

Background

Restoration of breast sensation has become an important goal after mastectomy including gender affirming mastectomy with free nipple grafting (FNG).

Methods

We describe Targeted NAC Reinnervation (TNR), a novel technique to reinnervate the FNG that maximizes donor axon count by preserving the 3rd to 5th lateral cutaneous nerves for anastomosis (**Fig. 1 A, B, C**) and increases the reinnervation zone/ decreases the likelihood of hypersensitivity by splitting the distal graft or donor nerve into fascicles (**Fig. 3**). Nerves were either directly coapted or a nerve graft (maximum length 3.5cm) was used for reconstruction (**Fig. 2**). 22 patients were prospectively enrolled in this study. Semmes-Weinstein filament testing [2.83 (best sensation) to 6.65 (no sensation)] was performed mid- nipple and in all quadrants of the NAC preoperatively, at 4 weeks, as well as at 3 months postoperatively. Subjects were asked to answer questionnaires regarding sensation at the same timepoints.

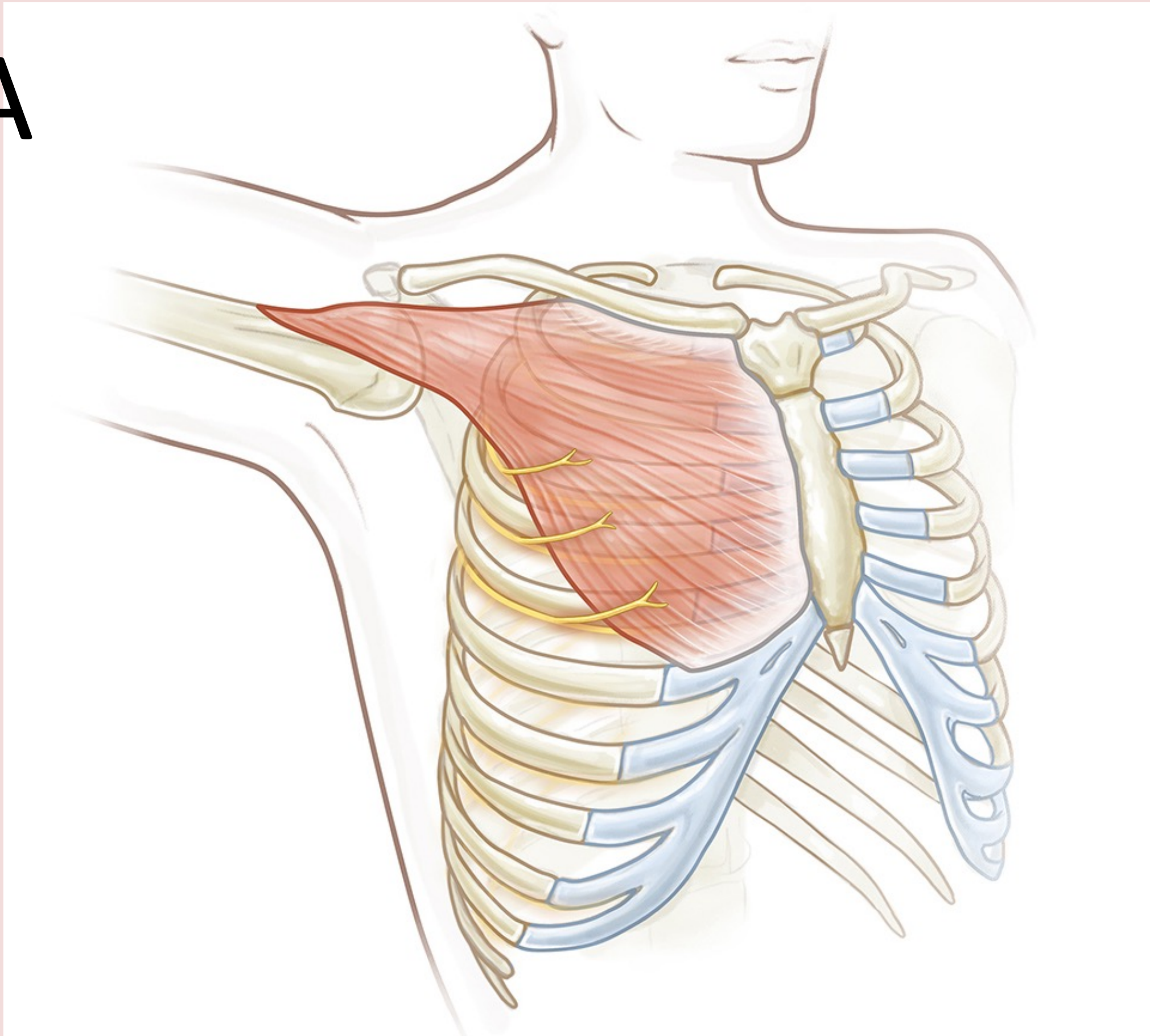
Results

Preoperatively, 91% patients were moderately to very concerned about one or more aspects of sensation. The mean preoperative sensation was 3.6 mid nipple, and 3.9 in all NAC quadrants. At 4 weeks postoperatively, average sensation was 5.12 mid nipple and 5.2 at the NAC. At three months postoperatively, sensation was 3.7 mid nipple and 3.8 at the NAC. 40% of patients reported return of erogenous sensation at three months.

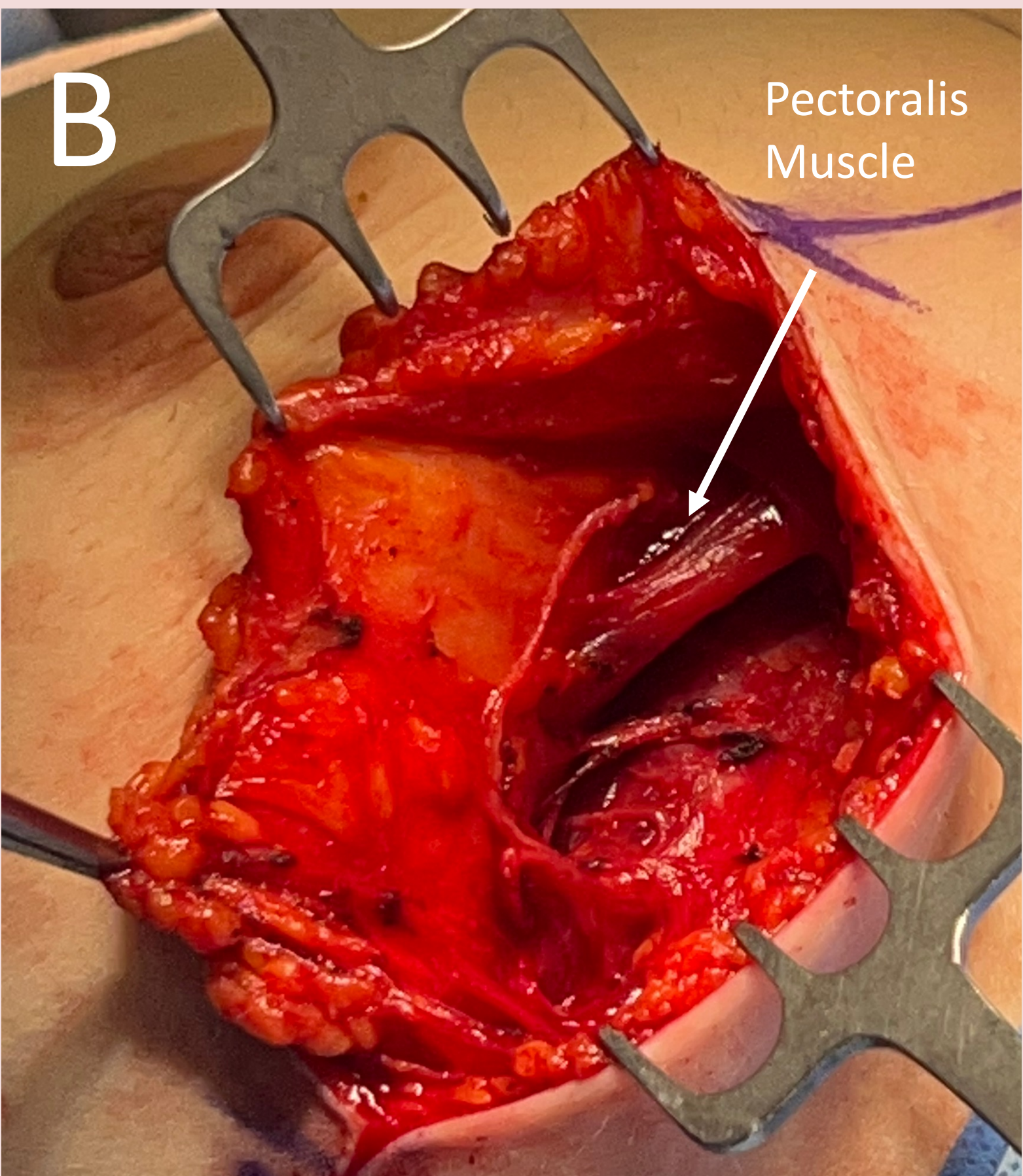
Conclusion

Chest reinnervation is technically feasible in patients undergoing double incision gender mastectomy with FNG. Early results show improving sensation at three months. Longer follow up and a control group is needed to validate these findings.

A



B



C

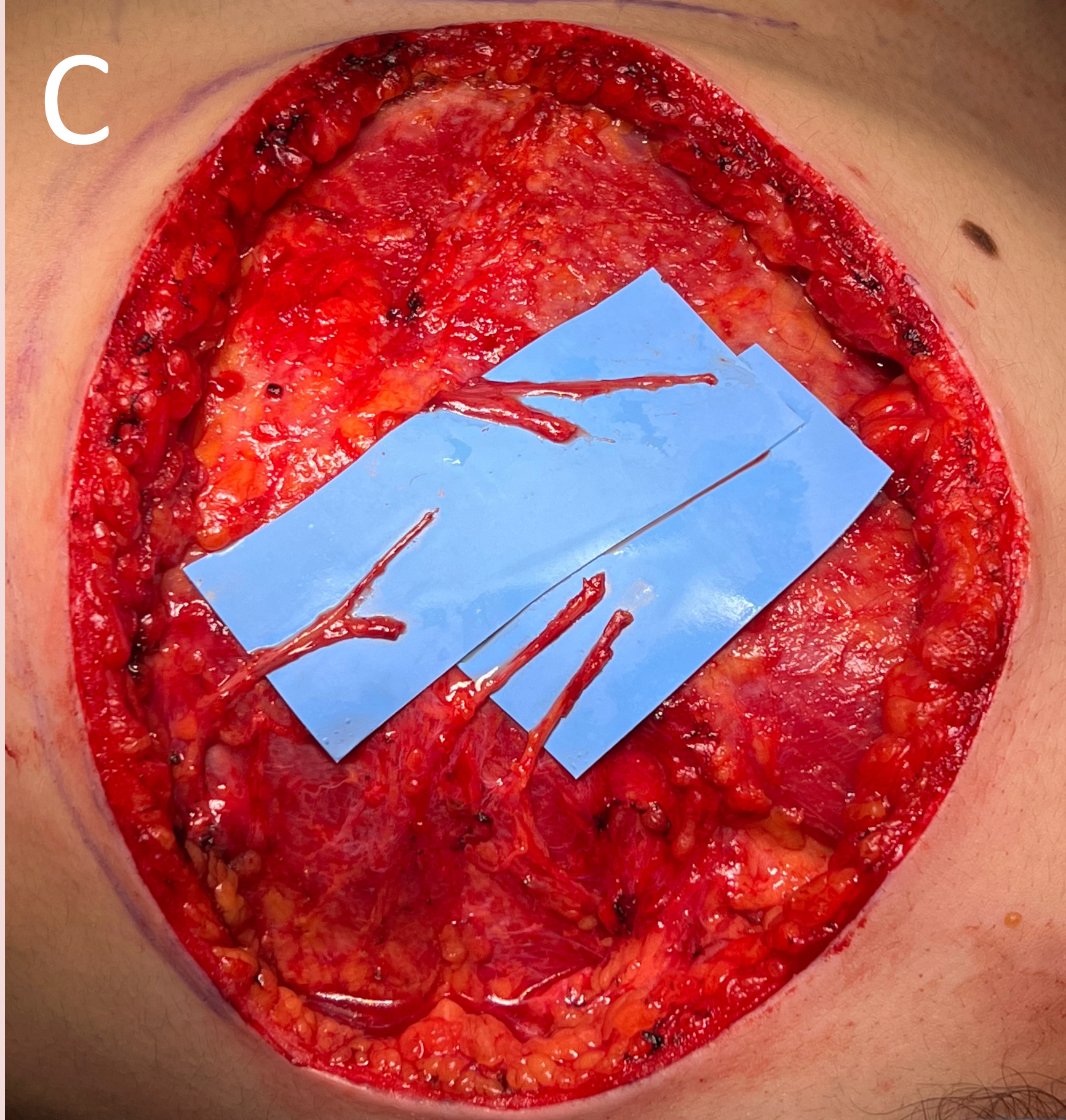


Fig. 1 (A, B) The 3rd to 5th intercostal (IC) nerve branches exit lateral to the pectoralis muscle. **(C)** During TNR, the 3rd to 5th IC are isolated

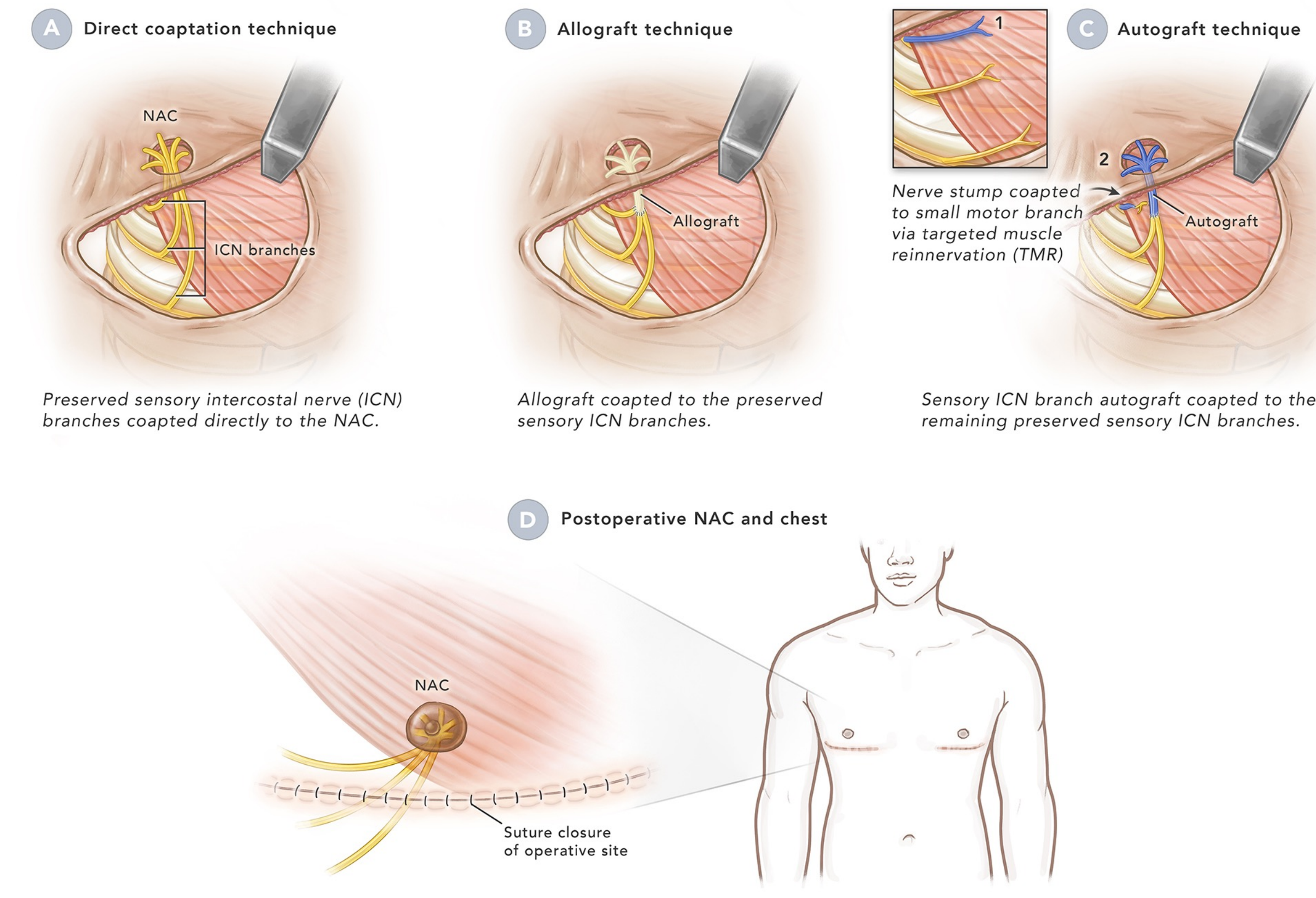


Fig. 2 TNR coaptation technique

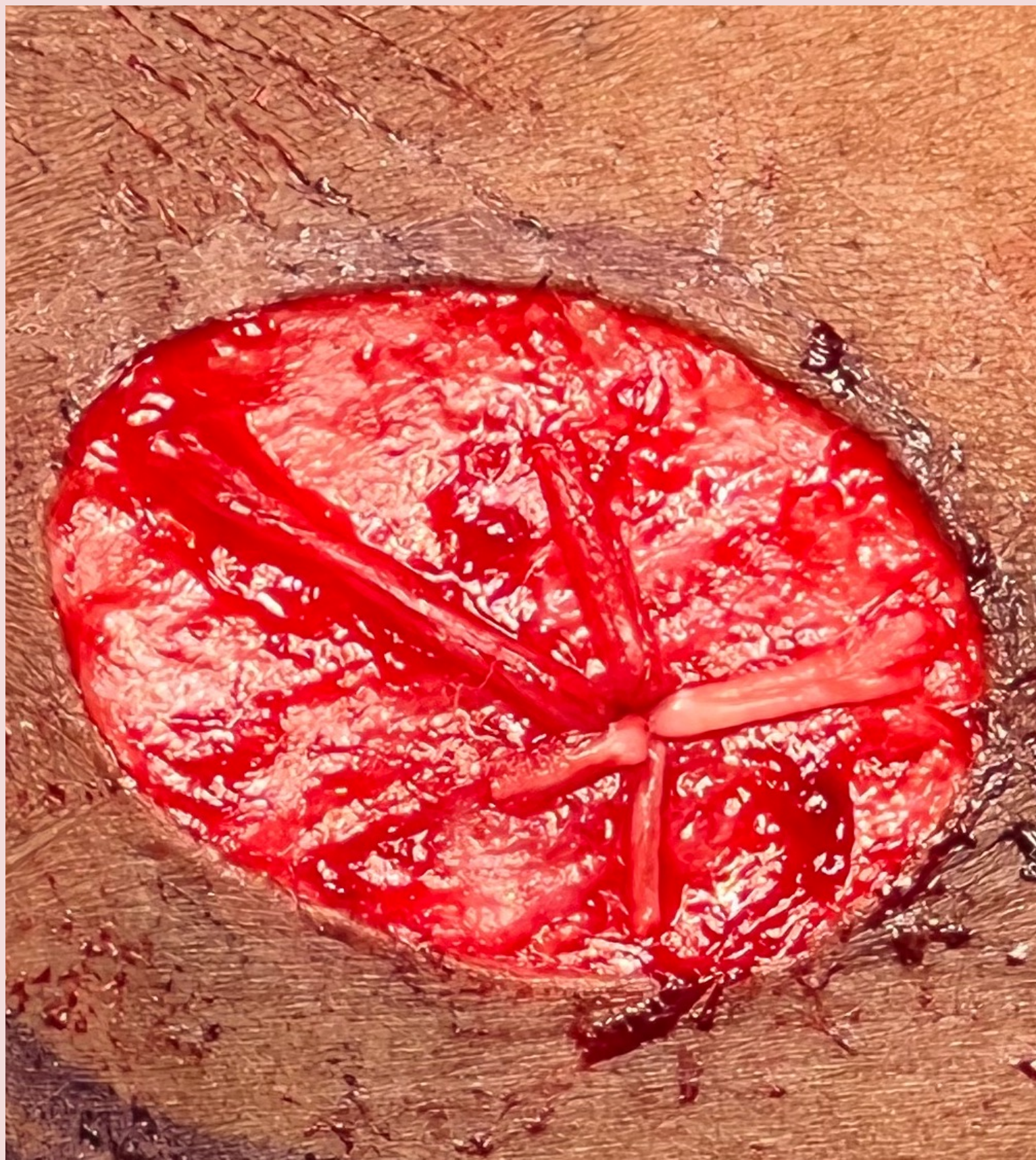


Fig. 3 The nerve end is split into fascicles to avoid hypersensitivity and increase the innervation zone