Neuropraxia In tissue expansion - should not delay reconstructive process

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Citation

Abstract

INTRODUCTION

Tissue expansion has come a long way. Since Neumann first used the principles of controlled tissue expansion in 1957 and Radovan’s description of a tissue expander in breast reconstruction in 1982. Tissue expansion has numerous advantages.

- it provides skin with a near-perfect match in color and texture, minimal donor site morbidity and scarring occur (Austad, 1982; Pasyk, 1982).4
- It has superior sensation e.g. in breast reconstruction. 2, 3
- Expanded flaps are more resistant to bacterial invasion than random cutaneous flaps (Barker, 1987).5
- Retains adnexal characteristics the hair-bearing flaps designed in the treatment of male pattern baldness.6, 7, 8

Though safe and effective tissue expansion has its own complications we highlight a case of neuropraxia of ant cutaneous nerve of thigh as a complication of tissue expansion and propose a management plan which should not delay the reconstructive process.

CASE REPORT

In August 2000 18 yr old girl was involved in a RTA. She sustained multiple injuries including bilateral femoral fractures and large soft tissue defects to right and left thigh and buttocks particularly on the left hand side.

She had initially had internal fixation of fractures defunctioning colostomy and debridement and skin graft. In October 2001 cable graft was done using sural nerve bilaterally (20 cm) and closure of colostomy in Jan 2002. Since 2005 she has had serial scar revisions and tissue expansion for reconstruction.

In June 2006 she had tissue expanders sited in left upper thigh anteriorly inamed 1000 cm3 and lower thigh posteriorly inamed 800cm3 in late September 2006 she had 775 mls in ant thigh and 428 mls in post thigh . She developed numbness of ant cutaneous nerve of thigh since expansion, skin was viable and 30 ml. saline was removed from ant expander.

In October she had removal of expanders and flap rotation and re-sitting of tissue expander for further surgery.

The nerve recovered fully in Feb 2007 and further expansion and flap advancement has been planned.

Figure 1
DISCUSSION

Tissue expansion is a widely used and a well researched topic in field of reconstructive surgery. Antonyshyn, Austad, Youm, and Casonova, have studied in detail their cohorts and reported the possible complications of the technique.

Tissue expanders are known to be related with complications of Transient pain, Infection, Capsule formation, Hematoma, Intractable pain, Striae Valve exposure, implant exposure, and Bone resorption.

Avoidance of complications of tissue expansion requires careful outpatient observation and consistent follow up.

No other published report has discussed treatment modality and time delay of neuropraxia in tissue expansion.

Neuropraxia though a complication of tissue expander can be treated with deflation and rest to the nerve and is totally reversible. If overlooked there is a possibility of ischemic nerve damage and permanent nerve injury.

Once the pressure is relieved the reconstruction process can be resumed with due care taken not to over stretch the tissue. The nerve recovery in our case was not hampered by the flap repositioning.

Unlike bone resorption, implant extrusion, infection and striae formation which delay the reconstructive process, the expansion related neuropraxia should not be a reason to delay reconstructive procedure as flap advancement does not appear to alter nerve recovery.

References
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