Hilar cholangiocarcinoma

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Content

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- Anatomy
- Biliary strictures
- (Hilar) Cholangiocarcinoom
- Staging

Biliary tract

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- 1st order
  - *Ductus hepatica dextra*
  - *Ductus hepaticus sinistra*
- 2nd order
  - *Posterior and anterior*
  - *Medial and lateral*
- 3rd order
  - *Segmental biliary branches*

Normal imaging

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- Ductus choledochus < 6mm
  - *8-10mm acceptable in elderly and after cholecystectomy*
  - *dilatation after opiate use*
- Ductus hepaticus dexter and sinister < 3mm
- Thin wall, non-measurable

Biliary obstruction

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Strictures

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Benign

- 3-5mm
- Concentric
- Smooth

Malignant

- >10mm
- Excentric
- Abrupt
- Irregular

- Overlap!

Malignant strictures

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- Cholangiocarcinoom
- Biliary duct invasion
  - *gallbladder, pancreas- or duodenumcarcinoma*
- Metastases to biliary tract
  - *Breast, colon, melanoma*
- External compression due to nodes

Cholangiocarcinoma

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- Adenocarcinoma of the biliary tract

- Age 60-70jr, M>F

- 0,5%-1% malignancies
- Overall 5-year survival 0-10%, median 7 mnd
- After resection 10-45%

Cholangiocarcinoma

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- Higher Risk with benign disorders:
  - *Auto-immune:*
    - PSC (10-20% cholangiocarcinoma)
  - *Congenital:*
    - Choledochus cysts, Caroli, Primary biliairy cirrhosis
  - *Infectious:*
    - Biliairy parasites, recurrent pyogenic cholangitis
    - Incidence Asia x10

Cholangiocarcinoom

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- 4 types
  - *Intrahepatic (5-15%)*
    - > 2nd order bile ducts
  - *(Intraductaal)*
  - *Hilar (60-70%)*
    - Bifurcation ductus hepaticus
  - *Extrahepatic (20-30%)*

Growth CCA

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- Intraductal
  - *Infrequent*
  - *Papillary adenocarcinoma with intraluminal growth*

- Combined growth patterns do occur !
  - *Mass-forming and periductal*

Hilar cholangiocarcinoma

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- Described by Gerald F. Klatskin in 1965
  - *'Adenocarcinoma of the hepatic duct at its bifurcation with the porta hepatis. An unusual tumor with distinctive clinical and pathologic features'* Am. J. Med. *1965; 38: 241-256*

Klatskin tumor

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- Clinical presentation
  - *jaundice*
  - *pain*
  - *Fever in case of secondary cholangitis*

Imaging Klatskin

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- Biliary obstruction at hilar level
  - *No communication of biliary ducts*
  - *Galbladder normal or collapsed*
  - *Extrahepatic biliary tract normal*

- Difficult to visualize, due to isodensity
- Step-by step localization by analyzing various anatomical structures

Imaging Klatskin

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- Frequent small tumor mass
  - *Due to early presentation*
- Periductal growth
- May show late enhancement
- Lobar atrophy
  - *Vascular or biliary invasion*

Imaging before stent!

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- Dilatation marks level of obstruction
- Stent gives rise to artifacts
- Inflammatory reaction to stent > pseudo-thickening

Classifications

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- Bismuth Corlette classification only insufficient for assessing resectability
  - *Only longitudinal tumor spread*
- T-staging
  - *Lateral tumor spread*

T-staging

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- **T1** Tumor confined to the bile duct histologically
- **T2** Invades beyond the wall of the bile duct
- **T3** Tumor invades the liver, gall bladder, pancreas, and/or ipsilateral branches of the portal vein (right or left), or hepatic artery (right or left)
- **T4** Tumor invades any of the following: main portal vein or its branches bilaterally, common hepatic artery, or other adjacent structures, such as the colon, stomach, duodenum, or abdominal wall

(AJCC 6th edn)

N-staging

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- N0
  - *No locoregional nodes*
- N1
  - *Nodes along cystic duct, CBD, a. hepatica en v. porta*
- N2
  - *Metastases to para-aortic, pericavaal, SMA or truncal regions*

Irresectability

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- Bismuth type IV
- Vascular encasement or invasion (a. hepatica communis, a. hepatica dextra or sinistra, main portal vein)
- Atrophy liver lobe with:
  - *contralateral invasion portal trunk*
  - *contralateral 2nd order biliary duct involvement*

- Distant Nodal metastases (50% at presentation)
- Peritoneal metastases or distant metastases (10-20%)

Resection

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- Only curative treatment is complete resection met negative margins
  - *Extrahepatic resection*
  - *Liver resection*
  - *Locoregional lymphnode dissection*

Take home messages

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- Most frequent location of ductal cholangiocarcinoma is hilar
- Tumor leads to early jaundice, therefore small mass, difficult to visualize
- Longitudinal tumor spread according to Bismuth classification
- Lateral tumor spread according to T-staging

References

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