Supplementary Online Content


eAppendix. All data points obtained from patient records.

This supplementary material has been provided by the authors to give readers additional information about their work.
eAppendix: All data points obtained from patient records

**General Demographics**

- DOB
- Gender
- Race

**Surgical Profile**

- Principal Procedure
- CPT Code
- Status: Inpatient vs. Outpatient
- Same Day Elective Surgery?
- Transfer/Origin Status
- Internal Referral?
- Time (in days) from development of fistula to referral to tertiary care center
- Time (in days) from referral to tertiary care center to operative procedure
- Hospital Admission Date
- Operation Date
- Level of Supervision
- Anesthesia Technique

**Preoperative Risk Assessment**

**GENERAL**

- Height (Inches/Cm)
- Weight (Pounds/Kg)
- BMI
- Age at diagnosis
- Age at surgery
- Diabetes Mellitus
- Current Smoker within 1 year
- Pack- year cigarette history
- ETOH>2 drinks/day within 2 wks
- Illegal substance abuse within 30 days of surgery
- Preoperative use of control substances within 30 days of surgery
- Dyspnea
- DNR status
- Functional health status prior to surgery

**PULMONARY**

- Vent Dependent within 48 hours of surgery
- COPD [severe]
- Current pneumonia

**HEPATOBIARY**

- Ascites within 30 days
- Cirrhosis
- Portal hypertension
- TPN-induced cholestasis

**GASTROINTESTINAL**

- Esophageal varices
- Intra-abdominal (Y/N to include gastric, omental, perirectal, retroperitoneal varices)
**CARDIAC**
- CHF within 30 days
- History of MI in the past 6 months
- Previous PCI/PTCA
- Previous cardiac history
- History angina within 30 days before surgery
- Hypertension requiring medication

**VASCULAR**
- History of revascularization/amputation for PVD
- Rest pain/gangrene

**RENAL**
- Acute renal failure within 24 hours surgery
- Currently requiring or on dialysis within two weeks of surgery

**CENTRAL NERVOUS SYSTEM**
- Impaired sensorium within 48 hours of surgery
- Coma
- Hemiplegia/hemiparesis
- History of TIAs
- CVA/residual neurologic defect
- CVA/no neurologic defect
- Tumor involving CNS
- Paraplegia/paraparesis
- Quadriplegia/quadraparesis

**NUTRITIONAL/IMMUNE/OTHER**
- Disseminated Cancer
- Open wound
- Infected wound
- Steroid use for chronic condition
- >10% loss of body weight in last six months
- Intentional weight loss
- Bleeding disorders
- Preop transfusions within 72 hours
- Chemotherapy within 30 days
- Radiotherapy within 30 days
- Sepsis within 48 hours
- Pregnancy
- Prior operation within 30 days

**Fistula Specific Demographics**
- Amount of output
- Category fistula
- Increase in complexity of case (Y/N)
- Type of fistula
- Need for preoperative TPN
- Number of prior abdominal operations
- Etiology of fistula
Laboratory Data

**Preoperative (within 90 days of surgery)**
- Sodium (Na)
- Blood urea nitrogen (BUN)
- Creatinine (Cr)
- Albumin (Alb)
- Total bilirubin (T.Bili)
- Serum aspartate aminotransferase (AST/SGOT)
- Serum alanine aminotransferase (ALT/SGPT)
- Alkaline phosphatase (Alk Phos)
- Total Protein (T.Prot)
- Transferrin
- Prealbumin (Prealb)
- White blood count (WBC)
- Hematocrit (Hct)
- Platelets (Plt)
- Prothrombin time (PT)
- International normalized ratio (INR)
- Partial thromboplastin time (PTT)

**Postoperative Labs**
- Sodium
- Potassium
- Creatinine
- Creatinine phosphokinase (CPK)
- CK-MB
- Total Bilirubin
- WBC
- Hct
- Troponin I
- Troponin T
- Albumin
- Total protein

**Fistula-Specific pre-operative workup**

**Endoscopic Evaluation**
- Upper endoscopy
- Small bowel endoscopy/pill cam
- Colonoscopy
- Cystoscopy

**Radiographic Imaging**
- Barium swallow/gastrograffin enema
- Fistulogram
- CT scan
- MRI scan

**Preliminary Procedures Prior to Definitive Closure**
*not on day of fistula closure*
- Image guided abscess drainage
- Operative abscess drainage/tractotomy
- Operative wound exploration
- Operative exteriorization of fistula
- Operative removal of infected mesh
- Placement of percutaneous nephrostomy tubes
Placement of preoperative of ureteral stents
Placement of suprapubic tube
Placement of operative line access

**OTHER FISTULA-SPECIFIC PREOPERATIVE INDICES**
Pre-operative complications
Sepsis
Shock
Ileocecal valve present
Pre-op diagnosis of short bowel syndrome
Estimated pre-operative % of stomach remaining
Estimated pre-operative % of small bowel remaining
Estimated pre-operative % of colon remaining

**Operative information**
- Highest level resident
- Emergency case
- Wound classification
- ASA class
- Operative times (hour:min)
- Lowest recorded body temperature during case
- Patient temperature upon arrival to PACU/ICU
- Estimated blood loss (ml)
- Duration of adhesiolysis
- Type of resection
- Number of anastomoses
- Type of anastomoses
- Length (cm) of resection
- Transfusion requirements in the operating room
- Amount of albumin/colloid (ml) infused in operating room
- Intra-operative complications
- Ancillary procedures performed by primary operative service (include CPT)
- Concurrent procedure performed by consulting surgical service
- Type of abdominal wall reconstruction

**INTRAOPERATIVE OCCURRENCES**
- Cardiac arrest
- Death during operation
- Myocardial infarction
- Unplanned intubation for respiratory/cardiac failure

**Post-operative occurrences**

**WOUND OCCURRENCES**
- Superficial incisional SSI
- Deep incisional SSI
- Organ/space SSI
- Wound disruption

**RESPIRATORY OCCURRENCES**
- Pneumonia
- Unplanned intubation
- Pulmonary intubation
- On ventilator>48 hours
**URINARY TRACT OCCURRENCES**
- Progressive renal insufficiency
- Acute renal failure
- Urinary tract infection

**CNS OCCURRENCES**
- Stroke/ CVA
- Coma > 24 hours
- Peripheral nerve injury

**CARDIAC OCCURRENCES**
- Cardiac arrest requiring CPR
- Myocardial infarction

**RENAL OCCURRENCES**
- New onset need for dialysis during hospitalization

**OTHER POSTOPERATIVE OCCURRENCES**
- Hemorrhage
- Transfusions within 72 hours
- Deep vein thrombosis
- Central line infection
- Sepsis
- Septic shock
- Need for ICU stay

**Fistula specific postoperative occurrences**
- Duration of postoperative TPN (days)
- Short gut syndrome requiring permanent TPN
- Short gut syndrome requiring referral for small bowel transplant
- Short term (<30 days post-operatively) re-fistulization
- Long term (>30 days post-operatively) re-fistulization
- Non-operative management resulting in fistula closure
- Reoperation required for fistula closure

**Hospital discharge information**
- Discharge destination
- Unplanned readmission within 30 days
- Still in hospital at 30 days
- Hospital date of discharge
- Postoperative death
- Unplanned reoperation(s) within 30 days

**Follow-up**
- Follow-up within 30 days
- Method of follow-up
- Patient contact management
- Contact results
- Number of readmissions within one year of surgery
- Greater than 90 day narcotic requirement
- Return to work
- Need for future operation greater than 30 days post-operatively