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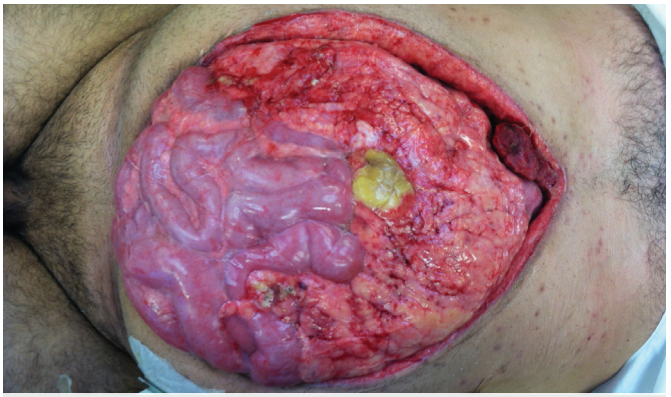
The patient is a 56 year old male who presented to an outside hospital with acute onset of epigastric discomfort. He developed severe acute pancreatitis and was explored for presumed abdominal compartment syndrome. His abdomen was left open, and he was re-explored bi-weekly for two weeks. During one of the re-explorations he had an injury to the left colon necessitating an end sigmoid colostomy. He was transferred to our institution on postoperative day 15 with a 32cm wide, open abdominal wall defect (Figure 1). He was trached, hemodynamically stable, and had an albumin of 1.6. An abdominal CT scan was performed which showed a pancreatic collection with no signs of infection and a wide abdominal wall defect (Figure 2). On exam the patient had a fixed noncompliant abdominal wall, and given his poor nutritional state, a split thickness skin graft was not performed.

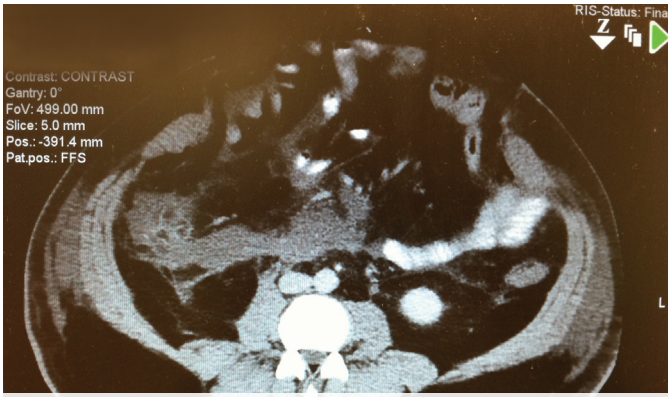
In order to achieve soft tissue coverage of the defect a combination approach of Botulinum Toxin injection and DermaClose® RC application was performed. Under ultrasound guidance, 300 IU of BOTOX® was diluted with 150cc of normal saline, and injected into each lateral abdominal wall muscle group. A total of 8.3cc of the solution was injected into each muscle layer at three points in the lateral abdominal wall, as described by Zielinski et al from the Mayo Clinic MN. (1) (Figure 3 and 4) The abdominal viscera were covered with the AbThera™ open abdomen NPWT device and the DermaClose continuous external tissue expanders were applied as demonstrated in Figure 5 and 6. After initial application the defect measured 16 cm in width. The patient returned to the operating room for an abdominal washout and reapplication of the device on day 2 (Figure 7). After 5 days, another CT scan was performed which revealed fascial expansion (Figure 8). On postoperative day 5, the patient had primary soft tissue coverage of the abdominal viscera with full thickness retention sutures (Figure 9). The DermaClose device was reapplied as a dynamic bolster at the time of

Figure 1



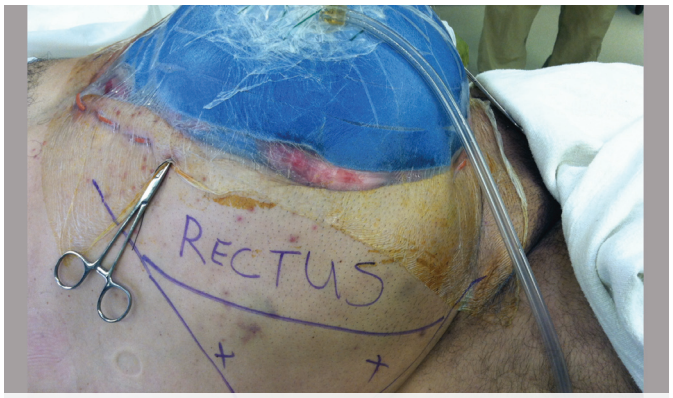
Patients abdominal wall defect upon presentation: 32cm wide

Figure 2



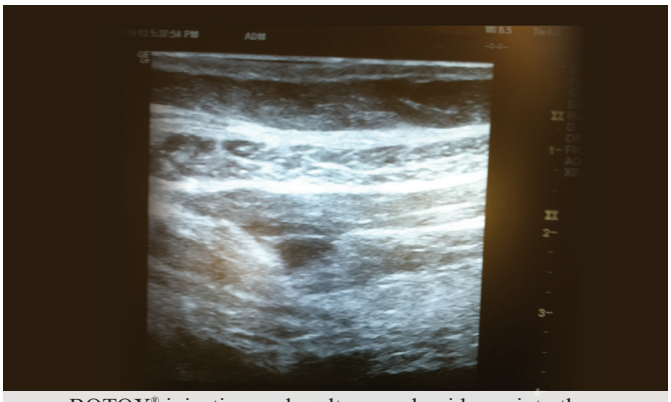
Initial CT scan image of patients abdominal wall defect

Figure 3



Three lateral abdominal wall sites for injection

Figure 4



BOTOX® injection under ultrasound guidance into the transversus abdominus muscle

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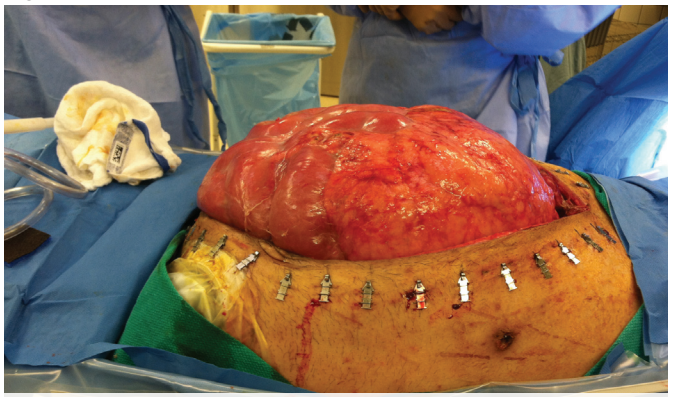
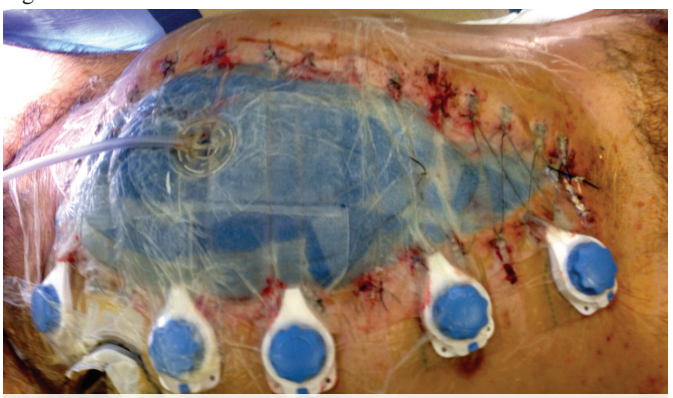
closure for 3 days and removed on day 8. He completed his recovery and had removal of his retention sutures with complete healing of his abdominal wall. (Figure 10) This case demonstrates the potential advantage of BOTOX administration in conjunction with the tissue expanding capabilities of the DermaClose RC device in managing challenging open abdomen cases.

Figure 5



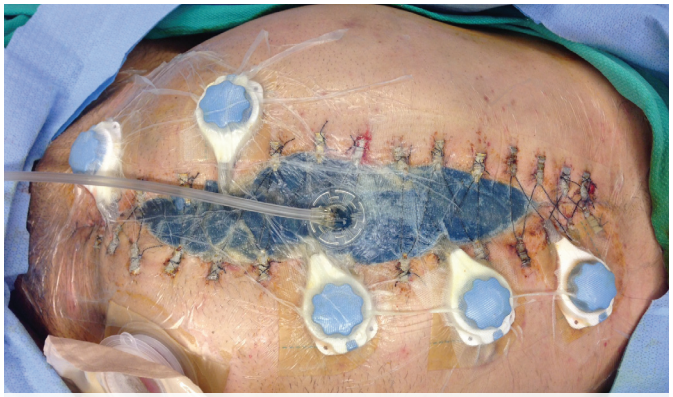
Initial application of device with initial 32cm defect

Figure 6



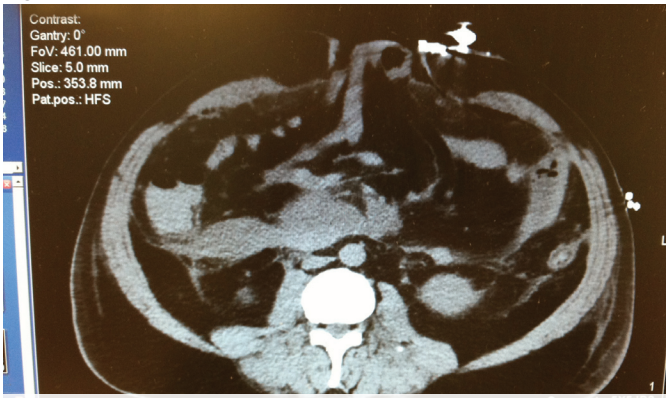
Initial application of device with residual 16cm defect

Figure 7



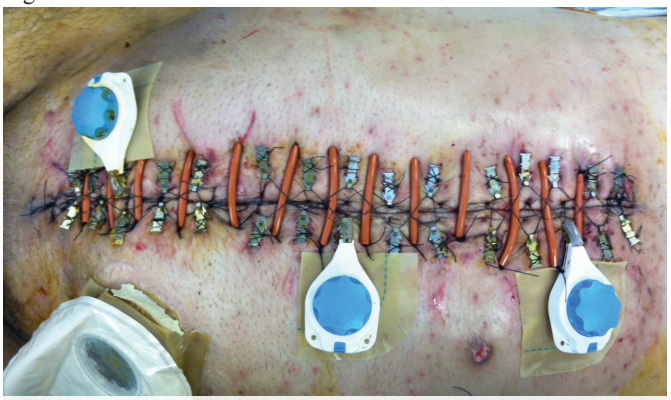
7cm defect following re-application on day 2

Figure 8



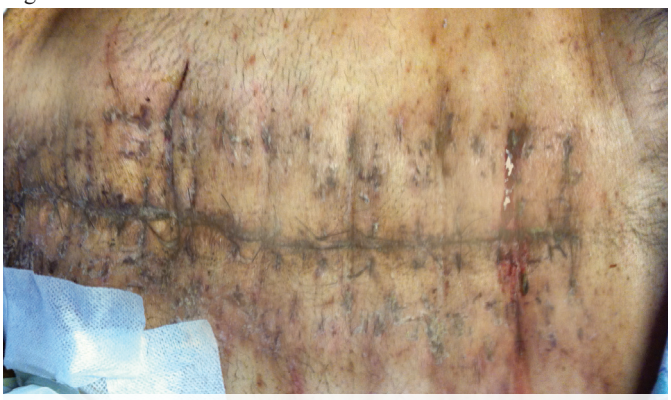
Abdominal CT scan performed after 5 days of application with significant reduction in fascial defect.

Figure 9



Primary soft tissue coverage of defect achieved on Day 5

Figure 10



Postoperative follow up, 6 weeks after initial application of DermaClose device.

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