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Complex wound care and exudate management using NPWT during Abdominal Compartment Syndrome caused by acute pancreatitis – case report

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Abdominal Compartment Syndrome - ACS

Challenging condition

Needs complex intensive care and surgical approach

Often caused by acute pancreatitis

Current surgical treatment – decompressive laparotomy - NPWT

Open Abdominal Treatment - NPWT

- Advancing method
- Reduces the intraabdominal pressure instantly --› is able to prevent MOF
- Drains the intraabdominal exudates
- Prevents some loss of domain

Open Abdomen Advisory Panel, Campbell A., Chang M., Fabian T., Franz M., Kaplan M. Seternes A, Rekstad LC, Mo S. Open Abdomen Treated with Negative Pressure Wound Therapy: Indications, Management and Survival. World J Sure. 2017 Jan;41(1):152-161

Open abdominal treatment – main challenges

Excessive loss of fluids

Loss of domain

Infections

Bowel perforation

Other surgical and non-surgical complications

- NPWT actively drains intra-peritoneal fluids rich in toxins and bacteria
- Rigorous fluid resuscitation is needed

Open abdominal treatment – main challenges

Excessive loss of fluids

Loss of domain

Infections

Bowel perforation

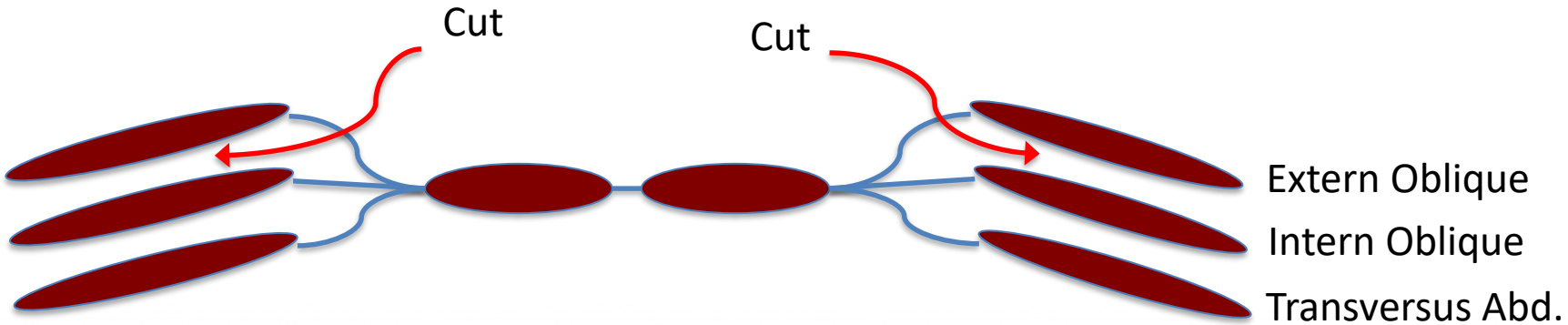
Other surgical and non-surgical complications

- Retraction of the oblique abdominal muscles – abdominal wall rigidity
- Staged abdominal closure, dynamic fascia closure
- Component separation

Massimo Sartelli, Fikri M. Abu-Zidan, Luca Ansaloni et al.: The role of the open abdomen procedure in managing severe abdominal sepsis: WSES position paper. World J Emerg Surg. 2015; 10: 35.

Dynamic fascia closure

Component separation



Case report

- 47 years old male patient
- Severe acute necrotising pancreatitis
- Treated at our Intensive Care Unit
- Rapidly increasing intra-abdominal pressure
- Abdominal Compartment Syndrome (ACS)

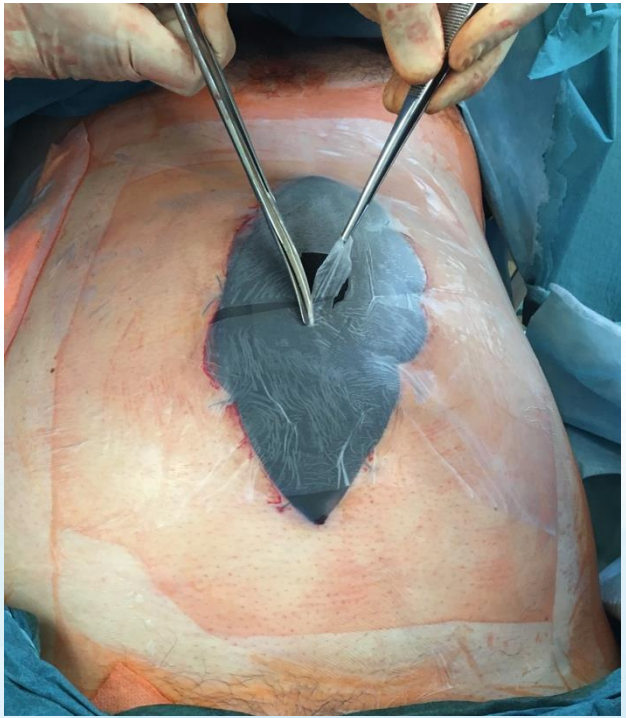
Case report

Decopressive laparotomy

VivanoMed Abdominal Kit

-100 Hgmm

Changed every 3-5 days



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Case report

First challenge - Excessive fluid loss

- 4000 ml/day exudate evacuated
  - Could be precisely monitored with Vivano
  - Needs rigorous and precise fluid resuscitation
  - Parenteral nutrition, albumin administration

Case report

- Infection of the pancreas
  - Necrosectomy of the pancreas was necessary at 4 weeks after the onset of the pancreatitis
- Extensive and severe colonic wall destruction
  - Subtotal colectomy with end ileostomy

Case report

Second challenge - Closure of the abdominal wall

- Pancreas necrosectomy + subtotal colectomy
- VivanoMed Abdominal kit was not needed any more
- The abdominal wall was closed
  - We used anterior component separation
  - Vivano NPWT wound dressing was used in the subcutis for 20 days, changed every 3-4 days

Case report

End of surgical treatment

- 44 days after the decompressive laparotomy
  - Vivano foam dressing was removed
  - Secondary suture of the skin was performed
  - Incisional NPWT was used for 5 days
  - The abdominal wound healed totally

Case report

We lose the patient suddenly because of a malignant cardiac arrhythmia, 2 days before the planned emission from the hospital.

Conclusion

ACS needs a complex intensive care and surgical approach

When abdominal decompression surgery is needed during ACS, the NPWT is a good tool in the hands of the surgeon, making possible a complex wound and exudate management during the treatment

Management of the open abdomen, as well as the closure of the abdominal wall after the abdominal NPWT can be challenging

Deep knowledge of the different types of NPWT possibilities is recommended for surgeons who treat patients with ACS