

+ Evidence in focus

Publication summary: Helito CP, et al. *BMC Musculoskelet Disord* (2020)*

Smith+Nephew

Use of PICO[®] Single Use Negative Pressure Wound Therapy System (sNPWT) significantly reduced the incidence of surgical site complications (SSCs) and need for surgical reintervention compared with conventional dressings after total knee arthroplasty (TKA)

+ Plus points

Compared with conventional dressings, use of PICO sNPWT resulted in a:

↓ **38%**
relative reduction
in SSCs ($p=0.001$), including
reductions in skin necrosis and
wound dehiscence (both $p<0.05$)

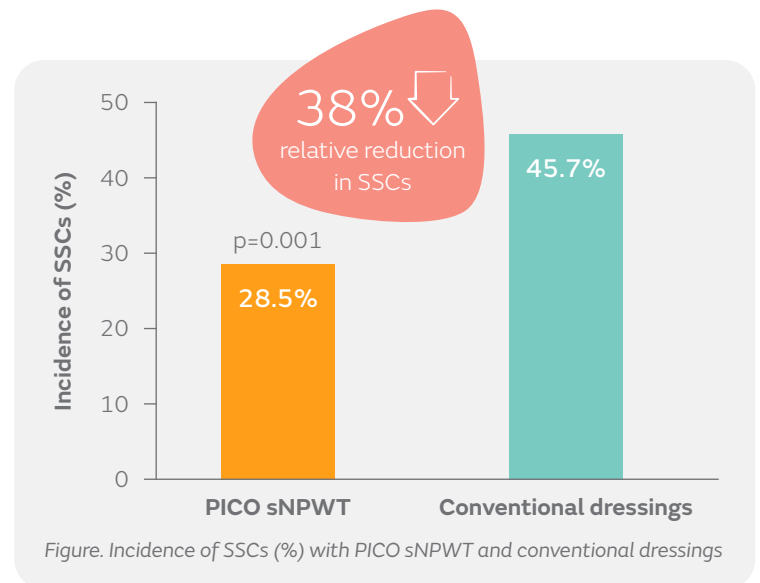

Significant reduction
in surgical reintervention
(8.5 vs 2.0%; $p=0.001$)

Overview

- A consecutive, nonrandomised case series of patients with primary or secondary knee osteoarthritis who underwent elective unilateral TKA
- Patients receiving PICO sNPWT ($n=97$) for 7 days were compared with historical controls receiving conventional dressings ($n=199$)
- Wounds were evaluated weekly for 6 weeks, then at 3, 6 and 12 months; wounds with SSCs were evaluated weekly until resolution
- More than half of all patients (51.7%) had ≥ 1 risk factor for SSCs (eg, diabetes, obesity, smokers)

Results

- Compared with conventional dressings, use of PICO sNPWT significantly reduced the incidence of SSCs (Figure), including:
 - Skin necrosis (8.5 vs 2.1%, $p=0.04$)
 - Wound dehiscence (10.1 vs 3.1%, $p=0.03$)
 - Hyperaemia (40.2 vs 14.7%, $p=0.01$)
- Need for surgical reintervention was significantly reduced with PICO sNPWT versus conventional dressings (8.5 vs 2.0%, $p=0.001$)
- Use of PICO sNPWT reduced the odds of SSCs occurring by 64% (OR=0.36; 95% CI 0.206–0.629)



Conclusions

Use of PICO sNPWT helped to significantly reduce SSCs, including necrosis and dehiscence, and the need for surgical reintervention compared with conventional dressings in patients undergoing TKA.

Citation

*Helito CP, Sobrado MF, Giglio PN, et al. The use of negative-pressure wound therapy after total knee arthroplasty is effective for reducing complications and the need for reintervention. *BMC Musculoskelet Disord*. 2020;21(1):490.

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