

# Percutaneous Replacement of a Biliary T Tube

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The palliation of obstructive jaundice has been achieved in patients with bile duct tumor, sclerosing cholangitis, and benign strictures by the use of chronic external biliary drainage catheters [1]. Problems may occur when these tubes are inadvertently dislodged, become obstructed with inspissated bile, or disintegrate with age. Indwelling catheters obstructed by biliary sediment have been opened by using angiographic guide wires and torque cables, as well as by irrigation and suction [2-4]. Replacement of a dislodged T tube by a straight catheter has been described [5]. This paper outlines the method used for percutaneous replacement of a T tube in a patient who required external drainage and a biliary stent because of recurrent common duct stricture.

## Case Report

A 62-year-old male developed obstructive jaundice following a cholecystectomy in 1954. Recurrent episodes of jaundice and cholangitis resulted in multiple surgical attempts to reestablish continuity of the extrahepatic bile ducts. The patient had a metal prosthesis inserted in 1955 and a cholecystoduodenostomy in 1960 which required revision in 1964. In 1974, because of recurrent jaundice, external biliary drainage was instituted with a Y tube. The patient did well for 2 years but again developed jaundice and cholangitis when the tube became obstructed with inspissated bile (fig. 1). The right limb of the Y tube was cleared of bile by irrigation after passage of an angiographic guide wire. A kink in the limb to the left lobe of the liver prevented passage of the guide wire there. The patient's icterus cleared and he did well for 6 weeks. Cholangitis and jaundice recurred, and cholangiography showed both limbs of the tube to be obstructed. At this time the external portion of the tube was beginning to disintegrate. A soft rubber no. 12 French T tube was inserted into the extrahepatic biliary tree using a modified angiographic technique.

## Technique

The proximal portion of the biliary tree was catheterized with a steerable biliary catheter (Meditech, Watertown, Mass.). A guide wire was placed through the catheter, which was then removed (fig. 2). One arm of the T tube was threaded over the wire, which was then passed through the stem of the T tube. The other arm was folded against the stem, and an attempt was made to pass the T tube through the tract. This failed because of the small caliber of the tract. The T tube and guide wire were removed and replaced with the largest straight catheter which would pass along the tract (no. 18 French). The next day this was replaced with a no. 24 French catheter. The following day a no. 12 T tube was easily placed in the manner described. After the T tube had passed into the

common hepatic duct, the distal arm, which did not have the wire in it, unfolded in a manner similar to that of a toggle bolt. The arm dropped into the distal bile duct and through the biliary duodenal anastomosis. The wire was removed, and a cholangiogram showed the biliary tree to be patent (fig. 3). Good drainage was obtained and the patient did not experience pain with clamping. Traction on the tube did not dislodge it.

Evaluation 4 months later showed the tube to be unchanged in position and clear of debris. The patient was doing well.

## REFERENCES

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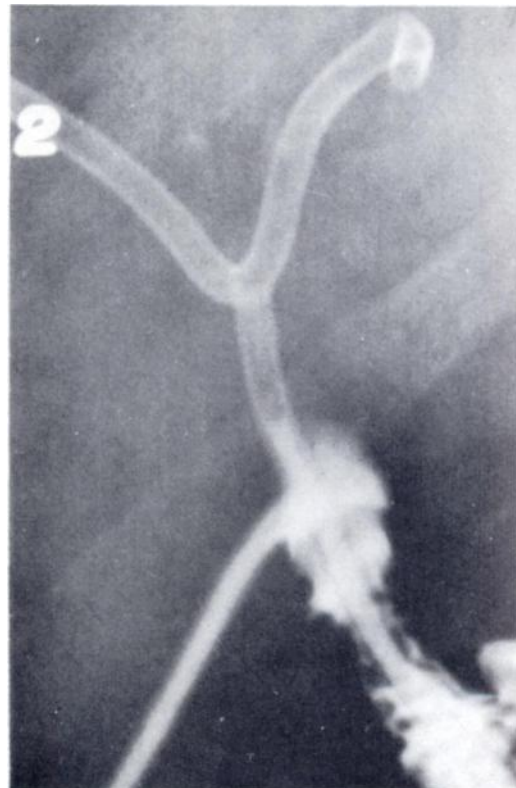


Fig. 1. — Cholangiogram showing arms of Y tube blocked with inspissated bile

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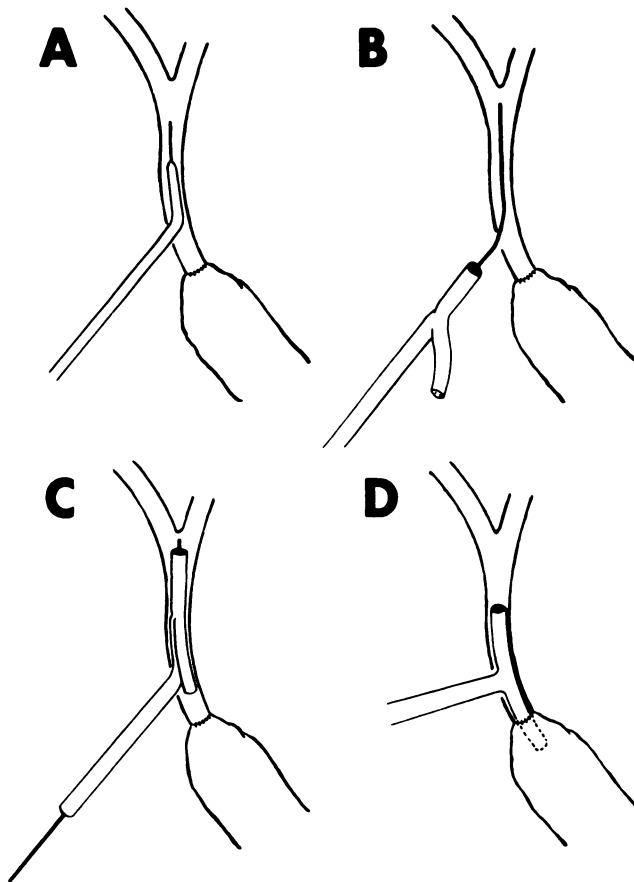


Fig. 2.—Technique. *A*, After removal of obstructed T tube, proximal common hepatic duct has been catheterized and guide wire passed. *B*, Catheter has been removed and guide wire threaded through T tube. *C*, T tube has been passed along wire so both limbs are in common hepatic duct. *D*, After removal of guide wire, T tube has been withdrawn slightly and distal limb has passed through anastomosis into duodenum.

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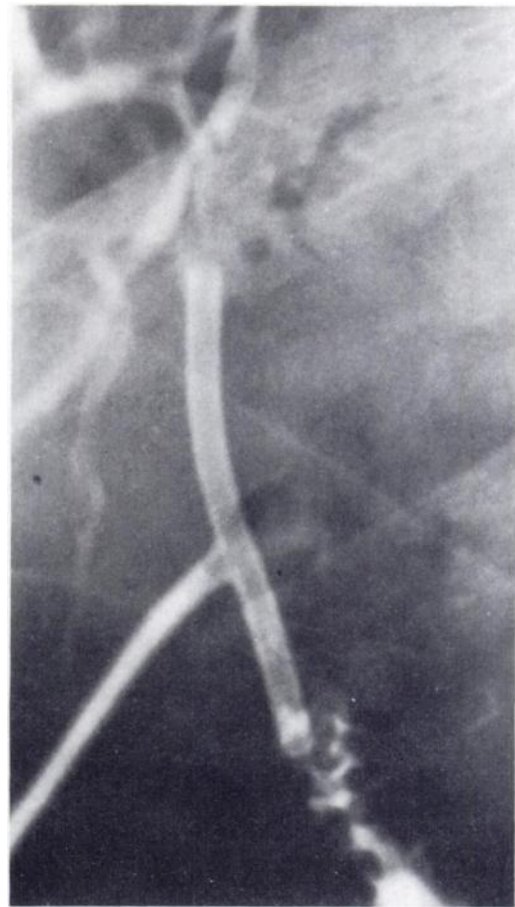


Fig. 3 — Postreplacement cholangiogram showing proximal tip of T tube in common hepatic duct and distal tip in duodenum

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