

# A microcurrent dressing reduces *C. acnes* colonization in patients undergoing shoulder arthroplasty or arthroscopy: a prospective case series

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## Synopsis

When applied preoperatively at the planned surgical incision site, microcurrent dressing may contribute to a reduction in perioperative infections, including prosthetic joint infection (PJI), and may be effective in reducing the incidence of surgical site *Cutibacterium acnes* (*C. acnes*) colonization.

## Background

- While the rate of PJI after primary shoulder arthroplasty is approximately 1% to 4% in the literature, it can increase to as high as 10% in young, male patients after reverse shoulder arthroplasty.
- C. acnes* infections of the shoulder are a significant concern in shoulder arthroplasty. *C. acnes* is particularly challenging to diagnose and eradicate and is a substantial cause of morbidity.
- The use of a microcurrent dressing as a prophylactic preoperative dressing to alter skin flora and thereby decrease the risk of PJI has not yet been investigated.

## Study Objective

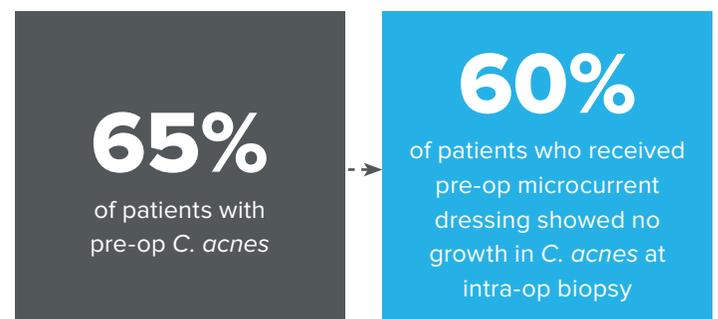
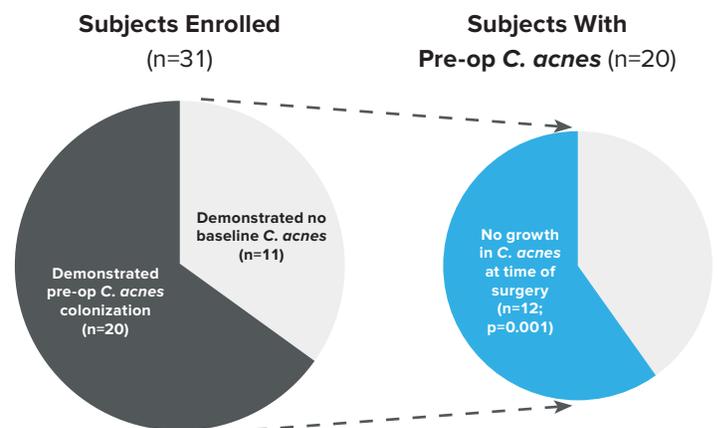
Evaluate the efficacy of a microcurrent dressing in reducing *C. acnes* skin colonization and the risk of PJI of the shoulder.

## Study Design and Methods

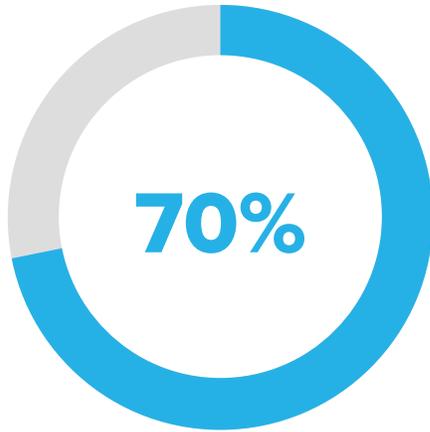
Design	Patients	Procedure	Treatment
Prospective case study	20 patients with preoperative <i>C. acnes</i> colonization	Elective shoulder arthroplasty or arthroscopic shoulder surgery	<p><b>2 days prior to surgery:</b></p> <ul style="list-style-type: none"> <li>Skin culture swab taken, dressing applied over planned surgical site</li> </ul> <p><b>Immediately prior to surgery:</b></p> <ul style="list-style-type: none"> <li>Dressing removed, repeat swab taken</li> </ul> <p><b>Upon initiation of surgery:</b></p> <ul style="list-style-type: none"> <li>Full-thickness biopsy taken for culturing</li> </ul>

## Results

Preoperative application of a microcurrent dressing resulted in significantly diminished *C. acnes* skin burden at the time of surgery in patients undergoing elective shoulder arthroplasty or arthroscopic shoulder surgery.



Did You Know?  
Impact of *C. Acnes*



of *C. acnes* persist in skin despite standard chlorhexidine skin preparation<sup>1-3</sup>

>50%

of *C. acnes* cultures carry resistance to more than one antibiotic<sup>4</sup>

50%-60%

rate of *C. acnes* infection following revision of shoulder surgery<sup>2-4</sup>

\$47,696

maximum average Medicare payment for shoulder joint revision<sup>5</sup>

References

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