COMMON SURGICAL CONCERNS

Martha Metzgar, DO, FAAFP

SURGERY ON AOBFP EXAM

- EENT – 5% - Just the first E
- General Surgery – 3% - some
- Orthopedics – 3% - NOPE

CASE 1

A 45-year-old female has ultrasonography of her kidneys as part of an evaluation for uncontrolled hypertension. The report notes an incidental finding of stones in the gallbladder, confirmed on right upper quadrant ultrasonography. She has no symptoms you can relate to the gallstones. Other than hypertension she has no chronic medical problems. Which one of the following should you recommend to her at this time regarding the gallstones?

A) Expectant management

B) Oral dissolution therapy

C) Extracorporeal lithotripsy

D) Endoscopic retrograde cholangiopancreatography(ERCP)

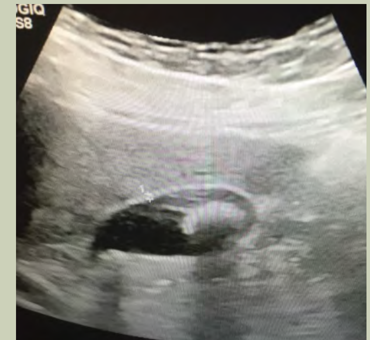
E) Laparoscopic cholecystectomy

BILIARY CONDITIONS

- Cholecystitis
  - inflammation and infection of the gallbladder caused by blockage of the cystic duct
- Cholelithiasis – Cause Biliary colic
  - Transient obstruction of the cystic duct with gallstone.
- Choledocholithiasis
  - stone in the common bile duct – often causes increases in LFTs
- Cholangitis
  - Inflammation of the bile ducts

CHOLELITHIASIS

- Risk factors
  - Obesity
  - Rapid/Cyclic weight loss
  - Childbearing
  - Female
  - First degree relative
  - Native American or Scandinavian descent
  - Drugs
    - Ceftriaxone, estrogen, TPN
  - Increasing age
  - Ileal disease, resection, or bypass
- Asymptomatic
  - 10% will be symptomatic in 5 years
  - 25% in 10 years
  - Expectant management
- Oral dissolution therapy not helpful
- Symptomatic – surgery
- Imaging of choice is ultrasound.



CHOLANGITIS

- Acute Ascending Cholangitis – Emergent
  - Inflammation of the bile ducts
    - Usually obstruction from gallstones/tumor
  - Charcot Triad – fever, RUQ pain, Jaundice
  - Fluids and Antibiotics
  - ERCP – diagnose and remove obstruction
- Primary Sclerosing Cholangitis
  - Unknown etiology – inflammation/fibrosis

LET'S COMPARE

Feature	Biliary Colic	Cholecystitis
Character	Visceral	Parietal
Location	Epigastrium	RUQ
Duration	<3 hours	>3 hours
Mass	None	RUQ
Fever	Absent	Present
Leukocytosis	Absent	Present

CHOLECYSTECTOMY

- Cholecystectomy reduces mortality in Cholecystitis
  - mild acute cholecystitis – 24-72 h
  - Mild gallstone pancreatitis – 48 h
- Delayed cholecystectomy in severe cholecystitis or pancreatitis
- Laparoscopic Cholecystectomy preferred
  - Injury to the biliary tract system is the most common complication.

CASE 2

A patient is admitted to the hospital with severe acute pancreatitis, based on diagnostic criteria for severity. After appropriate intravenous hydration, which one of the following is associated with shorter hospital stays and lower mortality?

A) Parenteral nutrition

B) Nothing by mouth until the pain has resolved

C) Clear liquids by mouth after 48 hours

D) Bolus nasogastric enteral nutrition

E) Continuous nasogastric enteral nutrition

PANCREATITIS – WHAT ARE THE CRITERIA?

- 2 or more of the following
  - Serum amylase or lipase >3 times the upper limit of normal
  - Abdominal pain consistent with pancreatitis
    - Epigastric, radiates to back, constant
  - Characteristic findings on imaging – peripancreatic inflammation and fluid
    - Ultrasound – assess for stones in CBD
    - XR may show sentinel loop of gas-filed duodenum due to local ileus
    - CT if patient does not improve after 24-48 hours
- Causes
  - Gallstones (40-70%), Alcohol (25-35%), Idiopathic (10-25%), Drugs (5%)(Valproate, Steroids, Opioids), Triglycerides (1-4%), Other (venom, autoimmune, infection, trauma, pancreatic cancer)

RANSON'S CRITERIA

Admission

- Age >55
- WBC>16K
- Glucose>200
- LDH>350
- AST>250

48 hours

- Hct Decreased >10%
- BUN increased >5mg/dl
- Serum PaO2 <60
- Base deficit >4mEq/L
- Calcium <8 mg/dL
- Estimated fluid sequestration>6L

0-2 = 1% mortality
3-4 = 15% mortality
5-6 = 40% mortality
>7 = >50% mortality

TREATMENT

Question	Answer
Where?	ICU if end-organ dysfunction
Fluids?	Aggressive NS or LR at 250-300ml/hr, goal UO 0.5mL/kg/hr
Feeding	Enteral ASAP Mild – when pain free Mod/severe – enteral ASAP with tube if needed
Pain control	YES!
Antibiotics prophylactically?	Nope
Antibiotics for infected necrosis?	Yes Imipenem, ertapenem

CASE 4

A 15 yo male presents to the ED with complaint of diffuse abdominal pain. He is nauseated (no vomiting) and doesn't want to eat. He was treated last week over the phone for a urinary infection with an antibiotic. T 101.8°F. His abdomen is slightly distended and diffusely tender with peritoneal signs. WBC 18.8K (4-10x10^9/L) . CT of the abdomen/pelvis demonstrates a mass anterior to the right psoas muscle. The appendix is not visualized.

What is the most likely diagnosis?

A. Infectious Colitis
B. Pyelonephritis
C. Crohn's disease
D. Ruptured appendix
E. Epididymitis

APPENDICITIS

- Abdominal pain (100%)
- Anorexia (100%)
- Nausea (90%)
- Vomiting (75%)
- Pain migration (50%)
  - Mid abdomen to RLQ
  - McBurney's point
- Leukocytosis (70%) with left shift (90%)

- Fever
- Tachycardia
- Guarding
- Obstipation
- Rovsing's sign

CT for diagnosis

Ultrasound if pregnant or child

Treat with appendectomy

ATYPICAL APPENDICITIS

- Psoas sign
  - pain with passive right thigh extension
  - or active flexion of the hip.
- Obturator sign
  - Pain with internal rotation of the flexed right thigh
    - Pelvic appendix
- Local and suprapubic pain on rectal
  - Pelvic appendix
- Hematuria

CASE 4

- A 27 yo male presents complaining of repeated episodes of painful, red eye associated with photophobia. The redness is pronounced around the area of the cornea (ciliary flush) and visual acuity is decreased. He has had this assessed by ophthalmology and was told to come to you to be evaluated for a systemic disease.
- What systemic disease may be associated with recurrent episodes of this condition?
  - A)multiple sclerosis
  - B)Ankylosing spondylitis
  - C)Chronic Kidney Disease
  - D)Colon Cancer
  - E)Ocular Migraines

	Acute Conjunctivitis	Acute iritis	Acute glaucoma	Corneal trauma/ulcer
Incidence	Very common	Common	Uncommon	common
Discharge	Moderate/copius	None	None	Watery or purulent
Vision	No effect	Slightly blurred	Markedly blurred	Usually blurred
Pain	None	Moderate	Severe	severe
Conjunctival Injection	Diffuse – more toward fornices	Mainly circumcorneal	Diffuse	diffuse
Cornea	Clear	Usually clear	Steamy	Depends on cause
Pupil size	Normal	Small	Mod dilated, fixed	normal
Pupillary light response	Normal	Poor	None	normal
Intraocular pressure	Normal	Normal	Elevated	normal
Treatment	depends	mydriatics, steroids	Emergent, topical beta blocker first	Pain control/ depends

CASE 5

14 yo male presents complaining of acute onset nausea and vomiting. He eventually admits to left sided testicular pain as well. On physical exam, abdominal exam is unremarkable. Testicular exam reveals a high-riding horizontal testicle on the left and an absent cremasteric reflex. Next action?

a) Reassurance

b) Ultrasound of testicle

c) doppler ultrasound of testicle

d) emergent surgery

e) ceftriaxone IM and doxycycline

Diagnosis	Clues	treatment
Epididymo-orchitis	Altered GU structure/function, recent viral illness, tenderness in testicle or epididymis	<35 – GC/CT – doxy, ceftriaxone >35 – coliform bacteria cipro, levaquin, bactrim, augmentin
Hydrocele/inguinal hernia	Fluctuation of swelling or mass throughout the day or with activity	Surgery if symptomatic. Non urgent
Torsion of the appendix testicle, or appendix epididymis	Blue dot sign, Tenderness over the head of the testicle	Rest, observation, pain medication
Torsion of spermatic cord	Absent or decreased blood flow on US, high-riding testicle, n/v, palpable twist in cord, sudden onset, no cremasteric reflex	Emergent surgery if highly suspected. U/S with doppler if inconclusive PE Do not delay surgery for U/S
Tumor	Tumor markers or abnormal ab results. Hard mass in testicle, systemic symptoms (metastasis)	Depends on stage of cancer
Varicocele	Dull, aching pain. Fluctuation of swelling or pain throughout the day.	Surgery if symptomatic.

CASE 7

- A 67yo Male is status post MI and is admitted to the ICU. On day 5 of ICU admission, the patient is rolled by nursing and a non-blanchable area of erythema with no skin breakdown is found on the sacral prominence. This would be classified as what stage of Pressure ulcer?
  - A)Stage1
  - B)Stage2
  - C)Stage3
  - D)Stage4
  - E)Unstageable as there is no skin breakdown

PRESSURE WOUNDS

Risk Factors

- Develop at site of bony prominences
- Impaired mobility
- Decreased perfusion
- Edema
- Poor general heath
- Low nutrition
- Incontinence/skin moisture
- Advanced age

Staging

- Stage1
  - Non-blanchable erythema of intact skin
- Stage2
  - Partial-thickness skin loss with exposed dermis
- Stage3
  - Full-thickness skin loss
- Stage4
  - Full thickness skin and tissue loss

CASE 7

37 yo G2P2002 presents with 2 days of pelvic pain and vaginal spotting. No fever, chills, vaginal discharge, dysuria or GI symptoms. LMP approx 7 weeks ago. Previous pregnancies were conceived via IVF. She is not using contraception. On speculum exam, the os is closed and you note a small amount of dark brown discharge. No mucopurulent discharge and the cervix is not friable. No tenderness on movement of the cervix. Bimanual notes an enlarged and soft uterus with some right adnexal tenderness. Wet prep and KOH neg.

What is the best first test to help confirm diagnosis?

a) GC/CT cultures
b) b-hCG
c) Pelvic Ultrasound with doppler flow
d) Pelvic CT
e) Laparoscopy

ECTOPIC PREGNANCY

- Abdominal pain with spotting
  - Usually around 6-8 weeks after LMP
- Amenorrhea, abdominal pain, AUB – think ectopic
- Risk factors
  - Previous ectopic, PID, endometriosis, previous tubal/pelvic surgery, infertility/treatment, uterotubal anomalies, smoking
- IUD does not increase absolute risk but if patient with IUD does become pregnant, ectopic is more common
- Vasovagal/orthostatic hypotension – impending rupture
- Tubal rupture is major complication

ECTOPIC PREGNANCY

- Diagnosis
  - b-hCG - >1500 should see pregnancy on transvaginal US
- If <1500 and no gestation on US
  - Early normal pregnancy
  - Ectopic
  - Heterotopic
  - Early pregnancy failure
- Need serial b-hCG titers – should double every 48 hours

- Medical Management
  - Methotrexate if
    - Hemodynamically stable
    - Small mass <4cm
    - Lack of cardiac motion
    - Normal hgb
    - Normal liver/renal function
    - Close follow up available
- Surgical Management
  - Laparotomy with salpingectomy
  - Fallopian tube conservative surgery

52 yo male POD#1 after a right total knee replacement. You are concerned that he has not started activity and would like to try to prevent atelectasis. In addition to incentive spirometry, you use your skills as an osteopathic physician by performing which osteopathic treatment?

A) Rib Raising, thoracic diaphragm release and OA decompression
B) OA decompression and pedal pump
C) Rib Raising and pedal pump
D) HVLA to the thoracic spine

CASE 8

POST SURGICAL OMM

- Typical treatment may include:
  - OA release,
  - rib raising,
  - lumbar, sacral, pelvic soft tissue,
  - thoracic diaphragm release
  - pedal pump
- Goals: Prevent Atelectasis, Prevent/treat ileus, Improve ANS function
- Always keep in mind surgical sites (joint replacements), wounds, drains, patient comfort
- Work around patient in hospital bed

POST OP FEVER

- **Immediate (24 hours)**- medications or blood products trauma suffered prior to surgery or as part of surgery; previous infections
- Acute – first week – atelectasis, UTI, DVT, wound infection (Wind, water, walking, wound)
- Medications
- In postpartum women think Endometritis (Womb)

REFERENCES

- Graham, Kenneth, DO, “ Osteopathic Manipulative Medicine Guidelines for the hospitalized patient” 3rd Ed. Tulsa, OK. 2003
- “Common Questions about Pressure Ulcers” Raetz, J. Wick, K. *Am Fam Physician.* 2015 Nov 15;92(10):888-894.
- “Testicular Torsion: Diagnosis, Evaluation, and Management” Sharp, V et al. *Am Fam Physician.* 2013 Dec 15;88(12):835-840.
- “Testicular Cancer: Diagnosis and Treatment” Baird. D et al*Am Fam Physician*. 2018 Feb 15;97(4):261-268.
- “Diagnosis and Management of Ectopic Pregnancy” Barash, J. Buchanan, E., Hillson, C. *Am Fam Physician.* 2014 Jul 1;90(1):34-40.
- “Acute Pancreatitis” Quinlan, J. *Am Fam Physician.* 2014 Nov 1;90(9):632-639
- “Acute Appendicitis: Efficient Diagnosis and Management” Snider, M. et al *Am Fam Physician.* 2018 Jul1;98(1):25-33.
- “Evaluation of the Painful Eye” Pflipsen, M. et al. *Am Fam Physician.* 2016 Jun 15;93(12):991-998
- “Evaluation of Jaundice in Adults” Fargo, M., et al. *Am Fam Physician.* 2017 Feb 1;95(3):164-168
- “Diagnosing Biliary Colic and Acute Cholecystitis” *Am Fam Physician.* 2000 Sep 15;62(6):1386-1388.
- “Surgical and Nonsurgical Management of Gallstones”. Abraham, S. et al. *Am Fam Physician.* 2014 May 15;89(10):795-802.
- Swanson’s Family Medicine Board Review. Tallia et al. 2015.