Staged Abdominal Wall Reconstruction with Use of Internal Tissue Expansion

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Goal/Purpose: Since 1990, component separation procedure has become the mainstay of abdominal wall reconstruction. Despite its' success, the procedure does have significant complications, which has lead to various modifications over the last two decades. We present an alternative method of abdominal wall reconstruction via the use of tissue expansion and staged repair. This study reports outcomes of a single surgeon experience of ten consecutive patients undergoing tissue expander reconstruction.

Techniques/Methods: A retrospective chart review was performed of all patients undergoing reconstruction. All patients underwent the initial procedure with placement of rectangular tissue expanders between the internal and external oblique muscles. This was followed by in office expansion until desired expansion was achieved. Second stage surgery was then performed with removal of expanders, exploratory laparotomy, and primary fascial closure with acellular dermal matrix underlay and various surgical scaffold overlay reinforcement.

Results: A total of nine patients with recurrent ventral hernia underwent tissue expander based abdominal wall reconstruction. Mean patient age was 56.9 years at time of hernia repair (range 47 to 60 years of age). Body mass index ranged from 25.3 to 35.3 (mean 29.3). Hernias ranged in width from 4.3 to 15 cm (mean 10.5 cm). Mean time from placement of expanders to definitive repair was 2.8 months. Patients were followed anywhere between 1 and 30 months (average 8.3). Complications included two episodes of tissue expander rupture/failure. There were two cases of seromas. One patient developed bilateral pulmonary emboli and was therapeutically anticoagulated. There were no incidents of delayed wound healing. There has been one episode of recurrence, occurring in a noncompliant patient who did not complete the expansion process. All patients have been able to resume normal activities without any restrictions.

Conclusion: Patients with recurrent ventral hernias present a complex problem. A variety of techniques have evolved to reconstruct the abdominal wall. Through the use of abdominal tissue expanders, large ventral hernias are capable of being repaired without violation of the external oblique fascia and musculature. This results in dynamic abdominal wall reconstruction and a low complication rate. Repairs have proven successful up to 2.4 years with no deficits.

Disclosure:
None of the authors has financial interest in any of the products included in this study.