CIRA Case of the Week

Case Courtesy of Drs. Jason Martin, Edwin Zhang and Robyn Pugash

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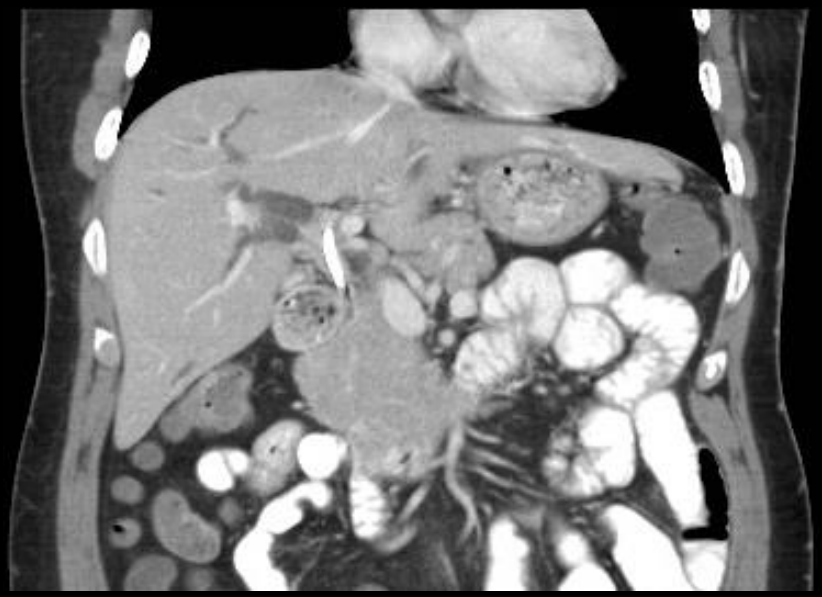
Sunnybrook
HEALTH SCIENCES CENTRE
when it matters MOST

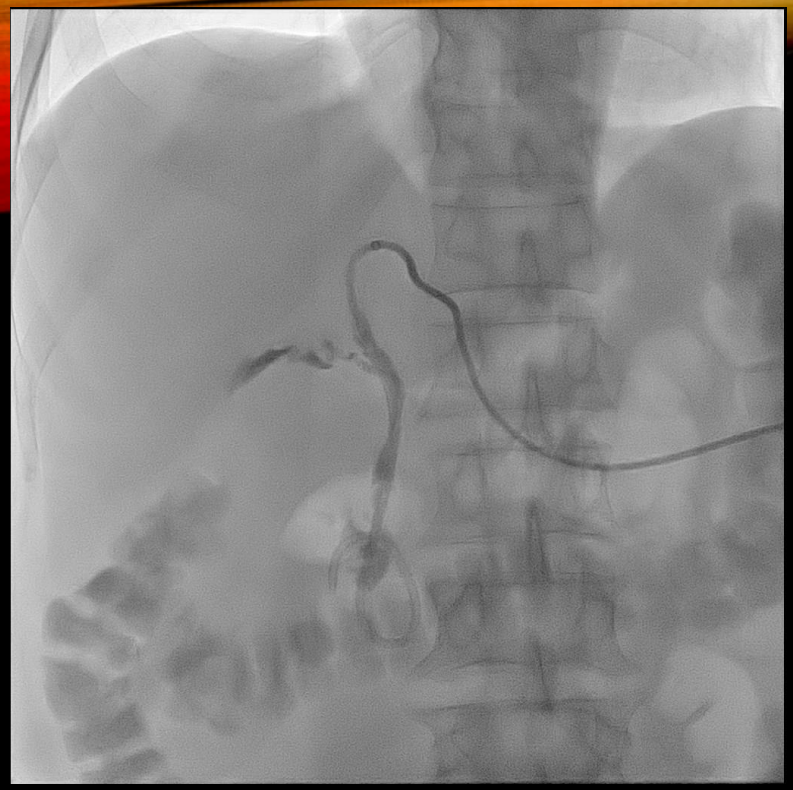
CASE

- 58 year-old male with worsening jaundice and liver function
- Known Klatskin tumor
- Internal/external biliary drain inserted at peripheral hospital
- Ongoing severe right-sided biliary dilation and elevated bilirubin, precluding chemotherapy

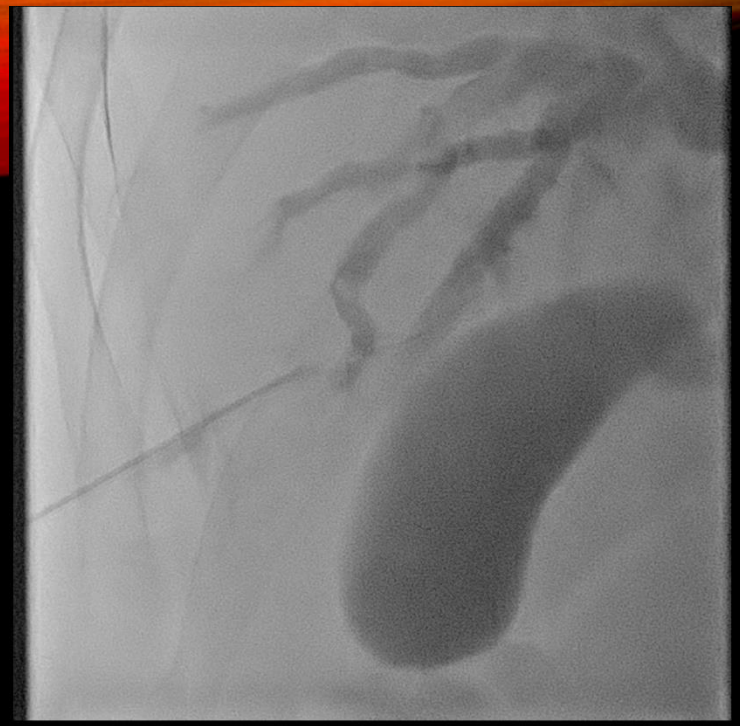


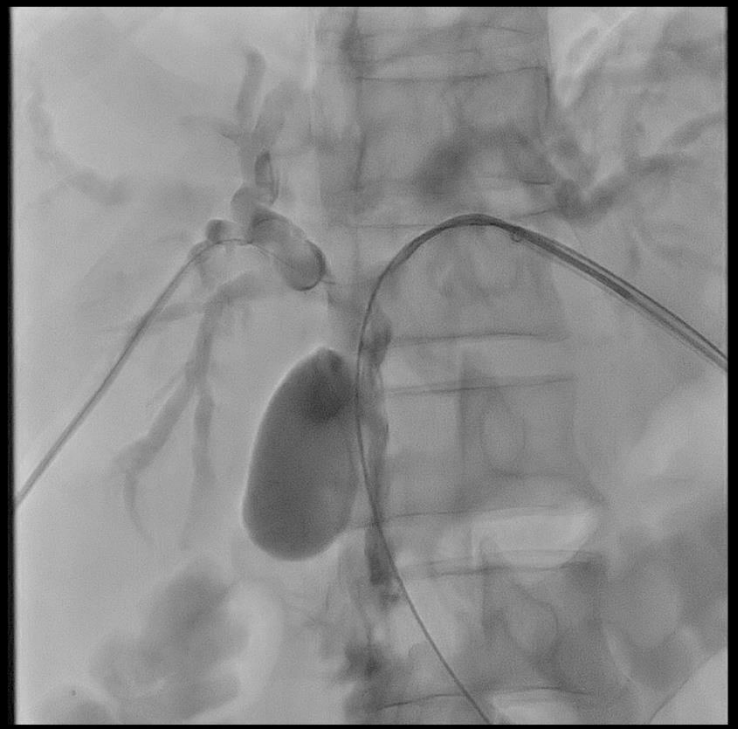
GOALS

- Relieve biliary obstruction
- Minimize number of drains
- Optimize quality of life for patient

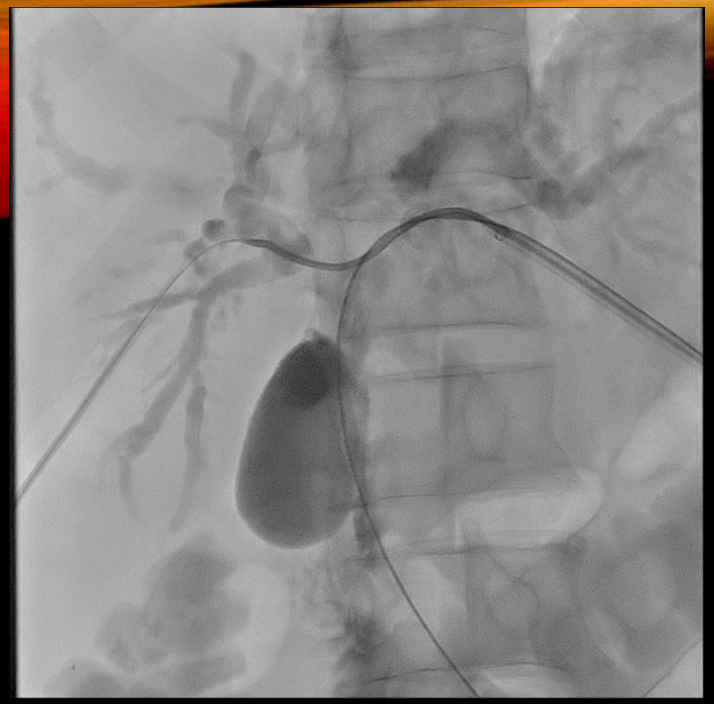
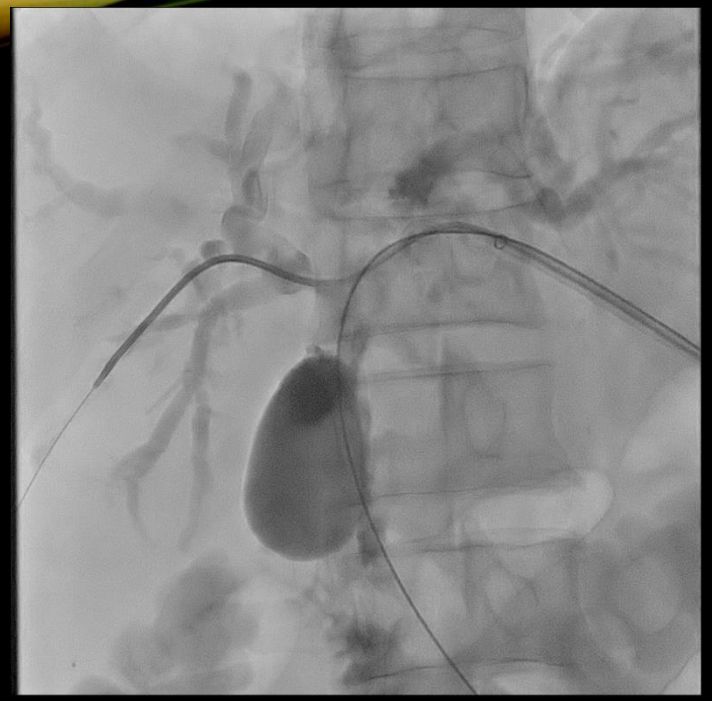
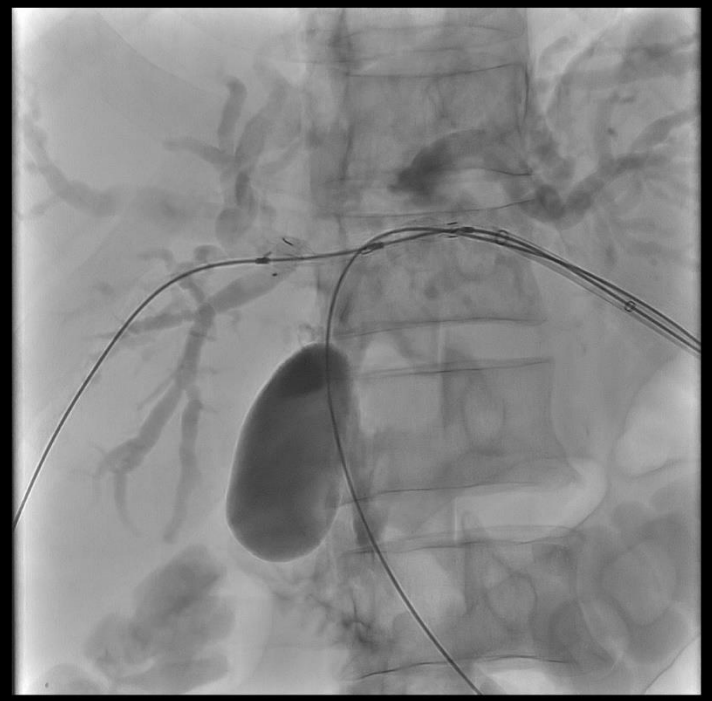


- Via the existing left sided internal/external biliary access, an 8F sheath was inserted after removing old biliary tube over amplatz wire
- Biliary brushing was performed using a brushing catheter (8F)
- Extensive attempts to try cross left-to-right via left sided access was unsuccessful, including the use of 4F Glidecath and 0.018 45 degree Glidewire GT
- It was decided to perform right-sided puncture to help get access across the hilar stricture

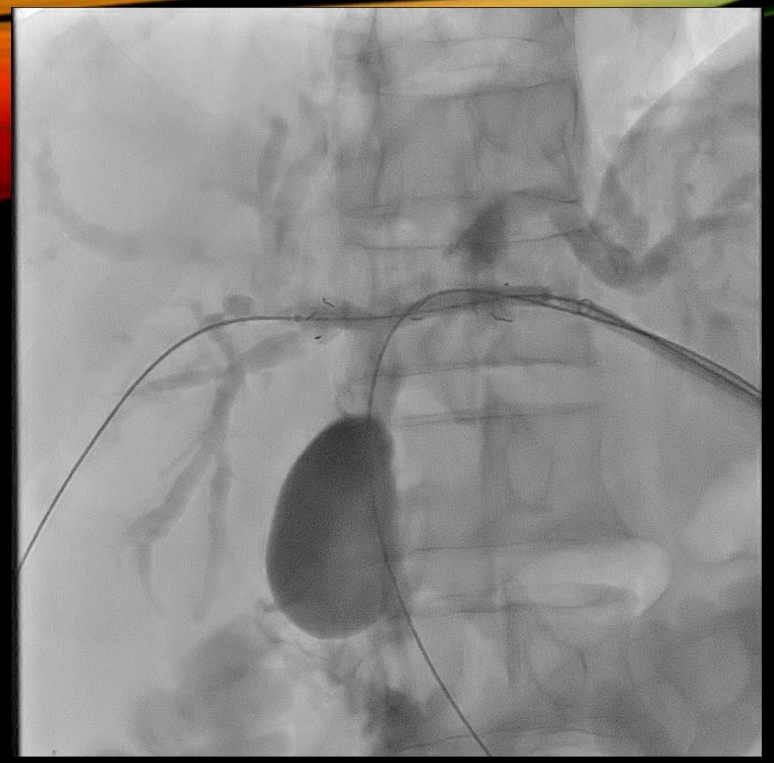


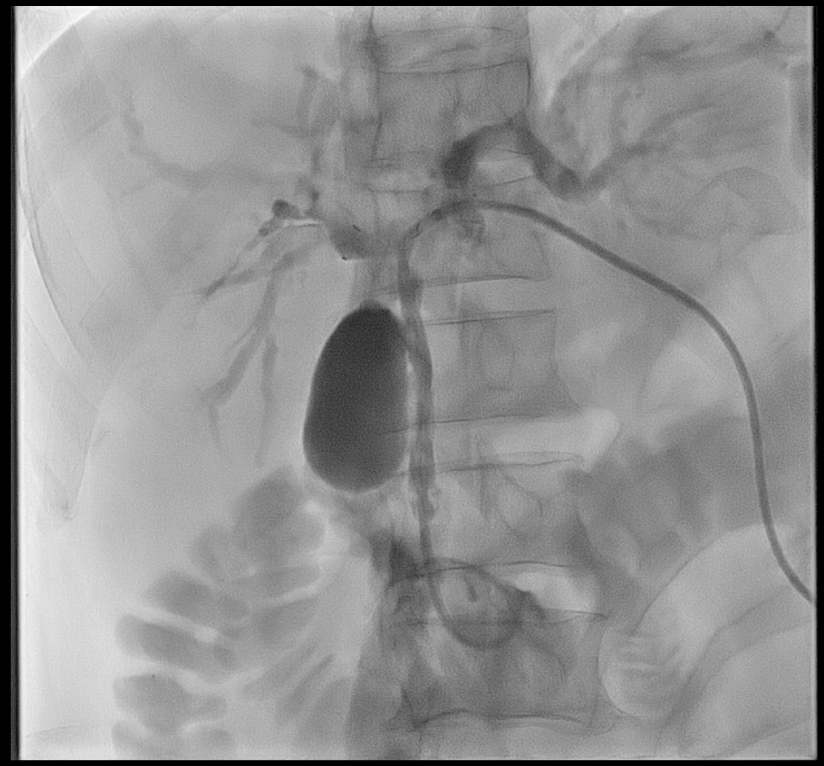


- US-guided 21G Chiba puncture of right anterior sectoral peripheral duct
- This required multiple attempts before finally being successful
- 4F Neff sheath inserted on the right
- 0.018 angled Glidewire GT used to cross into CBD
- Safety wire into duodenum from left-sided access was inserted
- The Glidewire GT was snared via left-sided access with 4F x 5 mm loop diameter Multisnare to create through-and-through access across the hilum (body floss)

- 5F Bernstein catheter advanced across the through-through wire
- Using a check-flo valve, a pull-back cholangiogram was performed with the Bernstein to delineate the hilar lesion
- The 0.018 Glidewire was exchanged for an Amplatz wire
- An 8 mm x 40 mm Niti-S biliary uncovered stent was then deployed across the hilar stricture
- The left side of the stent was still quite compressed after deployment





- This stent was post-dilated with 5 x 40 mm Mustang, with improved appearances of the stent, although still not entirely open at its midsegment
- Safety wire from left side was removed
- 5F Bernstein advanced across through-through wire once again from left side, then wire removed, then catheter retracted to midpoint of the stent, then angled Glidewire used to select through interstices and into duodenum
- Then after exchanging for Amplatz wire, a new 8F internal/external distal cope loop biliary drain (with 2 extra proximal sideholes fashioned manually) was inserted

FOLLOW-UP

- Bilirubin normalized
- Patient proceeded to chemotherapy
- Hilar stent remains patent (for now)

TAKE-HOME MESSAGE

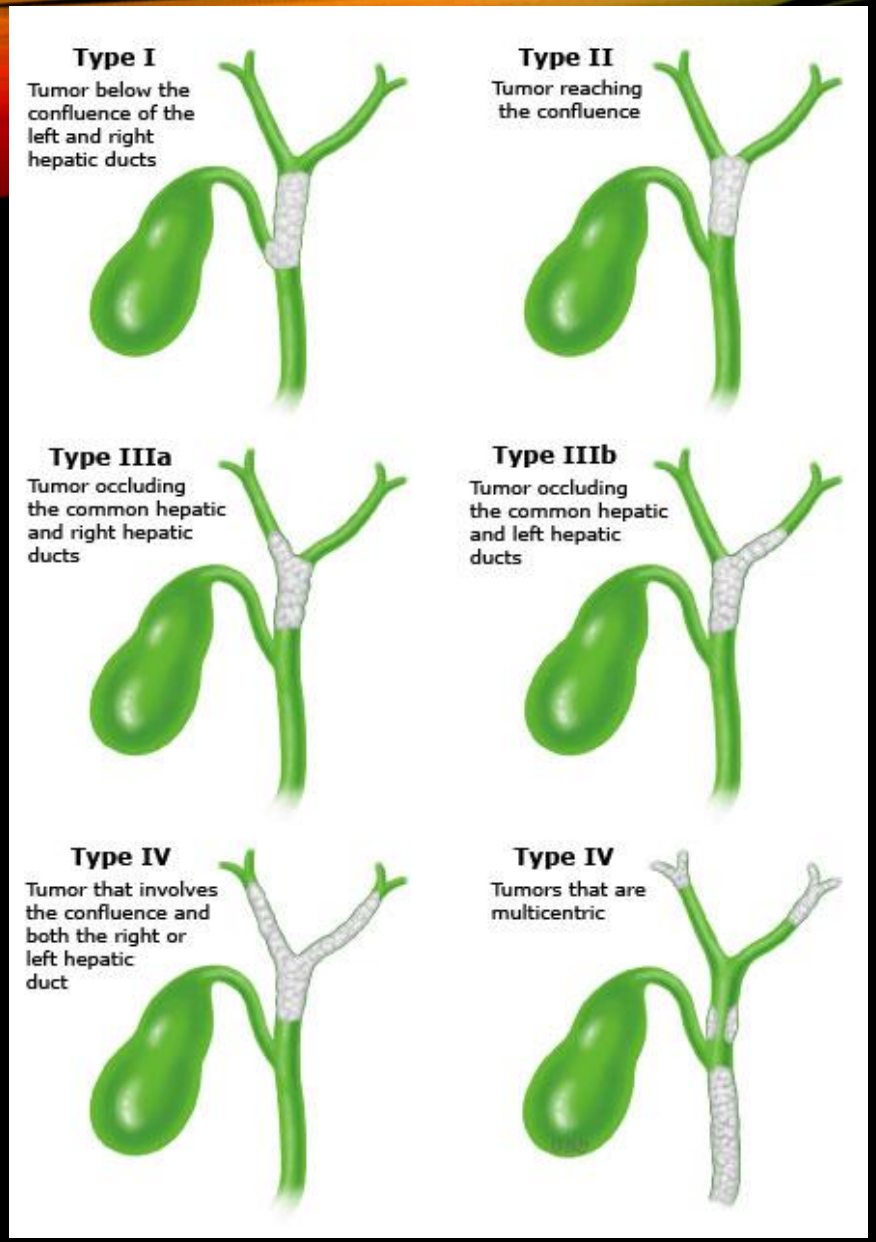
- Can be very hard to cross from right-to-left and vice versa
- Two options: put in second biliary drain on contralateral side, or cross the hilum
- Extremely difficult to cross hilum with tumor is present, so don't forget about the duodenum
- Patient morbidity is important

PERCUTANEOUS BILIARY DRAINAGE AND STENTING (PBDS)

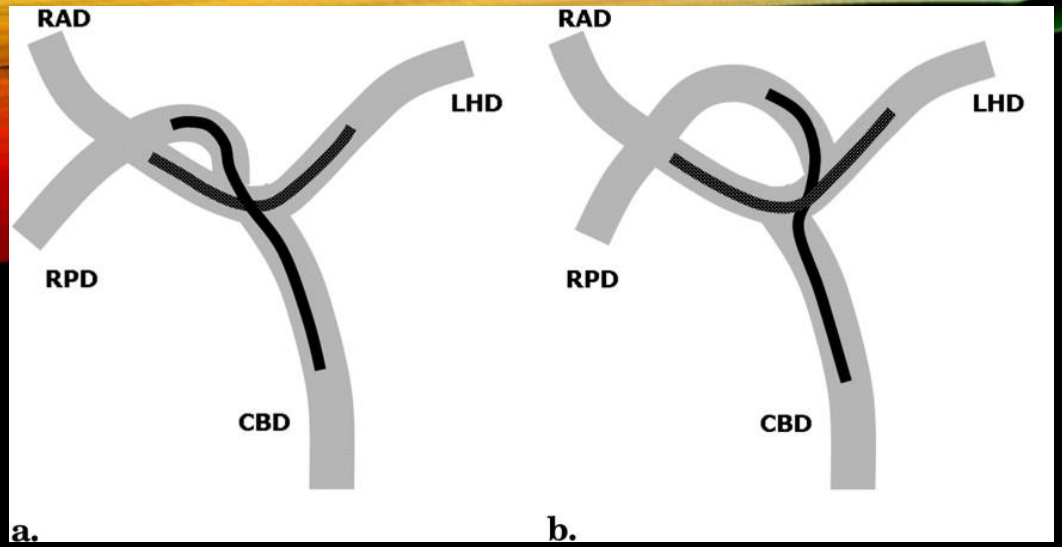
- Established method of palliation in patients with malignant biliary obstruction
- Most cases are due to pancreatic adenocarcinoma or cholangiocarcinoma
- Goals include pain relief, improving jaundice, and preventing cholangitis

PBDS

- Referral depends on local practice patterns
- Can be done by endoscopic team or interventional radiology depending on location of tumor, access, and expertise
- Metal stents have higher patency rates than plastic, shorter hospital stay, and lower overall cost
- Covered metal stents are available, but migration and occlusion of side branches are a concern
- Evidence suggests that those patients with cholangiocarcinoma who are unsuitable for surgery should be offered brachytherapy or photodynamic therapy in addition to biliary stenting, as median survival and stent patency is prolonged compared to stenting alone



BISMUTH-CORLETTE CLASSIFICATION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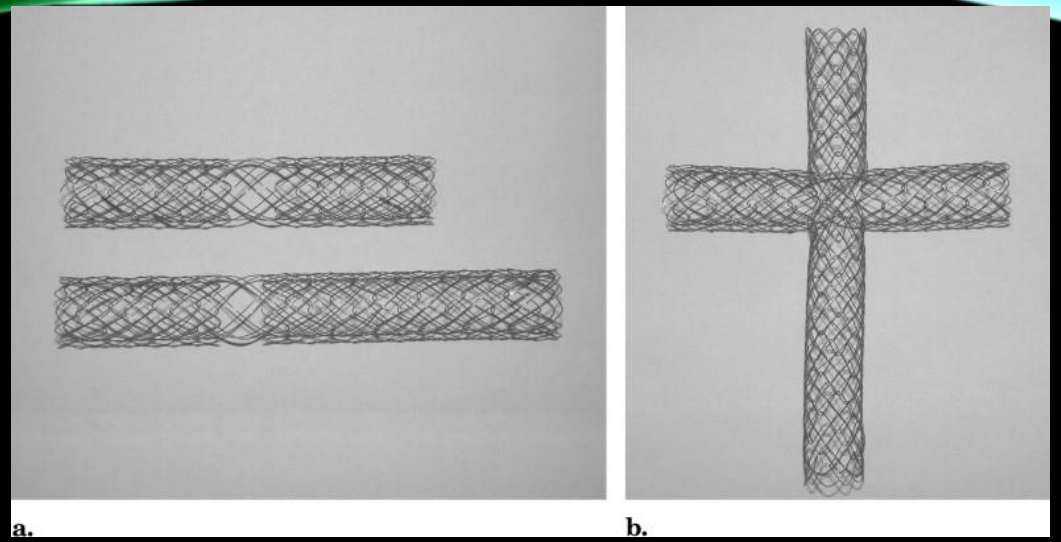
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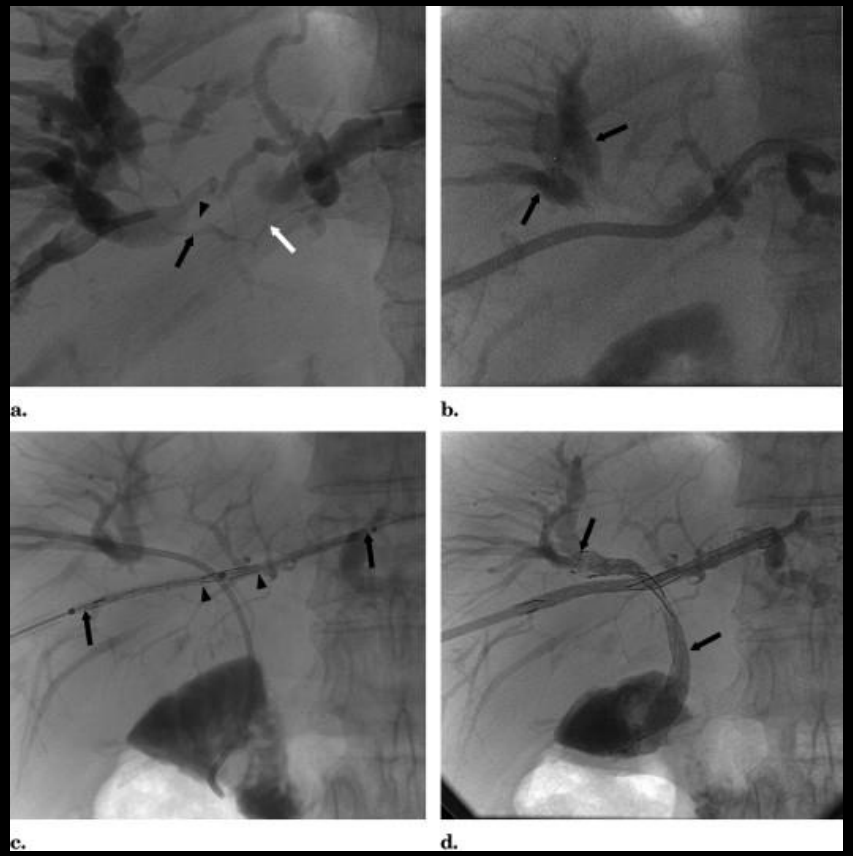
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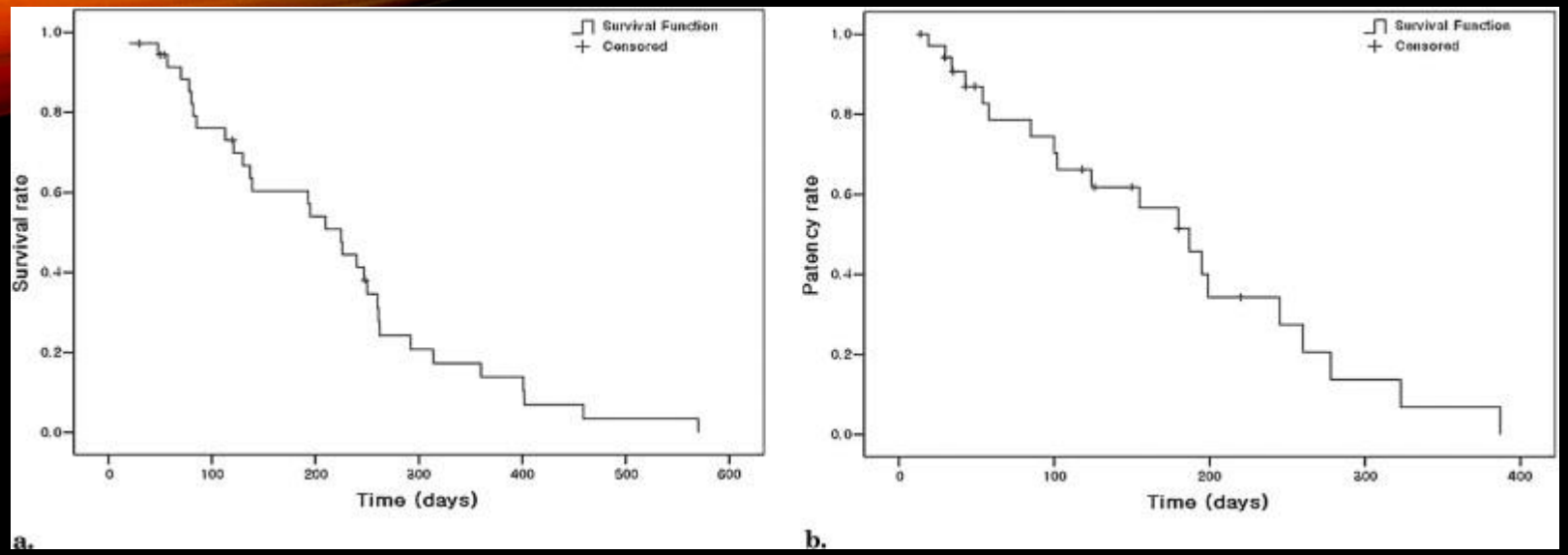

- For trisectoral drainage, cumulative primary patency rates were calculated as 80%, 52%, 14%, and 0% at 3, 6, 9, and 12 months, respectively
- The median patency time was 187 days (95% CI, 136.2–237.9)
- The median patient survival time was 225 days (95% CI, 180–269.9)

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- Miyayama S, Matsui O, Akakura Y, Yamamoto T, Nishida H, Yoneda K, Kawai K, Toya D, Tanaka N, Mitsui T, et al. Efficacy of covered metallic stents in the treatment of unresectable malignant biliary obstruction. Cardiovasc Intervent Radiol. 2004;27:349–354.