Risk of Wound Infection Is Greater After Skin Closure with [Metal] Staples Than with Sutures in Orthopaedic Surgery

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Main results: 6 studies met the inclusion criteria. The methodological quality varied greatly across studies. 3 studies were randomized controlled trials. In total, 683 patients were included. 57 men and 117 women were in the [metal] staple group and 60 men and 131 women were in the suture group (4 studies). Mean age was 82 years in the [metal] staple group and 80 years in the suture group (3 studies). Follow-up ranged from 10 to 364 days (mean 95 days). The types of surgery were hip (3 studies), hip and knee (2 studies), and upper-limb and lower limb trauma (1 study).Meta-analysis of all 6 studies showed the risk for wound infection was greater with [metal] staples than with sutures (Table). The groups did not differ for dehiscence, inflammation, discharge, necrosis, or allergic reaction (Table). Results for wound infection in the 5 studies of hip surgery were similar to those of the overall metaanalysis (relative risk [RR]54.79; 95% confidence interval, 1.24 to 18.47). In the 2 studies of knee surgery, the results were similar in direction for wound infection, but not significantly different (RR 3.29, CI 0.54 to 20.04).

Conclusion: On the basis of evidence with numerous methodological limitations, patients having orthopaedic surgery are at greater risk for wound infection after skin closure with [metal] staples than they are after skin closure with sutures.

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