognostic factors for bacterial cultures positive for Propionibacterium acnes and other organisms in a large series of revision shoulder arthroplasties performed for stiffness, pain, or loosening. J Bone Joint Surg Am. 2012;94(22):2075-2083. 9. Lee MJ, et al. Propionibacterium persists in the skin despite standard surgical preparation. J Bone Joint Surg Am. 2014;96(17):1447-1450. 10. Coding and reimbursement guide for shoulder arthroplasty—2020. Integra Lifesciences Corp; 2020. 11. Report no. K6D1096. Pacific BioLabs.

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