

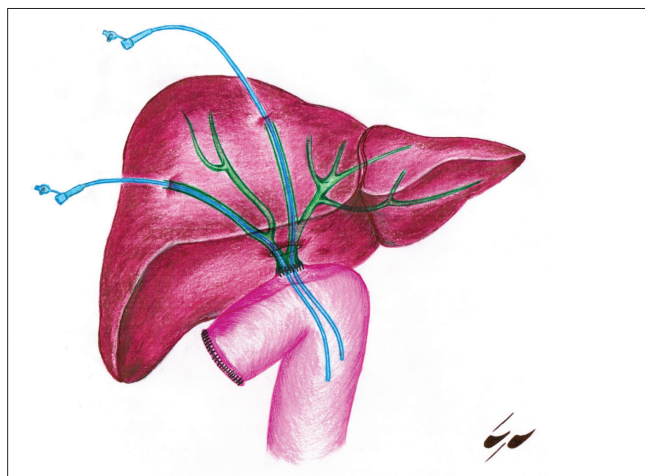
## Transhepatic transanastomotic stent, A reliable method for hepatojejunostomy and prevention of anastomotic leakage following radical resection in patients suffering from klatskin tumor

Sir,

Tumors affecting intra or extra hepatic biliary ducts referred to cholangiocarcinoma and Klatskin tumors are recently known as one of the malignancies associated with gastrointestinal tract.<sup>[1]</sup> It is mostly arises after the age of 50 years and distributed between both genders equally.<sup>[2]</sup> Up to 60% of the biliary tumors are hilar cholangiocarcinomas known as Klatskin tumors which the first time described by an American internist named Klatskin in 1965.<sup>[3]</sup> This tumor originates from epithelial cells laid down the intra and also extra hepatic bile ducts. The clinical manifestation depends on where the tumor mass is localized. Extra hepatic mass can cause usual biliary obstruction signs such as jaundice but intra hepatic malignancies may lead to late symptoms for example weight loss and abdominal pain.<sup>[4]</sup> It can be recognized from previous studies that some risk factors may predispose tumor development including primary sclerosing cholangitis (PSC), Liver flukes, congenital abnormalities and also viral hepatitis B and C.<sup>[5-7]</sup> In the case of end-stage disease with local invasion and distant metastasis the only reasonable procedure suggested is palliative drainage which can mainly improve the quality of life and increase the survival period after the operation.<sup>[8]</sup>

The respectability rate depends on the patient's characteristics such as ability to tolerate a prolong operation and absence of cirrhosis. The survival rate for patients undergone the surgery is estimated significantly higher than those undergone nonoperative management.<sup>[9]</sup> Biliary drainage prevents anastomotic leakage and also improves quality of life postoperatively.<sup>[1]</sup> This manuscript explained a reliable method for biliary draining in order to achieve minimal rate of anastomotic leakage following tumor resection.

During a period of 2 years, 12 cases including 7 males and 5 females with the age of 45-70 years were admitted due to hilar cholangiocarcinoma (Klatskin tumor) and were undergone the operation in Alzahra



**Figure 1:** We used a bougie number 5 to introduce a couple of stents percutaneously and passed them through the dome of the liver into both right and the left biliary ducts. After appropriate insertion of stents we have done the hepatojejunostomy anastomosis by the stent's guide. (figure by S.Dadkhal)

hospital, Esfahan, Iran. After complete resection of tumor mass, the method below was performed for the patients to reduce the complications.

Following complete resection of choledoch and extra hepatic biliary ducts and also gall bladder affected with the malignancy, we used a bougie number 5 to introduce a couple of stents percutaneously and passed them through the dome of the liver into both right and the left biliary ducts. After appropriate insertion of stents we have done the hepatojejunostomy anastomosis as the second step by the stent's guide [Figure 1].

Using the stents in those 12 cases showed the reduction of anastomosis leakage whereas in 4 cases this complication occurred in a very concise level and after two to three weeks anastomosis leakage were completely stopped and the patients were discharged from the hospital without any major morbidity.

It can be conclude that using transhepatic

transanastomotic stents and performing the anastomosis by using this technique can make the procedure safer to accomplish. Another advantage is to reduce the rate of anastomosis leakage as an important goal to improve quality of life of patients undergone the operation. As mentioned in the manuscript this new technique can show a reliable method for improvement of palliative resection procedure in patients suffering from Klatskin tumors but further randomized clinical trials with greater sample sizes seems to be necessary for evaluating the results and complications of this new method.

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