ABSITE questions we miss by Dr. Meyers: 1/29/2009

Breast:
1. **Rx intraductal papilloma.**
   Most commonly present with bleeding/bloody nipple d/c. Generally resect via major duct excision or needle loc if seen on imaging. Remember, this isn’t malignant or premalignant, it’s a benign condition.

2. **Anat level 3 LN’s** (8 senior residents missed this in 2005)
   Never know how ? was written, so may have been misleading. But remember pec minor separates levels of axilla. I= lateral to II=posterior to and III= medial to pec minor and extends to Halstedt’s ligament/thoracic inlet.

3. **Contraindications to BCT in stage I breast cancer.** (8 senr residents missed 2005)
   Prior irradiation, inability to get negative margins, inappropriate size/breast ratio, inflammatory breast cancer. This was from 2005, so they may have wanted you to say a T3/4 tumor is a contraindication. It probably is if you don’t give neoadjuvant chemo, so if that’s the picture that is painted, then that’s the answer. Remember: + nodes is not a contraindication to BCT.

4. **Breast tumor indic for SLN.**
   For our purposes, SLN indicated for any invasive cancer except T4. For test purposes, they might restrict it to T1 or T2 tumors. Of course, any patient with clinically proven nodes is not a SLN candidate, they need an ALND. Remember, mastectomy not a contraindication for SLN. Also remember, on the test DCIS is not an indication unless undergoing mastectomy (in real life there are a couple others, but those are gray areas).

5. **Rx DCIS.**
   Remember, this is a form of breast cancer. Don’t need to worry about nodes (see above), but rx is same as invasive cancer. BCT + XRT or mastectomy.

6. **Rx DCIS in male.**
   Mastectomy. (same is true for invasive cancer)

7. **Rx Ca breast with negative SLN.**
   Do not need to do ALND. Only need to attend to breast which will be either BCT or mastectomy depending on tumor. This question may have been getting at additional therapy. Any ER+ tumor would get Tamoxifen x 5 years. In older patients with tumor <2cm, that’s probably all they are looking for on the test. In young patient with tumor >1cm, likely get chemo too. In ER-tumor, get chemo only. Remember chemo is some combination of adriamycin, cyclophosphamide and taxol. Primary side effect of adriamycin is cardiomyopathy. Primary SE for taxol is neuropathy.
8. **Rx postmenopausal breast cancer.**
   See above. A bunch of people missed this in 2006.

9. **Histology assoc with subsequent breast cancer.**
   3 benign proliferative lesions that increase risk of developing breast cancer (but aren’t themselves pre-malignant) and risk is bilateral, not just in ipsilateral breast. Atypical ductal hyperplasia (ADH). Atypical lobular hyperplasia (ALH). LCIS. Any of these found on needle biopsy warrant excision because of risk of assoc cancer. However, purpose of excision is to have adequate sample and once excised, don’t need negative margins. Consider chemoprevention with Tamoxifen if you diag these.

10. **Rx LCIS breast.**
    See #1 above. A few people missed this.

11. **Rx breast mass post neoadjuvant therapy.**
    Same options apply to these patients as any de novo breast cancer. BCT or mastectomy. Don’t have to do mastectomy just because it was big to start with, if it shrunk and is now amenable to BCT, then that’s ok.

12. **Rx inflammatory breast cancer.**
    Neoadjuvant chemo first. Then mastectomy (modified radical). Then XRT.

**Liver:**
1. **Rx Amebic Liver Abscess.**
   Organism is Entamoeba histolytica which enters liver via portal system from primary GI infection. Often present with fever, RUQ pain and tenderness. Indirect hemagglutination test may be helpful in diagnosis. Rx with Metronidazole. Surgery or perc drainage reserved for abx failures.

2. **Rx pyogenic liver abscess.**
   Primary causes are biliary infection (cholecystitis/cholangitis) or seeding from portal vein drainage (appendicitis/diverticulitis). E. coli, klebsiella and strep are most common organisms. Rx with abx and/or perc drainage and search for primary source.

3. **Rx echinococcal abscess.**
   Diag by indirect hemagglutination and ELISA. Rx is surgical with complete cystectomy and avoiding spillage. Antiparasitic rx is with mebendazole.

4. **Rx colon cancer with seg 1 and 2 liver mets (2006)**
   Remember the anatomy. Seg 1 = caudate. 2-4= left lobe (2/3=left lat segment) and 58=right lobe. For board purposes, “unilobar” disease is respectable. Segment 1 and 2 would be resected with left hepatic lobectomy.
5. **Anat aberrant Rt hepatic artery.**
   Totally unclear as to how they asked this. Might have been misleading. Replaced right hepatic arises from the SMA and passes posterior to the portal vein. Replaced left hepatic arises directly from the celiac or from the lt gastric and passes directly into the liver. Either can be ligated if needed without significant issue relative to hepatic ischemia.

6. **Charact Focal Nodular Hyperplasia Liver.**
   Typically < 5cm. Usually incidental and asymptomatic. Hallmark characteristic is “central stellate scar” seen on imaging. Have intact Kupfer cells so will be “hot” on sulfur colloid scan. No rx needed unless symptomatic, then they are resected.

7. **Rx/complications hepatic adenoma.**
   Benign neoplasm. Most common in young women. Assoc with OCP use. Primary complication is rupture and hemorrhage. If diagnosed and small, manage by stopping OCP use. If not assoc with OCP or large, resect.

8. **Rx hemangioma liver (on test 3 years in a row)**
   Common and usually incidental. “giant” hemangioma = > 10cm. Diag test of choice = MRI. So if CT suggestive, use MRI to confirm. Rx only for sxs. If incidental, leave alone. Surgery is enucleation or anatomic resection. If both are choice, go with enucleation. No need/benefit for non-surgical therapy.
   Giant hemangioma in pediatric patient may present with Kasabach-Merit syndrome= hepatic sequestration and thrombocytopenia. Can also lead to AV shunting and hear failure. Large hemangioma’s in kids should be resected when found.

**Misc Colon and Colorectal Cancer**

1. **Charact T3 colon cancer.**
   Memorize T staging:
   - T1-mucosa/submucosa
   - T2-into but not through muscularis propria
   - T3-though muscularis propria
   - T4-invades other organs/structures

2. **Rx villous adenoma rectum in 96 y.o.**
   This is best treated with transanal excision. Remember criteria for transanal excision. Must be polyp or no greater than T1 tumor. Must be <40% circumference of rectum. Must be within 8-10cm of anal verge. If invasive, must not have lumphovascular invasion (LVI) and must not be poorly differentiated (these are risk factors for LN mets)

3. **Rx. Squamous carcinoma anal canal.**
   Chemo (5-FU/Mitomycin) + Radiation is the standard treatment. Surgery reserved for failures of chemo/XRT. Don't get goaded into choosing an operation just because it's a surgery test.
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4. **Fuel source colonocyte.**
   Butyrate is the preferential source of fuel for colonocytes. Usually derived from bacterial fermentation with the colon.

5. **Rx carcinoid tumor rectum.**
   Transanal excision should be the primary mgmt. Radical resection (APR/LAR) should be reserved for large tumor that don't fit the criteria outlined above.

6. **Rx colon in FAP.**
   Total abd colectomy + mucosal proctectomy + pouch.

**Upper GI**

1. **Rx MALT tumor (MALT lymphoma) stomach.** (this is a board favorite)
   These are treated initially with eradication of h. pylori. If that fails, then chemo and/or XRT. If that fails, then surgery. Exception is those presenting with sxs of GOO, then surgery best initial tx.

2. **Rx Gallbladder cancer (adenocA gallbladder).**
   If T1a only (does not invade muscle layer, confined only to lamina propria), then cholecystectomy alone appropriate. Anything else, resection of gallbladder, liver fossa (wedge resection segment 4/5 liver) and regional node dissection. Consider resection of CBD if cystic duct involved.

   Remember types and (tx):
   * Type I: Most common variety involving sacular or fusiform dilatation of a portion or entire common bile duct (CBD) with normal intrahepatic duct.
   * Type II: Isolated diverticulum protruding from the CBD.
   * Type III or Choledochocele: Arise from dilatation of duodenal portion of CBD or where pancreatic duct meets.
   * Type IV: Dilatation of both intrahepatic and extrahepatic biliary duct.
   * Type V or Caroli's disease: Cystic dilatation of intra hepatic biliary ducts.

   Rx: only for types 1, 2 and 4. Rx with cholecystectomy and resection of CBD along with cyst and roux-en-y hepaticojejunostomy. Add appropriate hepatectomy for type IV. Type 3 warrants no rx. Type 5 rx with liver transplant if diffuse.

4. **Rx CBD injury lap chole (2006 {22 wrong} and 2007)**
   This must have been way unclear. No way everyone gets this wrong. Just to review.
   Minor injury recognized intra-op, repair primarily, +/- stent. Major injury recognized intra-op or injury recognized post-op, usually require roux-en-y hepaticojejunostomy. Biggest pitfall here I can see is pick hepatico/choledochoduodenostomy. This is never feasible in this setting.
5. **Rx duodenal obstruction in Crohn’s** (2006; 17 wrong)  
   Assuming failed medical mgmt, rx should be by gastrojejunalostomy in most cases. Unlike rest of small bowel, stricturoplasty likely difficult in this location unless very short segment. Resection usually not possible short of Whipple. If stricture in a distal location, duodenojejunalostomy (side-to-side) might be best option.

**Spleen**

1. **Rx gastric varices with splenic vein thrombosis.** (2006; 4 wrong answers)  
   This question can take several forms. Sometimes asking for where you will see varices with SV thrombosis, sometimes asking for rx. Remember this is usually assoc with acute pancreatitis. Causes isolated gastric varices. THINK SURGERY. Rx is splenectomy. In unstable/sick patient, embolization of splenic artery may be effective, but usually not tx of choice for this one.

2. **Timing of platelet transfusion in splenectomy for ITP** (2006; 9 wrong answers)  
   Classic teaching is to give after splenic artery ligated and then only when needed. They probably try and paint a picture of a very low plt count and it’s tempting to give preop. If clinical trouble with bleeding preop, then give at time of incision. In reality, these patients usually don’t have too much trouble with bleeding and you rarely need to transfuse.

3. **Myeloprolif disorder benefiting from splenectomy.** (2006; 18 wrong answers)  
   Myelofibrosis is the one we end up doing this for. Patients can get extramedullary hematopoiesis in spleen. This condition also assoc with increased incidence of splenic/portal vein thrombosis postop.

4. **Patient highest risk for OPSI** (2007; 19 wrong answers)  
   Not sure how question read. Probably was a little funny. Probably took picture of someone with sepsis from strep pneumonia, neisseria meningitidis or h. flu and who was most likely to get it. Might have been given a choice of someone who had sickle cell, remember most of them auto-splenectomize by early age. Remember too that kids (<4yrs) are at highest risk post-splenectomy.

   One addition to prior question. Risk of OPSI after splenectomy. Apparently, splenectomy done for thalassemia carries an increased risk.

**Esophagus**

1. **Rx esophageal leiomyoma.** (2006; 9 wrong)  
   Enucleation. These have a characteristic appearance by UGI of a smooth intrusion into the lumen of the esophagus. If they show you a barium swallow pic, it’s probably either this or achalasia. Old teaching of not doing biopsy probably doesn’t apply anymore because GIST is in differential and would rx differently. But surgically, don’t need to resect esophagus, just enucleate lesion from wall.
2. **Diag test Boerhaave’s (? year) and Rx esophageal perforation.** (2006; 21 wrong….this was the winner)

   Classis hx is chest pain/fever/resp distress after emesis resulting from large meal. Diag usually suspected by lt. pleural effusion on CXR and confirmatory test is esophagram with H2O soluble contrast. If this isn’t a choice, then orally contrasted CT.

   Rx: if early, then primary repair(left thoractoomy) +/- g-tube and j-tube. If late, then consider spit fistula and g-tube/j-tube and delayed restoration of GI continuity. If deathly ill, then just mediastinal washout/drainage alone, with more definitive surgery after recovery.

3. **Rx Barrett’s esoph/high-grade dysplasia.**

   Esophagectomy. Have ~10% incidence of associated malignancy with high-grade dysplasia. In real life, there are a couple of other potential endoscopic options that are often pursued, but on this test resection best tx. For non-high grade Barrett’s, endoscopic surveillance + rx of reflux (surgical or medical, no clear answer) is appropriate.

4. **Indications neoadjuvant chemo/xrt GE junction cancer.**

   Preop chemo/xrt should be done for any T3/4 or N + (determined by EUS) tumor. T1 or T2 generally surgery first. Staging for these tumors should also include PET/CT.

5. **Art blood supply gastric tube.** (2006; 11 wrong…..come on!!)

   This would be for reconstruction after esophagectomy. Conduit based on **right gastroepiploic artery**.

**Lower GI**

1. **Charact Peutz-jeghers syndrome.**

   Autosomal dominant. Associated with colonic polyps thought to primarily represent hamartomas and mucocutaneous hyperpigmentation (most often oral). No significant increased risk of cancer in these polyps, so prophylactic colectomy not warranted, just endoscopic removal. Syndrome is associated with unusual sex cord tumors in women and Sertoli cell tumors in men.

2. **Cond assoc with family hx cecal cancer** (2006)

   See above regarding HNPCC. This probably asked something like a 35 yo with cecal cancer, what else are they at risk for or what genetic abnormality are you looking for or what familial syndrome is associated.

3. **Characteristic Lynch syndrome (HNPCC).** (2006; 8 wrong)

   Hereditary Non Polyposis Colon Cancer (HNPCC) is autosomal dominant with primary feature of right-sided colon cancers without polyposis. Altered genes are MLH1, MSH2, MSH6 and PMS2 (no jokes….). Primary function of these genes is in DNA mismatch repair.
In women, other primary risk is endometrial cancer. Other at risk organs include stomach, sm. bowel, urinary tract, ovary, pancreas and brain.

Amsterdam Criteria of diagnosis of HNPCC in a family: 3 or more family members with HNPCC associated cancer, one of whom is 1st degree relative of others, 2 generations, at least 1 of them diagnosed at age < 50 y.o. (Although these aren’t strictly used anymore, still might be on test)

4. **Rx adeno ca rectum** (2006; 6 wrong)
   Staging is by EUS and CT. EUS most sensitive for T and N stage. CT used for radial tumor eval (local invasion) and distant disease. Preop chemo/RT for T3/4 or N+ followed by surgery. T1/2 managed by surgery primarily. Need 2cm distal margin in rectal cancer, if can’t be achieved then need APR instead of LAR.

**Thyroid**

1. **Indications for thyroidectomy in hyperthyroidism** (2005; 14 wrong) and **Rx** hyperthyroidism in pregnancy (2008; 9 wrong)

Most patients with hyperthyroidism are managed by medical treatment (anti-thyroid meds [PTU (prevents production of thyroid hormone by gland and prevents peripheral conversion of T4 to T3); most serious side effect is agranulocytosis; or Methimazole (only prevents production of thyroid hormone)] which has a high relapse rate and should be continued for at least 6 months before trying to stop OR radioactive iodine (RAI). Surgery usually not the tx of choice, but is always an option.

  Indications for surgery over other options. 1. Pregnant patient. Beta-block and then operate. 2. Failed medical rx. 3. Hyperthyroidism secondary to an autonomously functioning thyroid nodule (Plummer’s syndrome) is best tx with surgery and not RAI. 4. Large goiter with compressive symptoms.

2. **Rx Hurthle cell/follicular neoplasm.** (2006; 12 wrong)
   Tx of Hurthle cell tumors of the thyroid is the same as for follicular neoplasms. They are difficult to diagnose by FNA, so “follicular neoplasm” on FNA = surgery. Like FNA, frozen section also difficult to distinguish carcinoma on. Surgery is always a lobectomy as only ~20%, at most, of these will be carcinoma, just like follicular. If carcinoma identified on permanent section, then completion lobectomy.

3. **Prognostic factors in thyroid cancer** (2007; 14 wrong) Remember the acronym AGES: 
   Age (women < 50, men < 40) Grade (poorly differentiated = bad) Extent of disease (extracapsular extension or regional LN disease = bad) Size ( > 4cm = bad) and Sex (women better than men)

4. **Preparation for I-131 scan** (2007; 7 wrong)
   Remember that they have to be hypothyroid for the scan. So need to stop thyroid hormone before scan [(Synthoid/levothyroxin = T4; stop 6 weeks prior) or (cytomel/liothyronine = T3; stop 3 weeks prior)]
5. **Sequence of rx in MEN.** (2007; 5 wrong)
   Presumably this is for type 1 with hypercalcemia and a gastrinoma. Rx the parathyroids first then do gastrinoma. School of thought is that once you correct the hypercalcemia, it makes control of acid hypersecretion easier and makes rx gastrinoma purely elective.

6. **Anat ext branch sup laryngeal n. & Effect sup laryngeal n. injury** (2006; 10 wrng)
   Sup laryngeal is a branch of the vagus. Divides into int and ext branch. Ext branch descends along inf constrictors and travels along with sup thyroid artery before entering and innervating the cricothyroid muscle (only laryngeal muscle innervated by this nerve). Injury causes weakness of voice strength and relatively easy fatigue of voice and loss of voice quality at higher ranges.

7. **Rx recurrent laryngeal n. injury** (2007; 9 wrong)
   If recognized immediately, then repair nerve primarily. Recognized postop, then “medialization” of the cords, usually by injection directly into cords, can allow improved phonation and optimized glottic closure to prevent aspiration.

**Parathyroid**

1. **Dx parathyroid carcinoma** (2005; 10 wrong) and **rx parathyroid carcinoma** (2008; 4 wrong)
   Parathyroid carcinoma is rare. Often presents same way as parathyroid adenoma with signs/sxs hypercalcemia. Diagnosis is suspected with very high calcium (>15mg/dl) or a palpable neck mass in the setting of primary hyperPTH. Surgical findings also suggest carcinoma as these will usually invade surrounding structures as opposed to parathyroid adenoma that “shell out”. Tx is en block resection of gland with surrounding/attached structures. In the test question setting, that usually involved parathyroidectomy + ipsilateral thyroid lobectomy.

2. **Rx missing parathyroid in 4 gland hyperplasia** (2006; 10 wrng and 2007; 15 wrong)
   4 gland hyperplasia can be treated by either 4 gland resection and forearm re-implant (don’t reimplant in SCM as some books I have seen suggest, this is only for the incidentally injured parathyroid at time of thyroidectomy) or 3.5 gland resection. Either option ok.
   If you are presented with scenario of finding 3 and 1 is missing then the following maneuvers are in order. 1. Open carotid sheath and look there. 2. Search the tracheoesophageal groove. 3. Transcervical thymectomy. 4. Ipsilateral thyroid lobectomy. Once all of the above have been done, then you close and see where you land. If you can only find 3 glands, then you don’t reimplant, but you should bank that tissue in the circumstance that you devascularized the “missing” gland or might find it in the thyroid on permanent section.
   In reality, if you have intra-op PTH available, then you can use this to help. After all of the above maneuvers done, if PTH drops appropriately, it suggests you got the “missing” gland and you should re-implant in that case.
3. **Interpretation intra-op PTH assay** (2007; 6 wrong)
   50% drop in PTH 10-15 minutes after gland resected suggests successful treatment. Ideally, PTH drawn from periph site to avoid trouble with potential for high concentration if drawn from neck vein.

4. **Ca associated with highest risk paraneoplastic hypercalcemia** (2006; 15 wrong)
   Most common tumor to cause paraneoplastic syndrome is small cell lung cancer. Distinguish from parathyroid disease by normal/decreased PTH most commonly. Primary rx is with osteoclast inhibitor, usually bisphosponate (pomidronate, etidronate, )

5. **Initial rx hypercalcemia** (2005; 5 wrong)
   Hydration with saline and diuretics is initial strategy for hypercalcemia from any cause.

**Misc**

1. **Site of effect of motilin** (2006; 15 wrong)
   Primary effect is in upper small intestine. Released when fasting and assoc with iniation of MMC. This is also the way that Erythromycin works to stimulate the GI tract, by binding to the motilin receptor.

2. **Zinc deficiency in TPN** (2007; 11 wrong)
   Seems to be on there every other year. If they ask a question relating to TPN and vitamin deficiency, zinc is the answer. Zinc deficiency assoc with periorbital rash, darkened skin creases, neuritis and chronic, non-healing wounds.

3. **Respiratory quotient of fat in TPN** (2006; 7 wrong and 2007; 9 wrong) Always seems to be an RQ question. One of the things you have to memorize.

RQ for is as follows:

   Fat= 0.7

   Protein= 0.8

   Carb= 1.0

   Post-gustatory sweating (Frey’s syndrome) is assoc with parotidectomy. Patients get perspiration/flushing overlying site of parotid gland. Auriculotemporal nerve is culprit.
Symptomatic rx only and usually managed with a roll-on anti-perspirant.

5. **Posterior boundary femoral canal** (2007; 10 wrong)
   
   Femoral triangle bounded by following:
   
   Superior-inguinal ligament
   
   Medial-lacunar ligament
   
   Lat-femoral vein
   
   Post (floor)-iliacus & psoas tendons and fascia of pectineus

6. **Dx test testicular mass** (2007; 10 wrong) **Rx testicular mass** (2005; 6 wrong)
   
   First tests should be ultrasound and beta-HCG and AFP. However, orchiectomy is necessary for solid mass, almost certainly what they will give you and where they are going. This should be an inguinal orchiectomy, not trans-scrotal.

7. **Nerve injury ant dislocation humerus** (2006; 19 wrong)
   
   Can get compression of the axillary nerve. Clinically, they will hold arm slightly abducted and will be unable to lower it. Rx is reduction of dislocation.

8. **Nerve injury humerus fracture** (2005; 7 wrong)
   
   Radial nerve injury most commonly associate with “spiral” fracture of humerus (classic test question) as well as with supra and intercondylar fractures. Present with inability to extend wrist and MCP joints.

9. **Dx paralysis common peroneal nerve**. (2007; 12 wrong)
   
   Nerve lies laterally below the knee and wraps around the head of the fibula. Can be injured with trauma to fibular head or from compression of the lateral aspect of the knee joint. Result is foot drop with diminished dorsiflexion of the ankle.

10. **Dx test solitary neck mass** (2006; 12 wrong)
    
    FNA test of choice. Would do in office at initial visit. Don’t need to order imaging first.

    
    Arises from aorta and passes posterior to the IVC/renal vein as it courses to the kidney.

    
    On test almost every year. We universally get it wrong.
    
    The Goldman Index is the best recognized attempt at correlating cardiac sx's with
periop complications. It assigns a numeric grade to multiple risk factors. They range from 3-11 points, depending on the symptom. The worst prognostic sx are:
- 11-uncompensated CHF (evidenced by elevated CVP/JVD/S3 gallop)
- 10-recent MI within 6 months)
- 7-> 5 PVC/min on EKG
- 7-non-sinus rhythm or PAC’s on EKG

Trick here is that intuitively, we pass by this one quickly and answer MI, when in reality uncompensated CHF is the bigger risk factor.

13. Charact/Management/Diag of GIST (several years)
Malignant soft tissue tumors in sarcoma family. Characterized by mutation in c-KIT (95%) and in Platelet-derived growth factor (PDGF). Gleevec is targeted inhibitor aimed at c-KIT. Mutation is what distinguishes them from leiomyoma (benign) and leiomyosarcoma. Remember, they don’t go to nodes since they are in sarcoma family. Go to liver, lungs and peritoneum.
Rx is surgical primarily. Don’t need huge margins. So, can wedge out in stomach as opposed to anatomic resection you would do for adenocarcinoma of stomach. Again, don’t need to evaluate/resect nodes, so mesenteric resection can be limited in small bowel.
Risk factors for recurrence are size (>5cm) and grade (>5 mitoses/high power field).
Categorized into low (<5cm and low grade), intermediate (<5cm/high grade or 5-10cm/low grade) and high risk categories (>5cm/high grade or >10cm). Int and high risk get adjuvant Gleevec for 1 year after resection. Low risk get surgery only.
Trend with these is toward organ preservation, so in practice, with big tumors involving multiple organs, we will give Gleevec to shrink tumor (>90% will respond) and then operate, with hope of doing less surgery. Probably not germane to the test though.