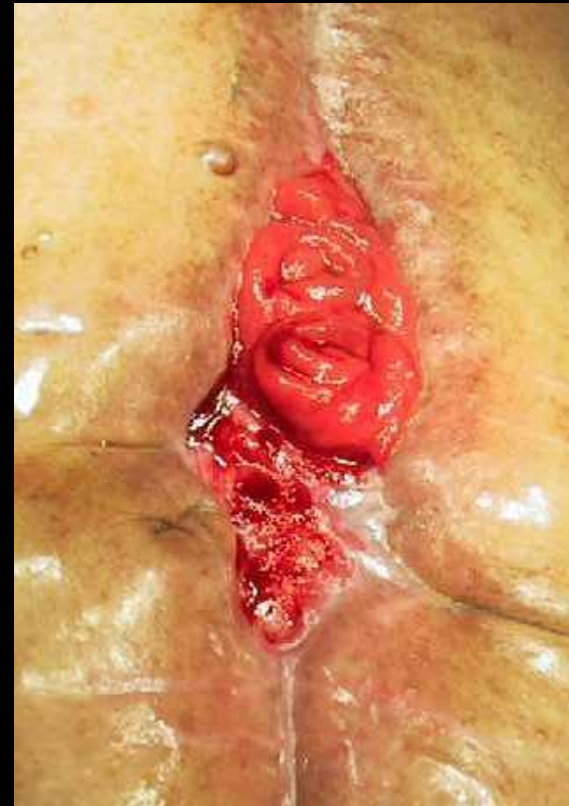


ENTEROCUTANEOUS FISTULAS

R Sim
ICU Talk
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Principles of Management

- Prevention
- Will it close spontaneously?
- Control sepsis
- Control output
- Fluid and electrolytes
- Nutrition
- Skin care

Prevention

- Patient factors - steroids, sepsis, chemotherapy, hypoproteinaemia, renal failure, diabetes
- Disease factors
 - Foreign body
 - Radiation
 - IBD
 - Ends ischemic
 - Neoplasia
 - Distal obstruction
 - Sepsis

Prevention

- Surgeon factors
 - Error in judgement
 - Full thickness bowel injury
 - Intestine caught in fascia closure
 - Suture-line defect
 - Everted anastomosis
 - Poor hemostasis
 - Poor drain placement
 - Mesenteric vascular injury
 - Strangulating sutures

Classification

Significance

Favourable

Unfavourable

Anatomic

Types I-IV

Esoph., duo. stump,
pancreatobiliary,
jejunal, defect < 1cm²,
tract < 2cm

Gastric, lat. duo.,
ileal, complete
disruption,
epithelialisation,
distal obs

Physiologic

Low output < 200 ml/d

Output does not prognosticate closure

Moderate

though it does decrease as a prelude

High output > 500ml/d

to closure

Classification



Significance

Favourable

Unfavourable

Etiologic

Disease process

Appendicitis,

Cancer, IBD,

Diverticulitis,

Radiation,

Postoperative

Foreign body

Spontaneous Closure

Favourable

Continuity maintained

End fistula

No abscess

Healthy bowel ends

Free distal flow

Esophageal

Duodenal stump

Jejunal

Tract <2cm

Defect <1cm²

Unfavourable

Complete disruption

Lateral fistula

Associated abscess

Diseased bowel ends

Distal obstruction

Gastric

Lateral duodenal

Ileal

Tract <2cm

Defect >1cm²

Gastrointestinal Fistulas

- Overall mortality 37% (intra-abdominal sepsis)
- Type I abdominal, esophagus, gastroduodenal mortality 17%
- Type II small bowel, mortality 33%
- Type III large bowel, mortality 20%
- Type IV all sites associated with a large abdominal wall defect, mortality 60%
IVA fistula is "deep" and uncontrolled
IVB fistula is on the surface of the defect "exposed" or "bud"
- 76% require further operations


Radiologic adjuncts



- CT scan
- Fistulogram
- Contrast study

- Guided percutaneous drainage
- Stenting

Control sepsis



- Antibiotics
- Drain abscesses and collections

Control output

- Bowel rest
- Relieve obstruction
- Decompression, diversion
- H2 antagonist
- Somatostatin
- Tissue glue

Fluid and Electrolytes



- Outstanding deficit
- Ongoing losses
- Maintenance

Fluid and Electrolytes

Type	Vol (ml/day)	Na (mEq/L)	K (mEq/L)	Cl (mEq/L)	HCO ₃ (mEq/L)
Saliva	1500	10	26	15	50
Gastric	1500	60-100	10	100	0
Duo.	2000	130	5	90	0-10
Ileum	3000	140	5	100	15-30
Pan.	800	140	5	75	70-115
Bile	800	145	5	100	15-35

Nutrition



- Enteral
- Parenteral

Nutrition



	<u>Low output</u>	<u>High output</u>
Nutrition	Enteral	Some or all parenteral
Protein	1-1.5 g/kg/d	1.5-2.5 g/kg/d
Calories	Resting expenditure	1.5x resting expenditure
Lipid	Enteral, 20-30%	Parenteral, 20-30%
Vitamins	RDA, 2x for Vit C	2x RDA
Minerals	No problem	Mg, Zn, K, Na, HCO ₃

Skin care

- Origin of fistula
- Nature of effluent
- Condition of skin
- Location of fistula

- Pouches
- Skin barrier

Operative management



- Timing of operation - 6 to 8 weeks