RÉSUMÉ
Drainage biliaire transhépatique chez un patient avec sténose maligne et anatomie altérée- rapport de cas

Introduction. Nous présentons le cas d’un patient de 72 ans admis à notre hôpital avec une jaunisse intense.

Case presentation. Deux semaines plus tard, le patient revient à notre hôpital avec le tube biliaire partiellement migré à l’extérieur et avec fuite du péridurathèter. Avant de récupérer le drainage biliaire percutané, nous avons décident d’insérer un tube de drainage biliaire par voie transhépatique percutanée en utilisant l’échographie et le guidage radiologique. Initialement, l’évolution était favorable avec une baisse de la bilirubine de moitié. Deux semaines plus tard, le patient revient à notre hôpital avec le tube biliaire partiellement migré à l’extérieur et avec fuite du péridurathèter.
the guidewire a biliary dilator and injected contrast to confirm position. Bile drainage was subsequently obtained by percutaneous placement of fully covered self-expandable metal stent (SEMS).

Conclusions. The particularity of the case is the fact that biliary drainage can be difficult to obtain when the anatomy has been modified. In these cases, percutaneous drainage under ultrasound guidance represents an alternative to ERCP, when the duodenum is obstructed and the papillary access is impossible.

Keywords: percutaneous biliary drainage, ultrasound, radiologic guidance.

INTRODUCTION

Over the past decades, biliary interventions have evolved and increased in prevalence and utility. Current percutaneous biliary interventions include percutaneous transhepatic cholangiography (PTC), biliary drainage and percutaneous cholecystostomy.

Percutaneous Transhepatic Biliary Drainage (PTBD) is indicated in patients with non-operative lesions, when endoscopic stenting using endoscopic retrograde cholangio-pancreatography (ERCP) is impossible due to malignant duodenal infiltration, or because of modified postoperative anatomy of the digestive tract, complications or severe general state of the patient. In these patients, PTBD plays an important role in treatment. The procedure brings a decrease in plasma bilirubin level, as well as improvement in life quality by relieving symptoms associated with jaundice, thus optimizing the clinical state of patient, allowing for resection or palliative radio or chemotherapy.

Conclusions. The particularity of the case is the fact that biliary drainage can be difficult to obtain when the anatomy has been modified. In these cases, percutaneous drainage under ultrasound guidance represents an alternative to ERCP, when the duodenum is obstructed and the papillary access is impossible.

Keywords: percutaneous biliary drainage, ultrasound, radiologic guidance.

CASE PRESENTATION

A 72-year-old man presented to our hospital with intense jaundice, dark urine, and light-colored stools. Regarding his disease history, we must mention that he had been operated, 5 months earlier, for massive carcinoma of the uncinate process of the pancreas. At that time, the patient presented important weight loss, vomiting, and abdominal pain, but had no jaundice. The computed tomography showed pancreatic tumor complicated with total stenosis of the second duodenum. The approach was a palliative intervention. Surgeons created a posterior transmesocolic gastrojejunostomy and Braun’s anastomosis in order to restore digestive transit. Five months later, at presentation, laboratory findings showed cholestasis (bilirubin level – 16 mg/dl), hepatic cytolysis, positive inflammatory tests (erythrocyte sedimentation rate – 50 mm/h and positive C reactive protein), moderate anemia. We performed esophago-gastro-duodenoscopy, which revealed total stenosis of the duodenum because of tumoral invasion and gastrojejunostomy but we could not pass the stenosis, so papilla was unreachable. The ultrasound examination showed dilated intra- and extrahepatic bile ducts (Figure 1, Figure 2) and hypoechoic pancreatic mass with imprecise delimitation (Figure 3).

Conclusions. La particularité du cas est le fait que le drainage biliaire peut être difficile à obtenir lorsque l’anatomie a été modifiée. Dans ces cas, le drainage percutané sous échographie représente une alternative à la cholangio-pancréatographie endoscopique rétrograde (CPRE), lorsque le duodénum est obstrué et l’accès papillaire est impossible.

Mots-clés: drainage biliaire percutané, échographie, guidage radiologique.
Initially, the patient had a favorable evolution and the bilirubin level dropped to half, 36 hours after the procedure. He was discharged two days post procedure with a satisfactory general state.

Two weeks later, the patient returned to our hospital with the biliary tube partially migrated outside and with pericatheter leakage. Laboratory results revealed a total bilirubin of 5 mg/dl, hepatic cytolysis, and mild anemia.

We decided to retrieve percutaneously the biliary drainage catheter. Before that, we inserted under fluoroscopic guidance a guidewire (Jagwire .035") which was advanced via the drainage, through the left intrahepatic bile duct into the common duct, papilla, duodenum. Afterward, we advanced through the guidewire a biliary dilator and injected contrast to confirm position. The cholangiogram revealed a common bile duct of 10 mm, with a total stop of the contrast on last 2 cm. We inserted the pediatric Olympus endoscope N180, but it was impossible to overpass the duodenal stenosis. Therefore, we decided to insert percutaneously a fully covered self-expandable metal stent (SEMS) of 80/8 mm under fluoroscopic guidance and endoscopic visualization (Figures 4, 5).
We successfully deployed the stent through the papilla in the duodenum, the final position being confirmed by injecting contrast via a biliary dilator.

After the procedure, we repeated the ultrasound which confirmed the correct position of the stent (Figure 6) and also the presence of significant aerobilia, demonstrating the biliary drainage into the duodenum (Figure 7).

Two days later, the patient was discharged with satisfactory general state and a bilirubin level of 2 mg/dl.

This case highlights the need of ultrasound guidance combined with radiological guidance in performing PTBD in a patient with modified digestive anatomy.

DISCUSSIONS

In a patient with obstructive jaundice caused by biliary malignant stenosis, palliation is usually achieved by endoscopic insertion of an endoprosthesis for internal bile drainage. Endoscopic treatment can be difficult or impossible after duodenal malignant obstruction or after surgery when the normal anatomy has been changed. In these patients, percutaneous methods can be used to achieve adequate bile drainage.

We presented from our practical experience the case of a patient with obstructive jaundice due to pancreatic carcinoma. One particularity of this case report is that the patient had altered anatomy which made impossible the drainage by using classical methods. The alternative would have been the surgical approach, with more immediate risks. So, we performed PTBD using ultrasound and radiological guidance. Another particularity could be the paucity of reports regarding this approach if we take into consideration that ERCP and biliary stenting fails in only 5–10% of patients with malignant biliary obstruction because papilla is inaccessible.

Percutaneous Transhepatic Biliary Drainage (PTBD) was introduced in the 1960s. It is most often performed using a hybrid approach with ultrasound and radiological guidance. PTBD can provide biliary drainage in three ways. The simplest of these is external drainage through a percutaneous tube which exits the skin. The method is typically used when a tight stricture cannot be traversed with a guidewire. The second technique involves inserting a directional catheter through the percutaneous sheath and advancing it through the biliary obstruction. The internal-external catheter allows bile to drain externally and/or internally. The third technique establishes internal drainage by percutaneous placement of a plastic or self-expandable metal stent across the biliary stricture.

Indications for percutaneous biliary drainage include relief of obstructive jaundice, cholangitis, brachytherapy access for malignant lesions, failed endoscopic biliary drainage or surgically altered anatomy which usually precludes endoscopy.

Studies have shown that PTBD prolongs life of the incurably ill, but is burdened with a large number of complications and inconveniences in further treatment. The complication rate can be important, and depends on the patient status and diagnosis. Patients with cholangitis, stones, coagulopathies, proximal or malignant obstruction, will have higher complication rates.

Complications may occur during the procedure (intrahepatic bile ducts perforation, hemobilia, extrahepatic bile ducts perforation) or after the procedure (drain dislocation, hemobilia, peritonitis, sepsis, biliary fistula, fluid accumulation).

Several authors have suggested that complications related to internal/external tubes as a result of inadequate bile flow and tube dislodgment (sepsis and hemorrhage) can be minimized by placing a
self-retaining tube of at least 10 Fr through the am-pulla or anastomosis\textsuperscript{8}. Moreover, PTBD should not be performed on patients with non-dilated bile ducts, because of high risk of complications\textsuperscript{9}.

In our case, the post-procedure complication was drain dislocation, which also appeared in other studies\textsuperscript{12}. After this complication, we decided to retrieve the drain and insert percutaneously a fully covered self-expandable metal stent. Relieving bile ducts tension with subsequent bile supply to the alimentary tract caused immediate improvement in the patient’s general condition.

Endoscopic ultrasound (EUS)-guided biliary drainage (EUS-BD) is a recently developed alternative to PTBD for patients in whom ERCP is not an option\textsuperscript{13}. Also known as ESCP (endosonographic cholangiopancreatography), it combines EUS and ERCP techniques, to obtain biliary of pancreatic drainage.

The complexity of ESCP, with a significant learning curve and the potential for complications and technical failure, makes it very inaccessible even though in the last decade has started to replace PTBD\textsuperscript{4}.

**Conclusions**

Jaundice secondary to malignant bile duct obstruction is commonly treated by endoscopic insertion of an endoprosthesis. If the endoscopic procedure is unsuccessful or cannot be performed, percutaneous drainage using a hybrid ultrasound and radiological guidance technique by inserting either a biliary drainage or a metallic expandable stent is a generally accepted alternative, in selected patients.

**References**