WoundEvidence
Single paper review
Galiano RD, *et al.* (2018)

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PICO◊ helped to prevent post mammaplasty dehiscence compared with standard care

Application of PICO single use NPWT also significantly reduced the incidence of post-operative wound complications compared with standard care

Study design

- A prospective, within-patient, randomised controlled, open-label, multicenter study assessing prevalence and type of healing complications in patients having undergone elective bilateral reduction mammaplasty
- Two hundred patients (mean age 35.7 years) of generally good health were recruited and randomized within-patient (i.e. to the right or left breast) to be treated with either negative pressure wound therapy (NPWT) or standard dressings and followed for up to 90 days post-operatively

Key results

- Wound healing complications
  - PICO single use NPWT significantly reduced wound healing complications within 21 days post-operatively compared to standard care (p=0.004)
  - Results were consistent after sensitivity analysis (39.7% with PICO vs 44.7% with standard care; p=0.033)

- Dehiscence
  - Incidence of wound dehiscence within 21 days of surgery was significantly reduced by application of PICO single use NPWT compared to standard care (p<0.001, 95% CI: 5.1;15.9)
  - NPWT appeared to have the greatest effect on reducing dehiscence in the higher BMI categories

Frequency of wound complications and dehiscence within 21 days in patients treated with NPWT and standard care
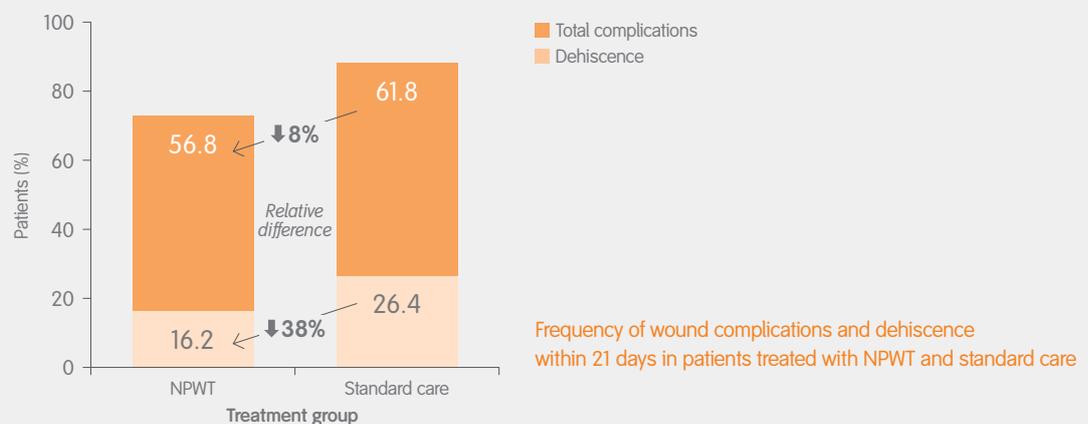
Conclusions

Application of NPWT as a prophylactic on closed incision mammaplasty surgical wounds reduced wound healing complications compared with standard care. This outcome is suggested to be augmented in patients with BMI >25kg/m^2 or tissue resection weight above 500g.

Considerations

- In this open-label study, design assumptions may have led to over estimation of delayed healing, and therefore total wound healing complications, at day 7; however, the treatment effect was consistent even when the delayed healing window was expanded to day 10 (sensitivity analysis)
- Comparing treatments on the same patient avoids inter-cohort variability and may provide more robust results

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