Q&A

- Please submit all questions concerning webinar content through the Q&A panel.
- Reminder:
  - If you have participants watching this webinar at your site, please collect their names and emails.
  - We will be distributing a Q&A document in about one week. This document will fully answer questions asked during the webinar and will contain any corrections that we may discover after the webinar.
Fabulous Prizes

Agenda

- Overview
  - Anatomy
  - Prognostic Factors
  - Epi Moment
- Treatment
- Quiz
- Staging
- Quiz
- Case Scenarios
Liver and Bile Ducts

Overview

Pop Quiz 1

- Liver is a common type of cancer?
- True or False

- False
Anatomy

- Liver (C22.0)
- Intrahepatic Bile Ducts (C22.1)
- Extrahepatic Bile Duct (C24.0)
- Ampulla of Vater (C24.1)
- Overlapping lesion of biliary tract (C24.8)
- Biliary tract, NOS (C24.9)

**Lymph Nodes**

- Liver
  - Hilar
  - Hepatoduodenal ligament lymph nodes
- Caval
  - Hepatic artery and portal vein
- Intrahepatic bile duct
  - Hilar
  - Gastrohepatic (left lobe)
  - Periduodenal and peripancreatic (right lobe)
  - Inferior phrenic nodes

**Common Metastatic Sites**

- Lung
- Abdominal lymph nodes
- Peritoneum
- Bone
Histologies

- Hepatocellular carcinomas (8170-8175)
- Cholangiocarcinoma (8160-8161)
  - Also known as bile duct carcinoma or bile duct adenocarcinoma
- Klatskin Tumor (8162)
- Combined hepatocellular carcinoma and cholangiocarcinoma (8180)
Pop Quiz

• What primary site code should be coded to cholangiocarcinoma?
**Alpha Fetoprotein (AFP)**
- Plasma protein
- Predictive of survival
- Monitor for response to therapy or recurrence

**Cirrhosis**
- Healthy tissue replaced by scar tissue
- Blocks the flow of blood through the liver

[http://www.keepurhealth.net/cirrhosis-of-the-liver-information-and-treatment/]
Fibrosis and Ishak Fibrosis Score

- Fibrous scar tissue in the liver
- Disease progression leads to cirrhosis
- Score of 1-2
  - Minimal liver scarring around liver blood vessels
- Score of 3
  - Scarring extended out from liver blood vessels
- Score of 4
  - Scarring that forms “bridges” between blood vessels
- Score of 5-6
  - Extensive scarring or cirrhosis

Creatinine, Total Bilirubin, and INR

- Used in the MELD calculation
- Creatinine
  - Waste product filtered by the kidneys
  - Use the highest blood or serum creatinine value prior to treatment
- Total Bilirubin
  - Left after the breakdown of red blood cells
  - High levels can lead to jaundice
- International Normalized Ratio for Prothrombin Time (INR)
Liver and intrahepatic bile duct cancers

- One of our largest organs
  - Filtration (cleansing)
  - Bile production (digestion)
  - Glycogen storage (energy)
- Intra versus extra bile duct
  - Inside versus outside
  - Intrahepatic reported with liver
- Bile cancer less common (cholangiocarcinoma)
- Men ↑ vs women; nonwhites ↑ vs whites
  - API highest
  - Approximately 1% of US population will be diagnosed
- Mortality & survival follow similar patterns
- More common worldwide
  - 7th incidence; 2nd mortality
  - Highest rates in Asian & Africa
- Hepatocellular carcinoma (75%)
  - Hepatoblastoma (rate, pediatric)
Risk Factors

- Parasitic infections
  - *Opisthorchis viverrini; Clonorchis sinensis*
- Viral infections
  - Hepatitis B & C
- Heavy alcohol use/cirrhosis
  - Non-fatty liver disease
- Obesity, type 2 diabetes
- Tobacco use, steroids, aflatoxins
- Inherited metabolic disease, heredity hemochromatosis
- Rare conditions: Tyrosinemia, Glycogen storage diseases, Wilson disease
- Environmental: arsenic, vinyl chloride, thorium
- Uncertain: birth control
- Protective: coffee drinking

Symptoms, Diagnosis & Screening

- Difficult to dx; often misclassified
- Common metastatic site
  - DCO cases
- <1/2 local at dx
- No population based screening
  - Ultrasound & other imaging
  - AFP & other blood tests
- Symptoms non-specific
  - Other liver disease
**Survival**

- Lower among men, non-whites, older

![Survival Graph]

Average age at DX: 63

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**Current research directions**

- **Screening**
  - DKK1

- **Treatment**
  - Radioembolization
    - adjuvant therapies none currently effective
  - Regorafenib (Stivarga)
    - Targeted therapy
  - JX-594
    - *Virus therapy*
Liver cancer is on the rise....?

- Increased diagnosis, screening efforts
- Increased risk
  - Viral infection, obesity, fatty liver disease, & diabetes
  - Cohort effects
    - Baby boomers

Liver cancer is on the rise....?
Prognosis and treatment options

- Depend on the stage of the cancer
- How well the liver is working
- Patient’s general health
  - Cirrhosis of liver
- Seven main treatment options

Types of Treatment

- Surveillance
  - For lesions smaller than 1 cm
- Surgery
  - Partial hepatectomy
  - Liver transplant
Ablation Therapy

- Radiofrequency Ablation (RFA)
  - A “heating probe” is used to destroy tumors in the liver
  - Generally done on smaller tumors
  - Can be performed during open surgery or laparoscopically
  - Coded under Surgery 16 Heat-Radio-frequency ablation (RFA)
    - Only if no specimen sent to pathology from the procedure
- Percutaneous Ethanol Injection (PEI)
  - Sterile, 100% alcohol injected into the liver to kill cancer cells
  - Code surgery code 15
- Other ablation therapies

Chemoembolization

- Transcatheter Arterial Chemoembolization (TACE)
  - 75% of the liver is supplied by the portal vein
  - Most hepatocellular carcinomas are supplied by the hepatic artery and are highly vascular
- Drug-Eluting Beads (DEB-TACE)
  - Microspheres used to embolize the tumor and release chemotherapy (doxorubicin)
- Code as chemotherapy-single or multiple agents
**Transarterial Radioembolization (TARE)**

- Same concept as DEB TACE, but rather than chemotherapy Yttrium-90 is used
- Code as follows
  - *Regional Treatment Modality*: 53 - Brachytherapy, interstitial, LDR
  - *Radiation Treatment Volume*: 14 – Liver
  - *Regional Dose-cGy*: 88888 - Not applicable (brachytherapy)
  - *Boost Treatment Modality*: 00 - None, no boost administered
  - *Boost Dose-cGy*: 88888 - Not applicable (brachytherapy)
- If embolization is done and there is no chemotherapy agent or radiation, code to Other

**External Beam Radiation (EBRT)**

- Often used on patients with 1-3 tumor with minimal or no extrahepatic disease
  - Stereotactic body radiation (SBRT)
    - Code as 41, 42, or 43
  - 3D Conformal
    - Code as 32
Pop Quiz 2

- What treatment modality should be coded for TARE?
Liver and Intrahepatic Bile Ducts

- In situ (0)
  - Noninvasive; intraepithelial
- Localized (1)
  - Confined to 1 lobe with or without vascular invasion
  - Multiple (satellite) nodules/tumors confined to 1 lobe
  - Confined to liver NOS
  - Localized NOS

Liver and Intrahepatic Bile Ducts

Regional by Direct Extension (2)

- More than 1 lobe involved by contiguous growth (single lesion)
- Extension to:
  - Diaphragm; extrahepatic bile duct; extrahepatic blood vessel (hepatic artery, portal vein, vena cava); gallbladder; lesser omentum; ligament (coronary, falciform, hepatoduodenal, hepatogastric, triangular); peritoneum NOS (parietal, visceral)
- Multiple (satellite) nodules/tumors in more than 1 lobe of liver or on surface of parenchyma
- Satellite nodules NOS
Liver and Intrahepatic Bile Ducts

- Regional lymph nodes(s) involved only (3)
  - Hepatic NOS: Hepatic artery, hepatic pedicle, inferior vena cava, porta hepatis (portal) (hilar) [in hilus of liver]
  - Periportal
  - Regional lymph nodes NOS
- Regional by BOTH direct extension AND regional lymph node(s) involved (4)
  - Summary Stage 2000 codes 2 + 3
- Regional NOS (5)

Liver and Intrahepatic Bile Ducts

- Distant site(s)/lymph node(s) involved (7)
  - Distant lymph nodes
    - Aortic, NOS [lateral (lumbar), para-aortic, periaortic]; cardiac; coronary artery; diaphragmatic [pericardial (pericardiac)]; peripancreatic; posterior mediastinal (tracheoesophageal) including juxtaphrenic nodes; renal artery; retroperitoneal, NOS; other distant lymph nodes
  - Extension to
    - Pancreas; pleura; stomach
    - Further contiguous extension
  - Metastasis
Pop Quiz 3

- MRI: Hepatomegaly; 7 cm right liver lobe mass with intrahepatic metastases confined to the right lobe. No vascular invasion; small hepatic nodes; no other organomegaly. Liver is cirrhotic.
- Hepatic biopsy: Hepatocellular carcinoma, grade 3.
- What is the code for Summary Stage 2000?
  - Localized

Extrahepatic Bile Duct

- 0 In situ:
  - Noninvasive;
  - intraepithelial
- 1 Localized only Invasive tumor confined to:
  - Lamina propria
  - Mucosa, NOS
  - Muscularis propria
  - Submucosa (superficial invasion)
**Extrahepatic Bile Duct**

- 2 Regional by direct extension only
  - Extension to:
    - Blood vessel(s) (major):
      - Hepatic artery
      - Portal vein
    - Colon, NOS:
    - Duodenum
    - Gallbladder
    - Liver including porta hepatis
    - Omentum
    - Pancreas
    - Periductal/fibromuscular connective tissue
    - Stomach, NOS

- 3 Regional lymph node(s) involved only
  - Cystic duct (Calot’s node)
  - Node of the foramen of Winslow (epiploic) (omentum)
  - Pancreaticoduodenal
  - Pericholedochal (common bile duct)
  - Periduodenal
  - Peripancreatic (near head of pancreas only)
  - Periportal
  - Porta hepatis (portal) (hilar) [in hilus of liver]
Extrahepatic Bile Duct

- 7 Distant site(s)/node(s) involved
  - Distant lymph node(s):
    - Celiac
    - Para-aortic
    - Superior mesenteric
    - Other distant lymph node(s)
  - Further contiguous extension
  - Metastasis

TNM Stage
Liver
See Page 193
**Rules for Classification**

- **Clinical Staging**
  - Imaging techniques that clearly show the size of the tumor and vascular invasion
    - CT and MRI with intravenous contrast
- **Pathologic staging**
  - Pathologic evaluation of the primary tumor
  - Pathologic evaluation of regional lymph nodes

**Primary Tumor**

- Primary tumor is assessment
  - Size of tumor
  - Solitary vs multiple tumors
  - Major branch of the portal/hepatic vein involvement

See page 196
Blue table
**Pop Quiz 4**

- MRI: Hepatomegaly; 7 cm right liver lobe mass with intrahepatic metastases in both lobes.
  - No vascular invasion
  - Small hepatic nodes
  - No other organomegaly.
  - Liver is cirrhotic.
  - Patient is not a surgical candidate.
- Hepatic biopsy: Hepatocellular carcinoma, grade 3.

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**Pop Quiz 4**

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Pop Quiz 5

- A CT of the abdomen showed a 6cm tumor in the left lobe of the liver with right portal vein thrombus. A second 2cm tumor was identified in the left lobe of the liver. No vascular invasion identified. No lymphadenopathy.
  - A biopsy confirmed moderately differentiated hepatocellular carcinoma

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**Regional Lymph Nodes**

- Regional lymph node metastasis is rare in patients with hepatocellular carcinoma.
  - Prognosis is poor for patients with lymph node metastasis.
  - Prognosis is similar to that of patients with distant metastasis
- Regional lymph node metastasis is more common in patients with fibrolamellar hepatocellular carcinoma.

**Pop Quiz 6**

- A CT of the abdomen showed a 2cm tumor in the left lobe of the liver.
  - No major vascular invasion identified.
  - A biopsy confirmed moderately differentiated fibrolamellar hepatocellular carcinoma
  - Metastatic lymph nodes seen along the hepatic artery
- The patient went on to have a resection of the left lobe of the liver.
  - Pathology confirmed a 2 cm moderately differentiated hepatocellular carcinoma
  - Two lymph nodes removed and found to have metastatic disease
### Pop Quiz 6

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### Bile Ducts

- **Intrahepatic**
  - Chapter 19 (pg 203)
  - C22.1
  - Cholangiocarcinoma
- **Perihilar (pg 221)**
  - Chapter 21
  - C24.0
  - Adenocarcinoma
- **Distal (pg 229)**
  - Chapter 22
  - Adenocarcinoma
Pop Quiz 7

- MRI: 2 cm malignant tumor confined to left lobe of the liver with tumor thrombus of the left hepatic vein. No lymphadenopathy.
- CT scan chest: No abnormalities in lungs.
- Hepatic biopsy: Cholangiocarcinoma, grade 2

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Pop Quiz 8

- MRI: 2 cm tumor arising in the distal bile duct. The tumor invades into the duodenum. No lymphadenopathy.
  - CT scan chest: No abnormalities in lungs.
  - Hepatic biopsy: Cholangiocarcinoma, grade 2
- Patient is not a surgical candidate.

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Coming Up....

• 7/13/17 Clinical Outcomes and Quality Improvement: Oncology Dashboard Drivers
  – Jocelyn Hoopes and Lisa Landvogt
• 8/3/13 Collecting Cancer Data: Central Nervous System

And Our Fabulous Prizes Go To...

HAPPY JUNE
CE Certificate Quiz Survey

- Phrase
- Link

Thank You!

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