Treatment of Gallbladder Polyps

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Case

61 yo M w/ h/o Hep C presented for evaluation of asymptomatic gallbladder polyps X 3 found on ultrasound

PM/SH: HTN, prostate ca s/p prostatectomy (2011), depression
Meds: Amlodipine, HCTZ
Physical Exam
- AVSS
- No jaundice
- Abd: soft, nt/nd, no masses
Labs wnl
U/S
- (3/13) 3 echogenic polypoid foci, largest 0.7 cm X 0.4 cm X 0.6 cm \(\rightarrow\) u/s surveillance q3 months
- (2/14) Largest polyp increased in size \(\rightarrow\) 1.2 cm X 0.7 cm X 0.9 cm
Case

- Laparoscopic cholecystectomy
- Discharged DOS

Pathology

- 0.2 cm sessile polyp in neck, 0.3 cm verrucous and sessile polyp in body
- Chronic cholecystitis and polypoid cholesterosis
Epidemiology

- Commonly incidental finding on ultrasound
- Incidence 1.5-4.5% of gallbladders assessed by ultrasound
- Found in 2-12% cholecystectomy specimens
- All polyps ≠ cancer
- Predominantly benign
- Malignancy detected in 3-8%*
Clinical Features

• Asymptomatic
• Biliary pain
• Pancreatitis – detached polypoid cholesterolosis?
• Chronic dyspeptic abdominal pain
Frequency of Benign Mucosal Polyps

- Cholesterol polyps: 60%
- Adenomyomas: 25%
- Adenomas: 4%
- Inflammatory polyps: 10%
- Miscellaneous: 1%

Benign Polyps – Non-Neoplastic

Cholesterol polyps (cholesterolosis)

- Most common
- Accumulation of lipids in the mucosa
- “strawberry gallbladder”
Benign Polyps – Neoplastic

Adenomyomas (adenomyomatosis)

- Overgrowth of mucosa, intramural diverticula
- ?? Premalignant: segmental vs fundic and diffuse types
- Seen with cholelithiasis
Benign Polyps – Neoplastic

Adenomas

• Benign epithelial tumors

• Likely premalignant
  – Foci of carcinoma found
  – 6% malignant if 1 cm
  – 37% if 1-2 cm
Malignant lesions

- Adenocarcinoma (80%)*
- Squamous cell cancer
- Mucinous cystadenomas
- Adenoacanthomas
Conventional transabdominal ultrasound

- Most commonly used
- False positive 6-43%
- 36-83% lesions <5 mm → no mass on path
- Characteristics of malignancy:
  - Size
  - Wall thickening > 5 mm
  - Gallstones
  - Liver surface invasion
Diagnosis and Imaging

• **EUS**
  – More sensitive and specific than transabdominal u/s (92% vs 54%, 88% vs 54%)
  – Role not well defined for polyps <1cm

• **CT**
  – Similar to EUS but also low sensitivity to small polyps
  – Staging if malignant
Diagnosis and Imaging

- **PET**
  - Limited use
  - If suspicious for malignancy in 1-2 cm polyps
  - If negative, still cannot exclude malignancy

- **Laboratory studies**
  - **CEA** > 4 ng/mL 93% specific and 50% sensitive for GBC
  - **CA 19-9** 79% sensitive and specific for GBC
Goals of Treatment

- Relief of symptoms
- Prevent malignant transformation
- Treatment if malignancy present
Level of Evidence for Surgical Intervention On Gallbladder Polyps

• **Level I evidence**: none
  – Cochrane review: no randomized or quasirandomized controlled trials

• **Level II evidence**: observational studies
  – Incidence of malignant transformation
88-100% of malignant polyps are > 1 cm
85-94% of benign polyps are < 1 cm*

→ Cholecystectomy for all polyps > 1 cm

Out of 16 malignant polyps, early stage all <1.8 cm**

→ Treat polyps > 1.8 cm as gallbladder cancer

*Terzi et al, Surgery 2000; 127:622-7
**Kubota et al, Surgery 1995; 117(5) 481-7
Polyps < 1 cm

Polyps $\leq 0.5$ cm rarely increase in size
→ Follow at 6-12 months, if stable stop

Polyps 0.6-0.9 cm:
• $\sim 7.4\%$ polyps were malignant*
• transformation seen even after 4 years of observation*
→ Resection vs. extended serial imaging

*Park et al, J Gastroenterol Hepatol 2009;24:219-22
High Risk Groups

- Concurrent gallstones
  - Correlated with gallbladder cancer (RR=4.9)
  - Cholecystectomy for any size polyp
- Primary sclerosing cholangitis
  - Higher rate of malignancy → 57%
  - Cholecystectomy for any size
- Age >60
- Sessile
Figure 5  Treatment algorithm for polypoid lesions of the gallbladder
Cholecystectomy for GBP

• Surgical approach
  – Laparoscopic
  – Open: oncologic resection
  – No worse outcome if initial lap w/ delayed definitive operation
  – 20-30% incidental cholecystotomy
  – Low threshold for conversion to open surgery

• Readiness to perform definitive therapy

• Size and location of polyp
  – If size >1.8 cm—preop staging
  – Extended cholecystectomy
Gallbladder Cancer

- Dismal outcome
- Spread via lymphatics, blood, shedding into peritoneal cavity, local invasion
- Preop staging: CT or MR abd/pelvis, CXR, PET (?)
<table>
<thead>
<tr>
<th>Primary tumor (T)</th>
<th></th>
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<tbody>
<tr>
<td>Tis</td>
<td>Carcinoma in situ</td>
</tr>
<tr>
<td>T1</td>
<td>Tumor invades lamina propria (T1a) or muscular layer (T1b)</td>
</tr>
<tr>
<td>T2</td>
<td>Tumor invades perimuscular connective tissue</td>
</tr>
<tr>
<td>T3</td>
<td>Tumor perforates serosa and/or invades the liver and/or one adjacent structure</td>
</tr>
<tr>
<td>T4*</td>
<td>Tumor invades main portal vein or hepatic artery or invades two or more extrahepatic structures</td>
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<thead>
<tr>
<th>Regional lymph nodes (N)</th>
<th></th>
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<tbody>
<tr>
<td>N0</td>
<td>No regional lymph node metastasis</td>
</tr>
<tr>
<td>N1</td>
<td>Metastases to nodes along the cystic duct, common bile duct, hepatic artery, and/or portal vein</td>
</tr>
<tr>
<td>N2*†</td>
<td>Metastases to periaortic, pericaval, superior mesenteric artery, and/or celiac artery lymph nodes</td>
</tr>
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GBC Incidentally Found on Final Path

• Margin -, Tis and T1a (invades lamina propria not muscular layer) tumors
  – No further resection

• Margin +, T1b-T3
  – Complete staging
  – Extended cholecystectomy
  – Liver resection for 2 cm margin or segments IVb/V and lymph node dissection of the hepatoduodenal ligament
Conclusions

• Most gallbladder polyps are benign
• Several factors contribute to the likelihood of malignancy: size, imaging, PSC, gallstones
• Polyps > 1 cm should undergo cholecystectomy
• Polyps >1.8 cm should be treated as gallbladder cancer
• Management of 0.6-0.9 cm polyps more controversial
• Strong evidence lacking on natural history of gallbladder polyps and effect on cholecystectomy
A 22 yo woman is found to have an incidental 3 cm gallbladder polyp on abdominal ultrasound. What would you recommend for this patient?

a. Follow up ultrasound in 6 months
b. EUS
c. CA 19-9, CA-125 serum levels
d. ERCP
e. Lap cholecystectomy
What If’s…

• Lap chole done, intraop frozen + for GBC,
  – T stage unclear—close, follow up final path
  – T stage > 1a – proceed to definitive therapy

• During lap chole, GBC is suspected but not known prior to surgery
  – Laparoscopic staging exam, close ➔ stage, definitive resection if appropriate