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LETTER TO THE EDITOR

Opinions on Treatment of Breast Animation Deformity with Selective Nerve Ablation

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Dear editor,

We have read with great interest the article entitled ''Treatment of Breast Animation Deformity in Implant-Based Reconstruction with Selective Nerve Ablation'' by Dustin L. Eck et al [1] in *Aesthetic Plastic Surgery*. In this article, the authors presented their experience on treating animation deformity following breast reconstruction with subpectoral implants. A complete correction of animation deformities had been achieved with selective pectoral nerve ablation without obvious muscle atrophy. Inspired by the authors, we would like to express our considerations on this innovative technique.

Firstly, though no obvious muscle atrophy was observed with subjective evaluation, given that repeated fat graftings were performed, the volume preservation of the pectoral major after nerve ablation wasn't ascertained and should be assessed with computed tomography or ultrasound tests. Furthermore, except the evaluation of muscle volume, objective assessment of the dysfunction of the upper limb like Dysfunction of Arm, Shoulder and Hand (DASH) questionnaire is needed because the pectoral major is crucial to some normal shoulder movements like adduction and medial rotation.

Secondly, what kind and how much nerve resection is necessary to prevent postoperative muscle twitching should be deliberated. In this study, only a bipolar electrocautery was used and an incomplete denervation of the muscle was performed. Some studies concerning denervation of the latissimus dorsi muscle flap, which is often used to provide adequate tissue coverage for implants in breast reconstruction like the pectoral major, indicated that, even with permanent ablation of the thoracodorsal nerve in the distal branches, patients still experienced a high rate of recurrence of muscular contraction in long-term follow-up and high potentials were recorded at the breast site in the electromyogram test [2]. Those can be attributed to incomplete nerve division and spontaneous reinnervation due to the sprouting of the severed proximal nerve stump following the vascular pedicle bed or regeneration from adjacent nerves. Permanent and sufficient denervation of the latissimus dorsi muscle was achieved when the resection length of the thoracodorsal nerve reached 4 cm or more [3]. It is reasonable to suspect that some similar results may occur in selective nerve ablation of the pectoral major and main nerve trunk section may be needed to achieve exact and complete correction of the animation deformity.

Finally, although a high rate of animation deformity in the subpectoral technique has been demonstrated in the previous studies, from our experience, obvious animation deformity rarely occurs. There may be several factors ascribed to this. Firstly, the animation of the pectoral major doesn't equate to the animation deformity resulting from the implant dislocation. Secondly, some attachments between the pectoral major and rib are bound to be severed

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during the separation of the implant pocket even in the total subpectoral technique which lessens the muscle contraction. Besides, with serious adhesion between implant capsule and pectoral major, animation deformity is less inclined to happen.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest to disclose.

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