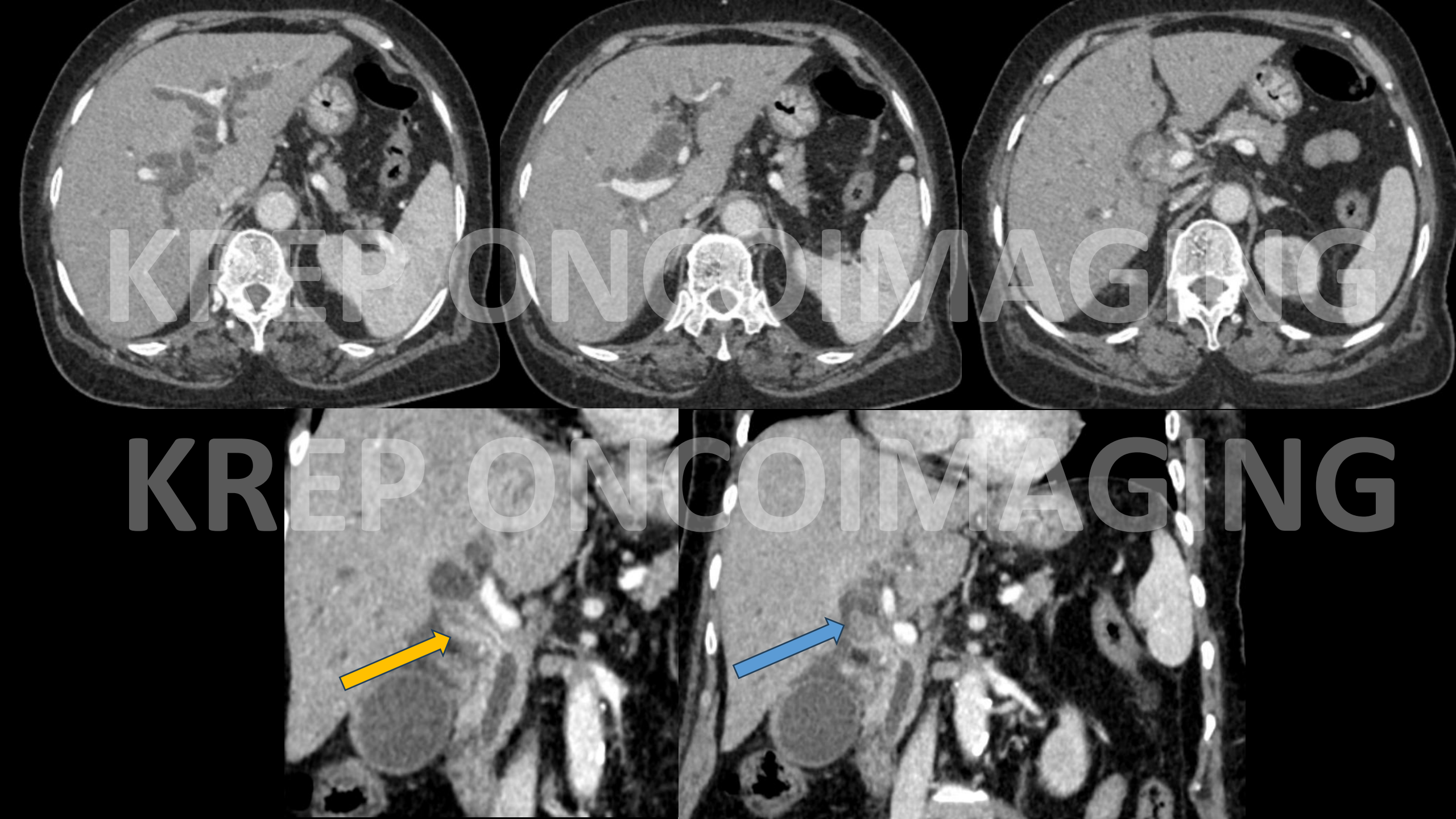
2025

KARNATAKA RADIOLOGY EDUCATION PROGRAM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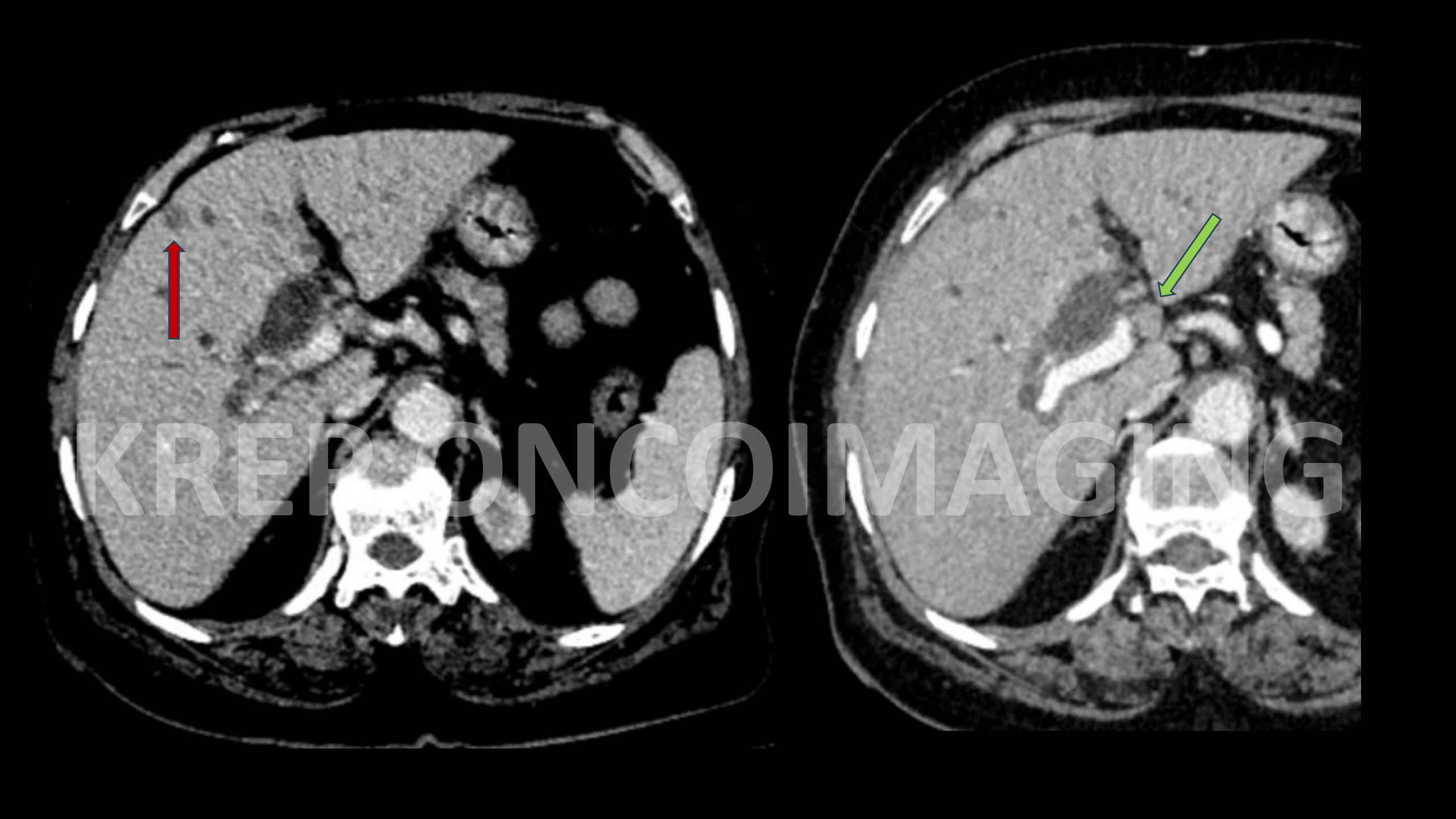
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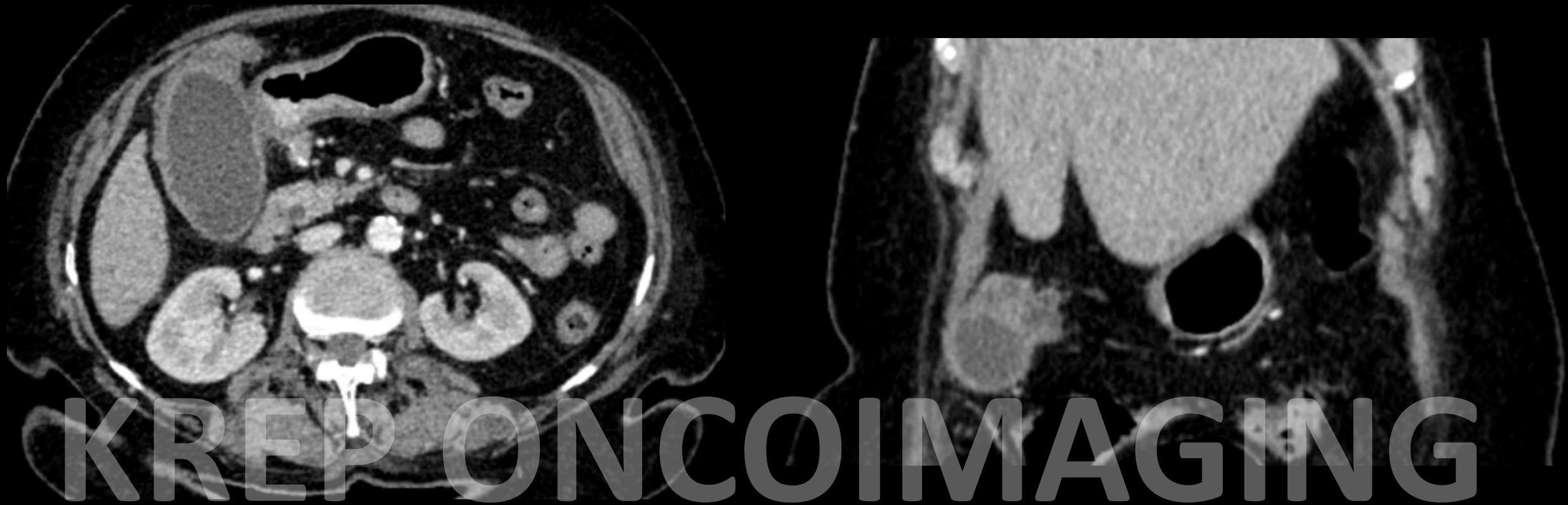
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- There is bilobar communicating moderate IHBRD with circumferential enhancing wall thickening, luminal narrowing involving the CHD and the proximal segment of the CBD (orange arrow). On oblique coronal MPR, the proximal portion of the CHD shows a lobulated enhancing intraluminal soft tissue component (blue arrow).
  - Suggestive of cholangiocarcinoma (with periductal and intraluminal components)
- Distal CBD is dilated with abrupt narrowing near ampulla, possibly a stricture. No enhancing wall thickening or suspicious areas in periampullary region identified in present study.
  - Suggestive of possible stricture or radiolucent calculus near ampulla.
- Subtle GB serosal surface thickening is noted with an enhancing soft tissue near the fundus.
  - Suggestive of metastatic deposit.
- A small hypodense, hypoenhancing lesion is identified in segment IVB of the liver (red arrow)
  - Of concern for intrahepatic metastasis.
- An enlarged periportal lymph node is also noted (green arrow).
  - Suggestive of metastasis.

1. **Anatomical Types & Importance**
   Cholangiocarcinoma (CCA) is cancer arising from bile duct epithelium. It's classified as **intrahepatic**, **perihilar (hilar / Klatskin type)**, or **distal extrahepatic**.
   ➤ This classification matters because each type differs in surgical approach, spread pattern, and prognosis.

2. **Typical Presentation**
   Perihilar CCA (like your case) usually presents with **progressive jaundice, pruritus, pale stools, and biliary dilatation** without a large liver mass.

3. **Imaging Characteristics (CT/MRI)**
   - **CT** shows **irregular or circumferential enhancing bile duct wall thickening**, often with **luminal narrowing** and **upstream ductal dilatation**.
   - A **delayed progressive enhancement pattern** is common due to dense fibrous stroma.
   - **Intraluminal nodular or papillary components** may be seen projecting into the duct (as in your report).
   - **MRI with MRCP** gives the best map of ductal extent and helps detect small satellite nodules or vascular involvement.

4. **Key Differentiating Imaging Patterns**
   - **Mass-forming type:** a dominant hepatic mass with delayed enhancement.
   - **Periductal-infiltrating type:** diffuse wall thickening without a distinct mass (commonest in perihilar).
   - **Intraductal-growing type:** papillary or polypoid lesion within bile duct lumen.

5. **Histopathology & Immuno-profile**
   - Most are **adenocarcinomas with abundant desmoplastic stroma**.
   - **IHC markers:** CK7+, CK19+, variable CK20+, and negative for HepPar-1 — helping distinguish from hepatocellular carcinoma.
   - Perineural invasion and lymphatic spread are frequent.

6. **Staging & Oncologic Significance (AJCC 8th Edition)**
    - Staging is site-specific.
    - For **perihilar tumours**, stage is based on **extent of bile duct and vascular involvement**, presence of **hepatic metastasis**, and **regional lymph node status**.
    - A **satellite lesion (segment IVB)** and **periportal node metastasis** indicate advanced disease, usually not amenable to curative surgery.
7. **Resectability Assessment (What Imaging Must Report)**
   Radiology plays a key role in pre-operative planning by identifying:
    - Longitudinal tumour spread along ducts (Bismuth–Corlette classification)
    - Portal vein / hepatic artery encasement
    - Lobar atrophy or hypertrophy
    - Satellite lesions or metastases
    - Regional lymphadenopathy
      ➤ These features decide whether the patient is eligible for surgery, transplant, or palliative treatment.
8. **Treatment & Systemic Therapy**
    - **Surgery (R0 resection)** is the only curative option, feasible in < 40% of patients.
    - **Unresectable or metastatic disease** is treated with **Gemcitabine + Cisplatin**, now often combined with **Durvalumab (immunotherapy)**.
    - Targeted drugs are emerging for **IDH1 mutation** or **FGFR2 fusion** positive tumours.
9. **Prognostic Factors (Seen on Imaging)**
   Poor prognostic indicators include:
    - Multifocal intrahepatic or satellite lesions
    - Portal or arterial invasion
    - Nodal or distant metastases
    - Incomplete biliary drainage or lobar atrophy
10. **Follow-up & Recurrence Patterns**
    Recurrences are often **local along the biliary tract or in the liver** within 1–2 years post-surgery.
    MRI or multiphase CT is preferred for surveillance, focusing on **anastomotic sites, regional nodes, and liver remnant**.

Contributors

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