Post-op Fever, Wound Care and Pain Control

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Saturday Night Fever

• Definition: Temp > 38.5°C
• 5 W’s
  – Wind (atelectasis, pneumonia), Water (UTI), Wound (leak, infection, hematoma), Walking (DVT, PE), Wonder drugs (anaesthetics, drug rxns)
The Fugitive

- Fever: Hx & Px, U/A, CBC, imaging, cultures
- Cultures:
  - Urine culture
  - Blood culture x 2 +/- specific line culture
  - Culture drain fluid / wound
  - Culture ascites, pleural effusion, CSF
  - ANY radiologically accessible loculated collection
The Usual Suspects

- **ANY TIME**: DVT/PE, thrombophlebitis, drug, transfusion, UTI, line sepsis, heart valves
- **POD 0**: Malignant hyperthermia, anaesthetic (halothane), aspiration, endocrine
- **POD 1-2**: Atelectasis, streptococcal or clostridial wound infection
- **POD 3-5**: Pneumonia, wound complication (leaking anastomosis, hematoma, infection)
- **POD 6+**: wound infection/abscess, infected hematoma, C. diff. colitis, pneumonia
• don’t forget Hx & Px
• ABx : Are they on some already? Do they need to be? Broad or Narrow?
• ABx for B-hemolytic strep spreading cellulitis, bacteremia, sepsis or central face infections; UTI
• Pus about? Let it out!
• Special Case : Febrile Neutropenia
  – Need multiple ABx regardless
  – Tobra, Vanc, and Ceftaz or Cipro
Flirting With Disaster

- Healing: Primary, Delayed Primary, Secondary
- Factors adversely affecting healing:
  - **Local**: Infection, radiation, poor blood supply, FB, movement
  - **Systemic**: sepsis, malnutrition, hypoxia, steroids, cancer, DM, chemotherapy, CRF
Lethal Weapon

• Surgical techniques reducing likelihood of infection:
  – hemostasis, anatomic dissection, gentleness, decreased FB & necrotic tissue, sterile technique, irrigation

• Factors promoting infection:
  – Age, obesity, bacterial factors (innoculum, virulence), steroids, multiple dx’s (>3), hypoxia immunosupp, contaminated vs clean, emergent vs elective, prolonged hosp. stay, prolonged O.R., unnecessary drains, remote infections
48 Hours

- Primary wounds epithelialize in ~48 hours
- Delayed primary - pack with saline soaked gauze x 2-3 days then close, useful in ?infected wounds
- Skin Grafts - leave drsg on x 5 days unless SEVERE infection suspected
Another 48 Hours

- Vascular procedures / free flaps / replants
  - Doppler regularly for first 24-72 hours in most cases (listen for strength of tone as well as presence)
  - keep limb elevated, room warm

- Fractures
  - keep area immobilized, ensure good alignment and apposition
Scar Face

- Any suture left >10 days will leave railroad tracks
- Face: 3-5 days
- Scalp, abdomen, chest: 7-10 days
- Extremities, back: 10-14 days
- If in doubt can remove 1/2 sutures at a time
- Retention sutures stay in weeks
- Add extra strength after removal by using steri strips
Drains - Withdraw fluid and decrease dead space
  – Dirty wounds - drain leaves via same incision
  – Clean wounds - drain leaves via separate stab
Penrose - open drain, advanced/pulled early
J-P - closed, when pulled varies (<30cc)
Hemovac - closed, disc, varies (<30cc)
Pig tail - closed, placed radiologically (pleural effusion, abscess)
Closed drains less likely to lead to infection.
Gone With The Wind

• Thoracostomy / pleurevac
  – air leak: occlude tube, if air leak present - leak is in the tube
  – to pull: No air leak x24 hours, usu < 100cc/24, d/c suction, full insp, rapid pull, CXR. Note pneumo resorbs at 1% thoracic volume / day
The Sweet Hereafter

• Determine cause of pain (don’t assume)
  – is it expected location or different?
  – is it usual/expected severity?
• Determine best treatment for the pain
  – pain killers
  – other meds
  – return to O.R.
• Best to prevent it before it is noticed
A Civil Action

- **Pre-op** local anaesthetic
  - reduces pain receptor recruitment
- **Epidural anaesthetic**
  - useful in any surgery mid-chest down, no inhibition of gag reflex
  - can be continued for long time post-op, requires Foley
- **PCA**
  - narcotic, bolus +/- continuous infusion
  - in paeds, continuous infusion titrated vs Resps
Terminator

- Non-narcotic:
  - regular dose vs. prn
  - Tylenol vs. NSAIDS (ASA not advised for pain)
- Low potency narcotics:
  - Tylenol #3, codeine
- High potency narcotics:
  - morpine, methadone, fentanyl, demerol
- Narcotics usu. require additional anti-emetic
Twelve Monkeys

- **Tylenol**:  
  - analgesic, anti-pyretic  
  - SFx: rash, hepatic necrosis, potentiates anti-coagulants at high doses

- **NSAID’s**:  
  - analgesic, anti-pyretic, anti-inflammatory  
  - Ibuprofen SFx: Decreased diuretic effect of lasix, decreased effects of HBP meds, gastric
Get Shorty

– Indocin SFx: significant exacerbation of GI lesions; may worsen depression, epilepsy, or Parkinson’s; Potentially nephrotoxic

– Toradol - only iv NSAID, as effective as narcotics for pain control, no anti-pyretic effect

• Narcotics used when Tylenol/NSAID’s not enough

• Naloxone used to treat severe/life threatening side effects - IV/IM/SC/ET
Trainspotting

- Opioid SFx:
  - Resp. depression, nausea, constipation, decreased cough, urinary retention, orthostatic hypotension, sedation (increases with liver failure), vertigo, ADH release, decreased GI secretions, increased tone in bile ducts & bronchi
  - Demerol - increased excitation with MAOi’s, O/D leads to convulsions, less sedating, avoid in renal failure
  - Fentanyl - muscle rigidity, mild bradycardia, plasma protein bound
Corticosteroids: brain mets, spinal cord compression
Anticonvulsants (carbamazepine): neuropathic pain
Antidepressants (amitriptyline, doxepin): neuropathic pain
Anxiolytics
Muscle Relaxants (cyclobenzaprine): muscle spasm
Viscous Lidocaine
Pyridium: UTI
Nitroglycerin
1. Which of the following changes could make this wound a less favourable environment for infection?

a) decreasing the operative time by omitting the cholangiogram

b) a Jackson-Pratt drain exiting the inferior aspect of the wound

c) closing the wound in multiple layers

d) leaving a seroma in the wound to prevent desiccation of the tissues

e) reinforcing the wound closure with a preperitoneal sheet of Marlex mesh
2. All the following characteristics of this patient might influence the risk of a wound infection except:

a) Age
b) Steroid dependence
c) Receipt of chemotherapy
d) Male sex
e) relative hypoxia
3. Five days after a sigmoid colectomy for Ca, a pt.’s skin staples are removed and serosanguinous fluid emerges. The most appropriate management is:

a) wide opening of the wound to assure adequate drainage
b) Gram stain and C&S of the fluid and appropriate antibiotics after the stain is reviewed

c) careful reapproximation of the wound adages with tape
d) immediate return to the O.R.
THANK YOU VERY MUCH

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