Burst Abdomen (Postoperative Abdominal Wound Dehiscence)

Burst abdomen refers to the postoperative disruption of all layers of the abdominal wall closure, resulting in the extrusion of abdominal viscera. It typically occurs between the **6th and 8th postoperative day** and is seen in approximately **1–2%** of laparotomy cases.

Pathophysiology

This complication involves failure of wound healing due to various intrinsic and extrinsic factors, leading to mechanical breakdown of the musculoaponeurotic layer and, potentially, evisceration.

Risk and Contributing Factors

Suture Material

- **Plain catgut**: Associated with a significantly higher risk of dehiscence due to early loss of tensile strength.
- **Recommended**: Non-absorbable monofilament sutures such as **polypropylene (Prolene)**, **polyamide**, or even **surgical steel wire**, which maintain strength and resist infection.

Wound Closure Technique

- **Interrupted sutures**: Lower risk compared to continuous methods.
- **Drain placement**: Drains passing through the surgical wound increase the risk of burst abdomen. **Stab incisions** are preferred for drain exit sites.

Type of Incision

- **Midline and vertical incisions**: Higher tendency to dehisce due to poor vascular supply and lack of muscle overlap.
- **Transverse incisions**: More stable and associated with lower risk.

Type of Surgery

- **Infected surgeries**: Especially in contaminated or dirty cases, infection compromises wound integrity.
- **Pancreatic surgery**: Pancreatic enzyme leakage can digest surrounding tissues, weakening the repair.
- **Bowel obstruction surgeries**: Increased intra-abdominal pressure predisposes to wound breakdown.

Increased Intra-abdominal Pressure

- **Coughing**
- **Vomiting**

- **Abdominal distension**

Patient-related Risk Factors

- **Obesity**: Poor wound approximation and increased tension.
- **Malignancy**
- **Jaundice**: Impairs healing through altered protein metabolism.
- **Hypoproteinemia**: Reduced collagen synthesis.
- **Anemia**

Clinical Features

- **Serosanguinous (pink) discharge**: Early warning sign in over **50%** of cases.
- **Sensation of tearing**: Patients often describe a feeling of “something giving way.”
- **Visible evisceration**: Especially after skin sutures have been removed; bowel or omentum may protrude through the wound.
- **Absence of pain or shock**: Notably, some patients remain hemodynamically stable initially.

- **Signs of intestinal obstruction**: May be present if evisceration compromises bowel lumen.

Emergency Management

Preoperative:

- **Reassurance**: Keep the patient calm to reduce further straining.
- **Sterile dressing**: Cover the wound with sterile, moist gauze or towel.
- **Nasogastric decompression**: To relieve intra-abdominal pressure and prevent aspiration.
- **IV fluid resuscitation**: Start immediately to manage fluid losses and support circulation.

Surgical Intervention:

- **Immediate return to theatre** is indicated:
    - Reduce and inspect eviscerated bowel.
    - Repair any obstruction or devitalized segments.
    - Perform **resuturing of the abdominal wall** using non-absorbable, tension-relieving techniques (e.g., retention sutures or mesh reinforcement if needed).

Prevention

- Use **appropriate suture material and technique** for fascial closure.
- Optimize **nutritional status** preoperatively.
- Control **comorbid conditions** such as anemia and diabetes.
- Employ **cough suppression** and support abdominal wound (with abdominal binders) in high-risk patients postoperatively.

Key Points for NCLEX/USMLE

- Suspect burst abdomen in a postoperative patient with serosanguinous discharge and a sudden sense of "tearing."
- Immediate intervention is required to prevent bowel strangulation and sepsis.
- Use **non-absorbable sutures** and minimize wound tension to reduce risk.
- Hypoproteinemia and infection are major modifiable risk factors.