Interesting Case Series

Gunshot Wound to the Abdomen

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DESCRIPTION

A 29-year-old man having a gunshot wound to the abdomen with skin graft over bowel was presented.

NEXT

QUESTIONS

1. **What is loss of domain?**
2. **Describe the elements of a components separation.**
3. **What complications are associated with a components separation method?**

DISCUSSION

Loss of domain occurs in patients with massive abdominal hernias, where the bowel has remained outside of the abdominal wall musculature for an extended period of time. As the abdominal muscles lose their elasticity, the diaphragm descends, leading to decreased peritoneal volume, which results in the viscera losing their position in the abdominal compartment.

The components separation technique has been described to correct large abdominal wounds with loss of domain. This technique provides dynamic autologous tissue repair while preserving innervation to the abdominal wall. The components separation forgoes donor site morbidity and frequently avoids the use of foreign material. First, a vertical incision lateral to the linea semilunaris extending from the ribs to the inguinal ligament is created and skin flaps are elevated to the anterior axillary line. Next, the plane deep to the external oblique is developed to mid or posterior axillary line; further release is achieved by separating the rectus from the posterior sheath. Lastly, the muscles are joined in the midline with or without the concomitant use of grafts.

In addition, Butler et al have reported the use of acellular dermal matrices directly over the bowel to repair large abdominal wall defects resulting from tumor extirpation, particularly those at increased risk of infection secondary to bacterial contamination and/or radiation therapy.

Complications of the components separation include infection, abdominal compartment syndrome, and dehiscence. To minimize the risk of infection, it is important to assess the wound bed status and delay closure if the wound was a result of trauma. Abdominal compartment syndrome arises from elevated intra-abdominal pressure due to tissue edema or free fluid collection in the abdominal cavity. Pulmonary, cardiovascular, renal, and gastrointestinal compromise, as well as death, may occur if not recognized and corrected early. Dehiscence occurs when the external oblique is not adequately mobilized.

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