Temporary Abdominal Closure with Vacuum Pack Technique

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Following severe trauma of the abdomen and pelvis, marked intraabdominal visceral edema, retroperitoneal hematoma, or packing of the peritoneal or pelvic cavity may prevent tension-free abdominal closure, forcing the surgeon to leave the abdomen open. Several techniques of temporary abdominal closure have been reported. We demonstrate a video clip of the vacuum pack technique.

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Key Words: Intra-abdominal Hypertension; Resuscitation; Decompression; Abdomen

CASE

A 43-year-old man underwent ligation of the bilateral internal iliac arteries, suprapubic cystostomy, and reconstruction of the left external iliac vessel for complex pelvic fracture with hemodynamic instability after blunt trauma. The injury severity score was 43. At the end of the emergency laparotomy, temporary abdominal closure with a vacuum pack technique was performed due to marked visceral edema, retroperitoneal hematoma, and packing of the pelvic cavity (Video. 1). Reexploration was planned and primary fascial closure was achieved 42 hours after damage control surgery.

DISCUSSION

After completion of the abdominal surgery, Jackson-Pratt drains are placed in the peritoneal cavity. As the

45 x 60 cm Ioban Antimicrobial Incise Drape (3M, St Paul, MN) or polyethylene sheets prepared, dry surgical towels are placed over the adhesive aspect of the Ioban drape adjusting to the range of the open abdomen. The visceral aspect of the Ioban drape is perforated multiple times with a scalpel blade. It then is placed over the peritoneal viscera and beneath the peritoneum of the abdominal wall. Experientially, towels attached to the Ioban drape seem to be easy to locate and be less broken away during placement in the open abdomen. Next, two Jackson-Pratt drains are placed on top of the towels, and the tubing is tunneled along the subcutaneous tissue to exit approximately 3 to 5 cm away from the upper or middle side of the wound. Then, the same-sized Ioban drape is placed over the wound and adjacent abdominal wall skin after adjacent skin is dried with towels. Each drain tube is connected to bulb suction. Finally, temporary abdominal closure is checked

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to determine whether the negative pressure seal is completed (1,2)

Conflict of Interest Statement

No potential conflict of interest relevant to this article was reported.

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Video Legend

Video 1. An intraoperative video recording shows a sequence of temporary abdominal closure with vacuum pack technique at the end of the emergency laparotomy.