Objectives

- Define Fistula classification terminology
- Contributing Factors
- Surgical vs Medical Management
- Nursing Assessment and Management
- Case Studies

Fistula

Is an abnormal connection between an organ, vessel, or intestine and another structure. Are usually the result of injury or surgery.
Fistula Classifications

- Anatomic Perspective – simple or complex
- Location – internal vs external (skin, vagina or rectum)
- Volume of output

Fistula Classification

Anatomic Perspective

- Simple Fistulas
  - Short, direct path
  - No associated abscess
  - No other organ involvement

- Complex – Type 1
  - Associated abscess
  - Multiple organ involvement
**Fistula Classification**

**Anatomic Perspective**

- **Complex – Type 2**
  Fistula associated with multiple openings associated with a large abdominal wall defect

---

**Fistula Location (internal vs external)**

<table>
<thead>
<tr>
<th>From</th>
<th>To</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>bladder</td>
<td>skin</td>
<td>vesicocutaneous</td>
</tr>
<tr>
<td>bladder</td>
<td>vagina</td>
<td>vesicovaginal</td>
</tr>
<tr>
<td>colon</td>
<td>skin</td>
<td>colocutaneous</td>
</tr>
<tr>
<td>colon</td>
<td>bladder</td>
<td>colovesical</td>
</tr>
<tr>
<td>intestine</td>
<td>bladder</td>
<td>enterocutaneous</td>
</tr>
<tr>
<td>intestine</td>
<td>skin</td>
<td>enterovesical</td>
</tr>
<tr>
<td>intestine</td>
<td>vagina</td>
<td>enterovaginal</td>
</tr>
<tr>
<td>rectum</td>
<td>vagina</td>
<td>rectovaginal</td>
</tr>
</tbody>
</table>

---

**Fistulas**

- **Rectovaginal**
- **Enterocutaneous**
Rectovaginal Fistulas

- Prolonged labor
- Lacerations or episiotomies during delivery
- IBD (UC or Crohn’s disease)
- Radiation to pelvis or perineum

Embarrassing
Painful
Profoundly affect quality of life
Passage of gas and or feces through the vagina
Fecal odor in the vaginal discharge
Vaginitis and cystitis
Pain during intercourse
Fecal incontinence

Treatment:
- surgery
- fibrin glue to plug the tract
- vaginal cup
- skin protection
- odor containment
Enterocutaneous Fistula (ECF)

- Also known as a gastrointestinal fistula
- Communicates between stomach, small or large bowel and the skin allowing gastrointestinal contents to flow onto the skin
- 75% to 85% are the result of previous surgeries but 15% to 25% of patients may develop an ECF without having had surgery (trauma, radiation enteritis, diverticular disease, malignancies, or IBD)

Contributing Factors to Fistula Formation

- Causal and Contributing factors
  - Anastomotic leak - technique, tension, perfusion, edema
  - Malignant disease
  - Infection
  - Medication (steroids)

Contributing Factors to Fistula Formation

- Causal and Contributing factors
  - Crohn’s disease – transmural
  - Serosal dessication - inadequate moisture in open wounds with exposed bowel
  - Previous radiation to area
Locations for Fistula Development

- Wound dehiscence
- Abscess site
- Incision
- Drain site
- Site of active disease
- Devascularized tissue

Enterocutaneous fistula

Presentation:
- Fever
- Localized erythema
- Induration
- Progressive local discomfort where the fistula will eventually erupt

Enterocutaneous Fistula

Diagnosis:
- Visual inspection
- Fistulogram
- CT Scan
- Small bowel follow through
Enterocutaneous Fistula

• Goal of medical management of a fistula is to achieve spontaneous closure.
• Approximately 60 to 70% of all fistulas will close spontaneously when sepsis is controlled and nutrition support is adequate.

Enterocutaneous Fistula

• Fistulas that heal spontaneously, 80% to 90% will do so within 5 weeks – if pt is adequately nourished.
• Absence of sepsis, adequate nutritional support, low output, and the etiology of a post-op fistula correlate with spontaneous closure.

Enterocutaneous Fistula

• Conservative management
  – Octreotide
  – TPN
  – NPO
  – Antibiotics if associated abscess
  – Drainage of abscess
  – Controlling IBD (inflammatory bowel disease)
  – Multidisciplinary approach
Enterocutaneous Fistula

Medical Management:
- Fluid and electrolyte replacement
- Control of infection
- Control of fistula output
- Skin protection
- Nutritional support

Enterocutaneous Fistula

Fluid and Electrolytes
- High-output fistula may result in electrolyte imbalance and hypovolemia
- Regular bloodwork and close monitoring of intake and output

Enterocutaneous Fistula

Control of Infection
- Sepsis is the major cause of death in patients with enteric fistulas
- Antibiotics
- Drainage of abscess or laparotomy with proximal diversion
Nutritional Support

- Malnutrition is a significant problem (often before the fistula develops)
- Enteral nutrition will maintain normal structure of GI tract (need at least 3 to 4 feet of small intestine)

Enterocutaneous Fistula

- Patience
- Time
- Conservative management (positive nitrogen balance with nutritional support, sepsis-free state)

Control of Fistula Output and Skin Protection

- Drainage of intestinal contents onto skin will result in epidermal erosion and pain
- Aggressive skin protection
- Intestinal output must be minimized (NPO or anti-secretory agents)
Fistula
Volume of Output

• High output fistula - more than 500 ml/24hr
• Moderate output fistula – 200 to 500 ml/24 hr
• Low output fistula – less than 200 ml/24hr

Frequency of sepsis, malnutrition, and fluid and electrolyte imbalance are directly related to fistula output.

Surgical Management

• If fistula tract has matured and is complex the patient usually waits 6-8 weeks before any surgical intervention……..usually longer
• If intervention is too early it increases the risk of morbidity and mortality then if delayed
• Need to ensure sepsis is under control
• If fistula occurs shortly after surgery, they may go back sooner for repair and/or diversion…..

Physician and situation dependent

Case Studies