Wound Complications in Joint Arthroplasty: Comparing Traditional and Modern Methods of Skin Closure

Ronak M. Patel, MD
Max Cayo, BS
Arpan Patel, BS
Marie Albarillo, PA-C
Lalit Puri, MD, MBA

Abstract

Various methods of skin closure exist in joint replacement surgery. While subcuticular skin closure techniques offer an aesthetic advantage to conventional skin stapling, no measurable differences have been reported. Furthermore, newer barbed sutures, such as the V-loc absorbable suture, theoretically distribute tension evenly through the wound and help decrease knot-related complications. The purpose of this study was to evaluate whether wound complication rates are (1) lower in V-loc closure cases as theoretically suggested and (2) lower for subcuticular closure versus staples.

A retrospective chart review was conducted of 278 consecutive primary joint reconstruction cases performed by a single surgeon. The average age at the time of surgery was 63 years (range 18-92 years). There were 106 males and 161 females in the cohort. Average BMI of the cohort was 33.7 (kg/m²) (Range 25-51 kg/m²). Skin was closed via staple gun or subcuticular stitch (3-0 Biosyn vs V-Loc).

In 181 cases closed with staples there were 7 wound complications (7/181, 3.9%). In 51 cases closed via a subcuticular Biosyn suture there were 4 wound complications (4/51, 7.8%). Six wound complications occurred in cases closed with a V-loc suture (6/46, 13.0%). The staple group had a lower rate of complications when compared to the suture group as a whole (p = 0.033) and when compared specifically to the V-loc suture group (p = 0.017).

Aesthetics and efficiency often are the driving forces of innovation. Based on our clinical experience, we promote consideration of wound and infectious complications when choosing a method of skin closure in joint reconstruction procedures.