

Efficacy of topical benzoyl peroxide on the reduction of propionibacterium acnes during shoulder surgery

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A new paper to be published in *The Journal of Shoulder and Elbow Surgery* evaluates the effect that topical benzoyl peroxide (BPO), with chlorhexidine skin preparation, has on the presence of *Propionibacterium acnes* cultured at the time of shoulder surgery. The authors hypothesized that adding topical BPO, the active ingredient in Clearasil, to the pre-operative skin preparation would reduce the number of positive *P. acnes* cultures identified during surgery.

P. acnes infection is a significant problem after shoulder surgery. Residual *P. acnes* is found on the skin up to 29% of the time immediately after surgical skin preparation and in 70% of dermal biopsy specimens. These residual bacteria may be a source for infection. Identifying more ideal skin preparation may help reduce the risk of infection.

Fifty patients undergoing first-time (arthroscopic) shoulder surgery were treated with topical 5% BPO cream 48 hours before surgery. After skin preparation, 13 samples per subject were obtained. These cultures were held for 14 days and 650 culture specimens were obtained. The skin was positive at the initiation of surgery in 6% of the cases and tissue samples were positive in 6%. The skin was positive in 10% at the end of surgery. None of these rates of positive culture were different from the 4% rate observed with a control swab.

Application of BPO is an effective way to reduce P. acnes on skin at the beginning and, importantly, at the end of a surgical procedure. This may result in a lower risk for postoperative infection.

"The setbacks and costs associated with infection after [shoulder surgery](#) are significant," said senior author Paul M. Sethi, Clinical Instructor of Orthopedic Surgery Yale University School of Medicine. "Our first study identified the patients' skin as the source of bacteria that may cause infection and highlighted the limitations of current skin surgical preparation. Our team used established dermatologic principles to improve the way we clean the skin. Dermatologists have used BPO to treat P. acnes on our face for 50 years. We chose to study this same medicine on the shoulder and the findings are very exciting. Data demonstrates that we can significantly reduce potentially dangerous bacteria after skin treatment with BPO. By reducing these bacteria, we hope to reduce the risk for shoulder [infection](#) following surgery."

More information: "Efficacy of topical benzoyl peroxide on the reduction of Propionibacterium acnes during shoulder surgery." DOI: [dx.doi.org/10.1016/j.jse.2015.04.003](https://doi.org/10.1016/j.jse.2015.04.003)

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