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Treatment of Gallbladder Polyps

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5/8/2014

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

Case

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 → u/s surveillance q3 months
- (2/14) Largest polyp increased in size → 1.2 cm X 0.7 cm X 0.9 cm

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Case

- Laparoscopic cholecystectomy
- Discharged DOS

Pathology

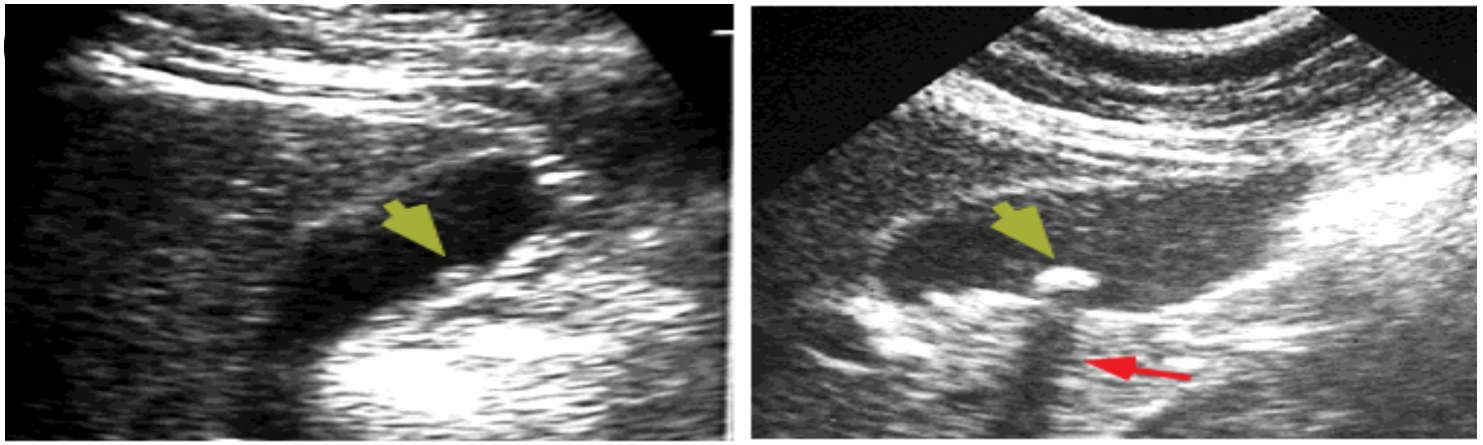
- 0.2 cm sessile polyp in neck, 0.3 cm verrucous and sessile polyp in body
- Chronic cholecystitis and polypoid cholesterosis

Epidemiology

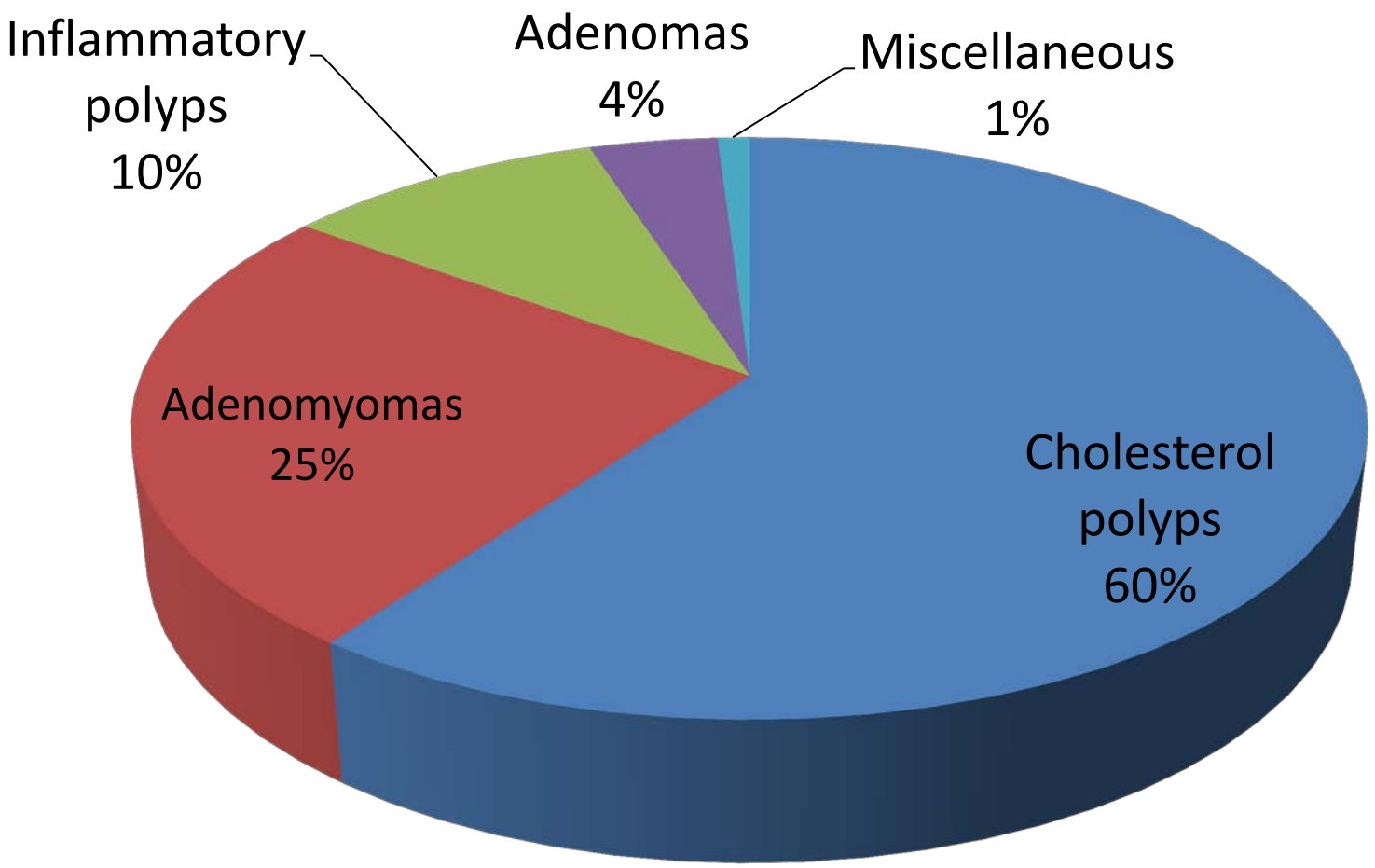
- Commonly incidental finding on ultrasound
- Incidence 1.5-4.5% of gallbladders assessed by ultrasound
- Found in 2-12% cholecystectomy specimens
- All polyps ≠ cancer
- Predominantly benign
- Malignancy detected in 3-8%*

Clinical Features

- Asymptomatic
- Biliary pain
- Pancreatitis – detached polypoid cholesterolosis?
- Chronic dyspeptic abdominal pain



Frequency of Benign Mucosal Polyps

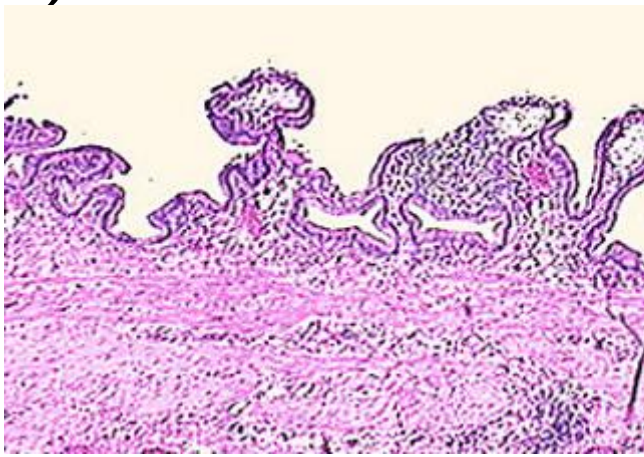


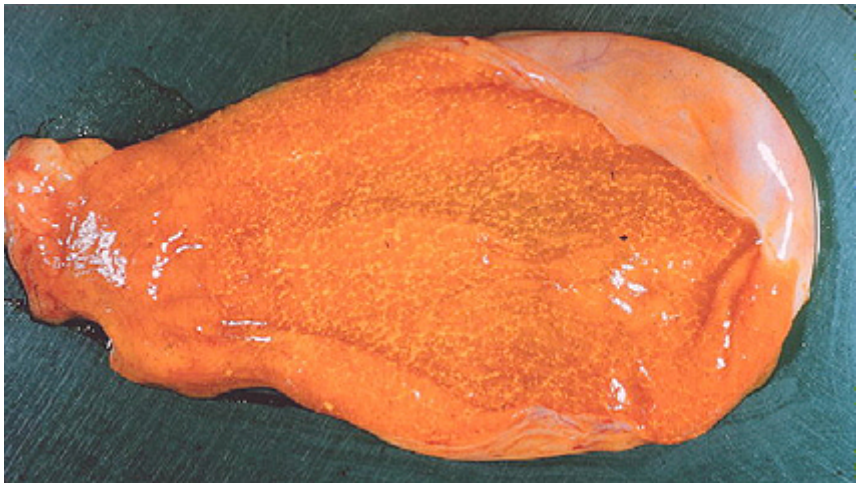
Data from: Weedon, D. Benign mucosal polyps. In pathology of the gallbladder, Mason, New York 1984. p.195. and Laitio, M, Pathol Res Pract 1983; 178:57.

Benign Polyps – Non-Neoplastic

Cholesterol polyps (cholesterolosis)

- Most common
- Accumulation of lipids in the mucosa
- “strawberry gallbladder”

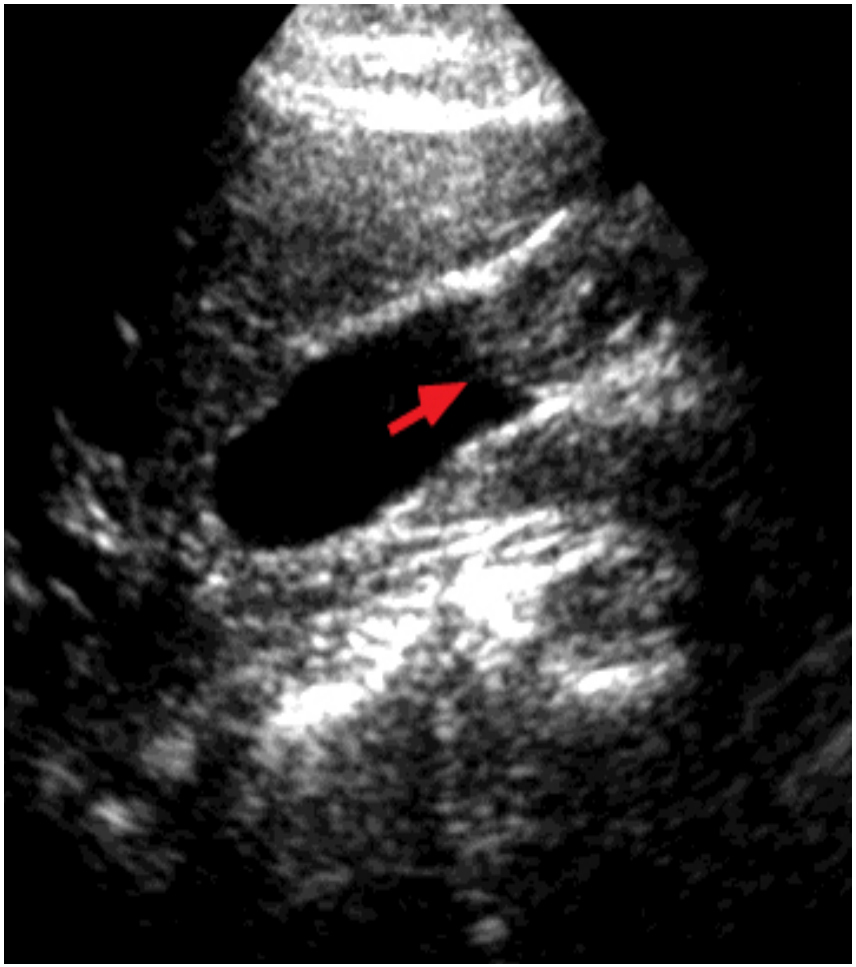




Benign Polyps – Neoplastic

Adenomyomas (adenomyomatosis)

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



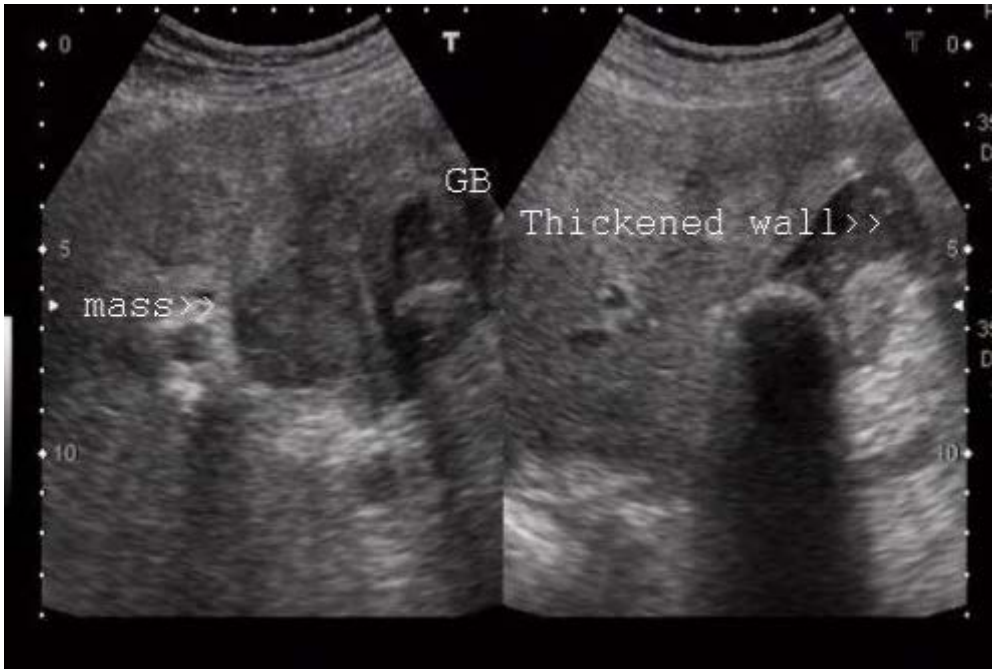
Benign Polyps – Neoplastic

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
- Muncinous cystadeomas
- Adenoacanthomas



Diagnosis and Imaging

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

Treatment—size criteria

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 ≤0.5 cm rarely increase in size

→Follow at 6-12 months, if stable stop

Polyps 0.6-0.9 cm:

- ~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

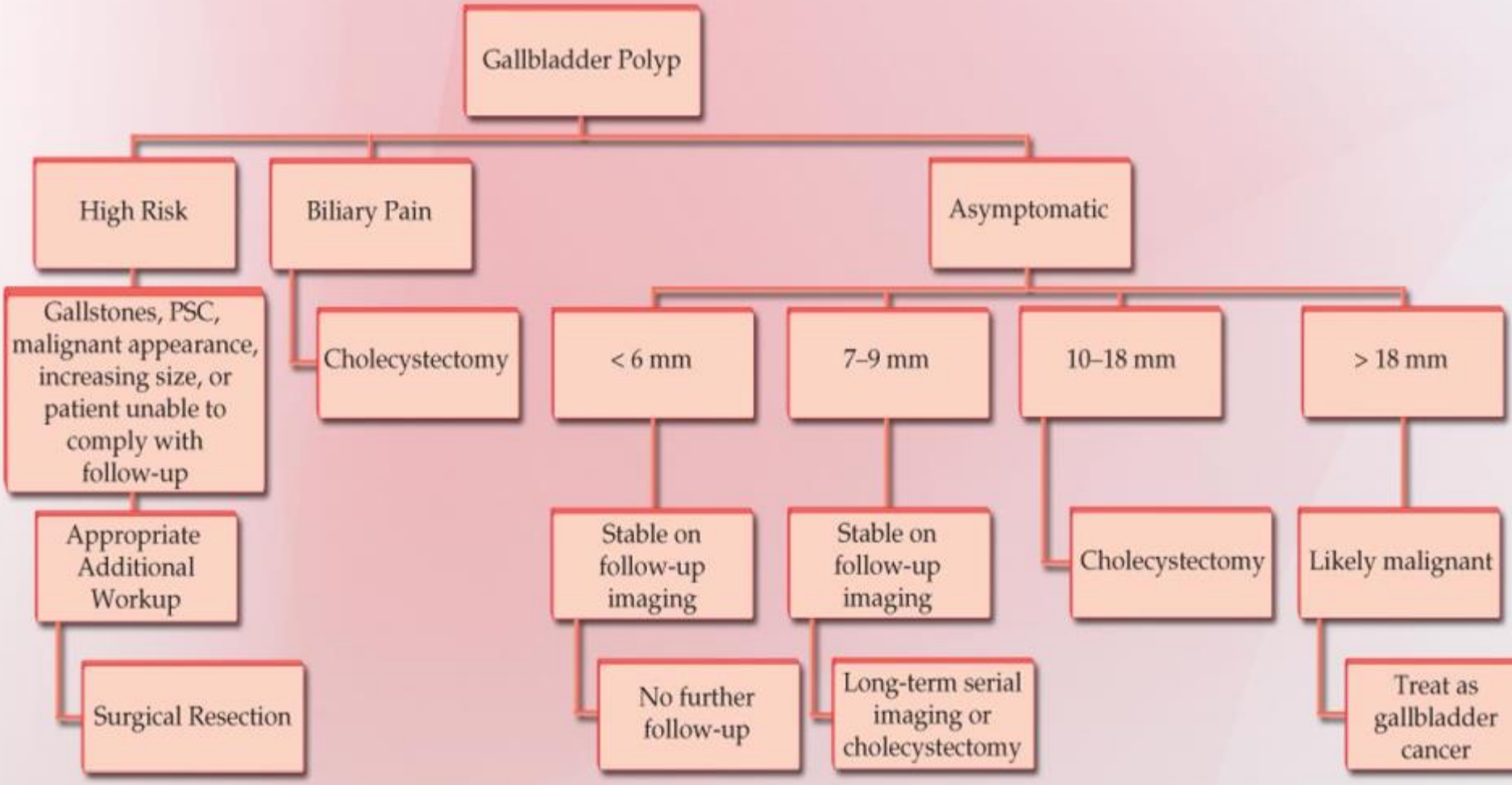


Figure 5 Treatment algorithm for polypoid lesions of the gallbladder

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

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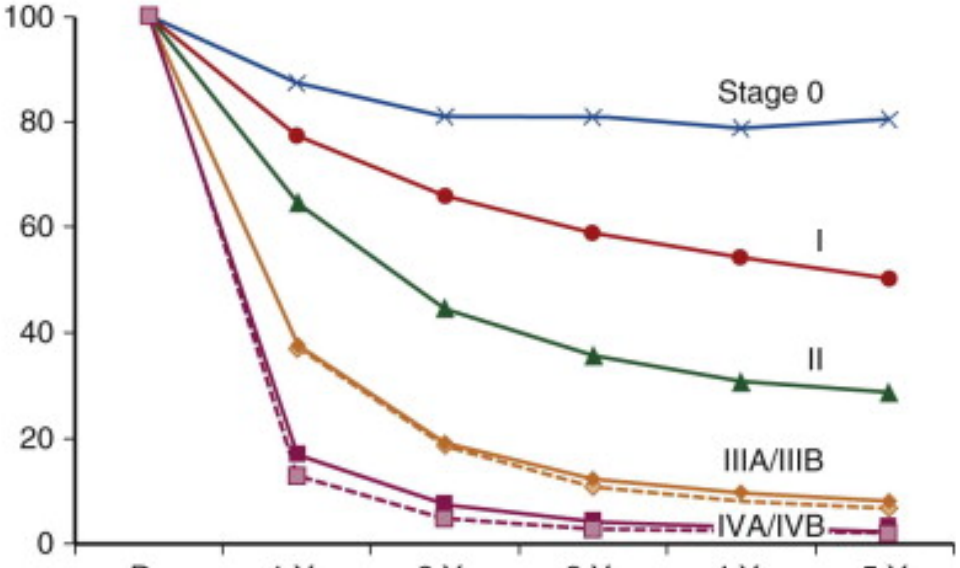
Gallbladder Cancer

- Dismal outcome
- Spread via lymphatics, blood, shedding into peritoneal cavity, local invasion
- Preop staging: CT or MR abd/pelvis, CXR, PET (?)



Stage	Survival				
0	87	81	81	81	81
I	77	66	59	54	50
II	65	45	36	32	29
IIIA	38	19	12	10	8
IIIB	37	19	11	9	7
IVA	17	7	4	3	3
IVB	13	5	3	2	2

Primary tumor (T)	
Tis	Carcinoma in situ
T1	Tumor invades lamina propria (T1a) or muscular layer (T1b)
T2	Tumor invades perimuscular connective tissue
T3	Tumor perforates serosa and/or invades the liver and/or one adjacent structure
T4*	Tumor invades main portal vein or hepatic artery or invades two or more extrahepatic structures
Regional lymph nodes (N)	
N0	No regional lymph node metastasis
N1	Metastases to nodes along the cystic duct, common bile duct, hepatic artery, and/or portal vein
N2†	Metastases to periaortic, pericaval, superior mesenteric artery, and/or celiac artery lymph nodes

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

Question

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