Gallbladder Disease
Who Needs Surgery?

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- Cholelithiasis
- Biliary Dyskinesia
- Porcelain Gallbladder
- Polyps
- Adenomyomatosis
Gallbladder Disease
Cholelithiasis

Epidemiology
- US – 12% have cholelithiasis
- History of 1st degree relative – doubles risk
- 10-20% develop symptoms

Imaging
- Ultrasound: 98% Specificity / 95% Sensitivity
- HIDA Scan – Waste of money if symptomatic

Gallbladder Disease
Cholelithiasis

Treatment
- Asymptomatic: Wait for symptoms
  - Consider if stone > 3 cm
- Symptomatic: Laparoscopic Cholecystectomy
  - Pregnant – now what?!

Gallbladder Disease
Cholelithiasis

- Data from 42 studies totaling 277 lap choles in pregnancy
- Quality Pregnancy Week (QPW): a week of pregnancy where the mother is free from all pathophysiologic states that may incur morbidity
- Conclusion
  - Lap chole better than non-operative management
Gallbladder Disease

Biliary Dyskinesia

- RUQ symptoms / HIDA with EF < 40%
- Surgical Therapy for Biliary Dyskinesia:
  - A Meta-Analysis and Review of the Literature
    - 187 articles – 5 met inclusion criteria
    - Meta-analysis
<table>
<thead>
<tr>
<th>Study</th>
<th>Surgery</th>
<th>Nonoperative</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>% Relief</td>
<td>Number</td>
</tr>
<tr>
<td>Misra</td>
<td>88</td>
<td>97%</td>
<td>29</td>
</tr>
<tr>
<td>Goncalves</td>
<td>44</td>
<td>100%</td>
<td>24</td>
</tr>
<tr>
<td>Khosla</td>
<td>30</td>
<td>93%</td>
<td>5</td>
</tr>
<tr>
<td>Yost</td>
<td>27</td>
<td>96%</td>
<td>6</td>
</tr>
<tr>
<td>Yap</td>
<td>11</td>
<td>100%</td>
<td>10</td>
</tr>
<tr>
<td>Pooled</td>
<td>200</td>
<td>98%</td>
<td>74</td>
</tr>
</tbody>
</table>
"Patients undergoing surgical therapy for biliary dyskinesia were 2.79 times more likely to have symptom relief versus nonoperative therapy."

- RUQ symptoms / HIDA with EF > 80%
- Biliary Hyperkinesia
- 2010 – 2016: 23 patients
  - 21/23 (91.3%) pain improved/resolved
  - 19/21 (90.5%) path: chronic cholecystitis
- Biliary Hyperkinesia a growing consideration
Polypoid lesions: 3 – 6% of GB on US

**Size**

<table>
<thead>
<tr>
<th>Size</th>
<th>Cancer Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 1.0 cm</td>
<td>0 – 5%</td>
</tr>
<tr>
<td>1.0 – 1.5 cm</td>
<td>11 – 12%</td>
</tr>
<tr>
<td>&gt; 1.5 cm</td>
<td>46 – 70%</td>
</tr>
</tbody>
</table>

**Number**

- 80 – 100% Malignant lesions are solitary

Polypoid lesions – Lap cholecystectomy if:

- Size: > 1.0 cm
- Shape: Sessile
- "Rapidly Growing" especially if solitary nodule
**Gallbladder Disease**

**Porcelain Gallbladder**

- 1831 Fabre – First Described
- 1929 Florcken – "Porcelain Gallbladder"
  - Brittle gallbladder with bluish discoloration from extensive calcifications in the wall
- 1931 First Large series – 24 / 5,864 GB
  - Cancer prevalence not reported

- 1959 Cornell and Clarke – USA
  - 2/16 Porcelain GB with CA (12.5%)
- 1962 Etala – Argentina
  - 16/26 Porcelain GB with CA (62%)
- 1989 Shimizu – Japan
  - 8/30 Porcelain GB with CA (25%)
Gallbladder Disease
Porcelain Gallbladder

- **1959** Cornell and Clarke – USA
  - 2/16 Porcelain GB with CA (**12.5%**)
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Gallbladder Disease
Porcelain Gallbladder

- **1991** NIH Consensus Statement
  - "calcified (porcelain gallbladder)...should be removed because of its frequent association with gallbladder cancer."

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Gallbladder Disease
Porcelain Gallbladder

- **2000** Stephen and Berger – USA
  - 1962-1999
  - 25,900 GB analyzed at MGH
  - 150 GB CA and 44 Calcified GB
  - 2/44 Calcified GB had CA (**5%**)

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Gallbladder Disease
Porcelain Gallbladder

- Diffuse Intramural Calcifications ("Porcelain GB")
  - 0/17 (0%) with cancer
- Focal Mucosal Calcium Deposits
  - 2/27 (7.4%) with cancer
- Summary: Lap Chole

Gallbladder Disease
Adenomyomatosis

- Histologic diagnosis: minute invaginations of mucosa form cyst-like structures
  - Rokitansky-Aschoff sinuses
- Diagnosis suggested by
  - US: focal thickening of gallbladder wall
  - MRI: homogenous enhancement
Gallbladder Disease

Adenomyomatosis
- Magnitude of risk for gallbladder cancer not clearly established
- Cholecystectomy should be considered if surgical risk not deemed to be substantial

Gallbladder Disease

Who Needs Surgery?
- Symptoms
  - Cholelithiasis
  - Biliary Dyskinesia/(Hyperkinesia)
- Cancer Risk
  - Polyps
  - Calcified (Porcelain) Gallbladder
  - Adenomyomatosis

Suggested Readings
Just a friendly reminder - about 20% of you are in preop.