Biliary Tumors
Cholangiocarcinoma and Cancer of the Gall Bladder
Larry Pennington, MD
Cholangiocarcinoma

- A slow growing malignancy of the biliary tract which tend to infiltrate locally and metastasize late.

- Gall Bladder cancer = 6,900/yr
- Bile duct cancer = 3,000/yr
- Hepatocellular Ca = 15,000/yr
Cholangiocarcinoma

- 90% are extra-hepatic
- M = F
- 60’s and 70’s
- Highest incidence in Japan, Israel, and Native Americans
- Increased 3 fold in the last 30yrs in the USA
- M/F=3/2
## Cholangiocarcinoma

### Etiology

<table>
<thead>
<tr>
<th>Ulcerative Colitis</th>
<th>Thorotrast Exposure</th>
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</thead>
<tbody>
<tr>
<td>Sclerosing Cholangitis</td>
<td>Typhoid Carrier</td>
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<tr>
<td>Choledochal Cysts</td>
<td>Adult Polycystic Kidney Disease</td>
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<td>Hepatolithiasis</td>
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<td>Liver Flukes</td>
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<td>Papillomatosis of Bile Ducts</td>
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Cholangiocarcinoma
Extra-hepatic: Distribution

- Right or left hepatic duct = 10%
- Bifurcation = 20%
- Proximal CBD = 30%
- Distal CBD = 30%
Cholangiocarcinoma
Diagnosis and Initial Workup

• Jaundice
• Wt loss, anorexia, abdominal pain, fever
• US then CT (CTA?) Followed by ERCP, PTC or MRCP
• CEA and CA 19-9 can be elevated
Intra and Extra-hepatic Cholangiocarcinoma
Cholangiocarcinoma
Intra-hepatic Disease

• Suspicious mass on CT. Quadruple phase CT with 0.5 cm cuts through the liver and portal hepatitis. Consider CTA reconstruction.

• Bx

• If adenoncarcinoma: look for primary with a chest CT and upper/lower endoscopy.

• Colon, pancreas, and stomach are common primary sites.
Cholangiocarcinoma
Intra-hepatic Disease-Surgery/Ablation

• Extent of surgical therapy is determined by the location, hepatic function, and underlying cirrhosis.

• Anatomic resections have lowest recurrence rates. However nonanatomic resection increases potential surgical candidates and improves survival.

• Hepatic devascularization prior to resection is preferred

• Ablative therapy gives good local control.
# Child’s Classification

<table>
<thead>
<tr>
<th>Class</th>
<th>Alb</th>
<th>Bili</th>
<th>Ascites</th>
<th>Malnutrition</th>
<th>Encephalopathy</th>
<th>Surgical Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;3.5</td>
<td>&lt;2.0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>5%</td>
</tr>
<tr>
<td>B</td>
<td>3-3.5</td>
<td>2-3</td>
<td>Controlled</td>
<td>Mild</td>
<td>Minimal</td>
<td>10-20%</td>
</tr>
<tr>
<td>C</td>
<td>&lt;3</td>
<td>&gt;3</td>
<td>Poor Control</td>
<td>Significant</td>
<td>Recurrent / Persistent</td>
<td>30-40%</td>
</tr>
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</table>
Cholangiocarcinoma
Intra-hepatic Disease: Extent of Resection

• No Cirrhosis: 60% of liver

• Mild Cirrhosis with normal LFT’s: one lobe, maybe

• Moderate Cirrhosis with mild LFT abnormality (Child’s B): Wedge resection/RFA

• Child’s C: no surgical therapy
Cholangiocarcinoma
Intra-hepatic Disease

• Locally aggressive tumor: 65% present with satellite nodules, perineural invasion

• For residual disease use Radiation therapy and 5-FU based therapy or gemcitabine

• Re-image all every 6 mo for 2 yr. Start workup over for a new mass.
Intra-hepatic Cholangiocarcinoma
Representative Case

- 60 yo woman in MVA, US of liver reveals a mass w/o biliary obst
- Quadruple phase CT reveals a single lesion with characteristics of malignancy, 0.5 cm cuts on a multihead, helical scanner
- CT/US guided Bx yields adenocarcinoma
- CT chest, Upper and lower endoscopy are negative
- Resect or RFA if possible, if not chemotherapy.
- 30-40% chance of cure with surgery. Life expectancy with chemo is 12 to 18 m, without chemo it is 6 to 8 m.
MRCP of Extra-hepatic Cholangiocarcinoma at the Bifurcation

Klatskin tumor
Cholangiocarcinoma
Extra-hepatic

- US reveals bile duct dilatation
- Quad phase CT
- Percutaneous Cholangiogram with Internal Stent and Brush Biopsy
- ERCP with Stent and Brush Biopsy
- MRCP/MRI
Cholangiocarcinoma
Pathology

• Almost all are adenocarcinoma
• Papillary, nodular, and sclerosing
• Best prognosis is with papillary distal tumors
Cholangiocarcinoma
Extra-hepatic Disease: Surgical Therapy

• CT +/- cholangiogram

• If proximal, resect back to secondary bifurcation or one lobe and primary bifurcation, take nodes and caudate lobe. Stent anastamoses.

• If Mid CBD, excise back to negative margins and create Roux en Y hepaticojejunostomy.

• For distal disease: Whipple
CARCINOMA OF AMPLILLA OF VATER [TRANSODENAL EXPOSURE]

BENIGN PAPILLOMA OBSTRUCTING COMMON BILE DUCT; DILATATION OF DUCT AND GALLBLADDER
ERCP: Distal CBD Cancer
Ca of CBD Bifurcation

Primary stenosing carcinoma of common bile duct extending to extra- and intrahepatic ducts and hilar nodes; hydrops of gallbladder, hydrohepatitis.
Node Dissection in Bile Duct Excision
Roux-en-Y Hepaticojejunostomy Procedure performed for injuries and cancer of the bile duct.
Cholangiocarcinoma
Extra-hepatic Disease: Positive Margins or Unresectable

• Stent and Chemo/Radiation Therapy-Bracy Therapy

• 5-FU based or Gemcitabine or Clinical Trial

• Survival with surgery and chemo/radiation is 24 to 36 m.

• With chemo/radiation alone survival is 12 to 18 m.
Cholangiocarcinoma
Extra-hepatic Disease: Unstentable

• Bypass if possible
• If not use proximal decompression and feeding jejunostomy
• Chemotherapy/Radiation Therapy/Brachy therapy as tolerated or clinical trial.
Cholangiocarcinoma
Prognosis

• Best Result are with distal CBD tumors completely excised. Cure = 40%
• Incomplete resection plus radiation gives a median survival of 30 m.
• Stenting plus chemo/radiation gives a median survival of 17 to 27m
• Those stented alone live only a few months
CARCINOMA OF FUNDUS WITH SOLITARY GALLSTONE
Cancer of the Gall Bladder
Gall Bladder Cancer

• 5,000 to 7,000 per yr. in the US
• 6th decade
• 1:3, Male:Female
• Highest prevalence in Israel, Mexico, Chile, Japan, and Native American women.
• Risk Factors: Gallstones, porcelain gallbladder, polyps, chronic typhoid and some drugs
Gall Bladder Cancer
Presentation (1)

- Discovered on path after a routine cholecystectomy. (T-1a/b - invades muscularis)

- CT/Chest and Abdomen, Quad phase CT of liver

- If negative for metastasis: Radical cholecystectomy with nodal dissection, central hepatectomy, w or w/o bile duct excision. Excise port sites. Followed by Chemo/Radiation

- 5 yr. survival = 60%
Gall Bladder Cancer
Presentation 2

• RUQ pain, jaundice, wt loss: CT
• Biopsy yields adenoca c/w GB primary
• Biliary Decompression
• Chemo/Radiation using 5FU or gemcitabine.
• Capecitabine may also be effective
• Median survival with chemo/rad is 9m.
PET Scan and Cholangiocarcinoma

QuickTime™ and a GIF decompressor are needed to see this picture.
Sclerosing type of Cholangiocarcinoma
Cytological Brushing of Cholangiocarcinoma