

Un uncommon complication of liver biopsy: Obstructive jaundice from blood clots



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An uncommon complication of liver biopsy: obstructive jaundice from blood clots

INTRODUCTION: *The AA. report on a case of one young woman who developed obstructive jaundice induced by hemobilia after percutaneous liver biopsy, successfully treated with endoscopic retrograde cholangiopancreatography (ERCP)*
METHODS: *An endoscopic sphincterotomy was performed with extraction of the clots*
OBSERVATIONS: *Four weeks after ERCP the patient was healthy and asymptomatic, valuated as outpatient*
CONCLUSIONS: *The role of ERCP in managing biliary sequelae of hemobilia is well established: biliary decompression is required if and intrabiliary clot causes obstructive jaundice and/or biliary colic. ERCP is feasible and leads to relief of symptoms in most cases, without the need of surgery*

KEY WORDS: ERCP, Haemobilia, Liver biopsy, Obstructive jaundice.

Introduction

Hemobilia is a rare clinical condition caused by a pathologic and abnormal communication between a hepatic vessel and the biliary ducts. A wide range of conditions can lead to haemobilia: infection, cholelithiasis, hepatic tumors, arteriovenous malformations, coagulopathy, and iatrogenic trauma¹. With the increasing use of interventional radiologic procedures, it appears that hemobilia is becoming more common. We report the case of one young woman who developed obstructive jaundice by hemobilia after percutaneous liver biopsy. An endoscopic retrograde cholangiopancreatography (ERCP) and endoscopic sphincterotomy (ES) with clot extraction led to relief of symptoms, with a favourable outcome.

Case report

A 38-year-old woman that was cholecystectomized 2 years before underwent to liver biopsy for suspected

autoimmune hepatitis. Laboratory test values before and after biopsy are in Fig. 1.

The biopsy was easily accomplished using a 2.8mm Menghini-Type needle, according the American College of Physicians practice guidelines² but the result not confirmed the clinical suspect (normal).

Ten days after liver biopsy, the patient developed transient mild abdominal pain in the right upper quadrant. Fifteen days after liver biopsy she has an episode of melena, related to steroidal therapy (prednisone 25 mg per os daily) without use of PPI.

At the admission in our hospital 20 days after the episode of melena, the patient experienced epigastric pain radiating into the back and to the right upper and lower quadrants, with mild jaundice but no fever. Laboratory tests values at the admission are showed in Fig. 1. CT scans and US of the abdomen showed common bile duct sludge and amorphous material.

At ERCP no bleeding gastric lesions were documented: the ampulla was normal, without any active bleeding; cholangiography showed two irregular, longitudinal, streaklike filling defect (6mm in diameter) in the upper part of the dilated common bile duct (13mm in diameter) (Fig. 2a).

An endoscopic sphincterotomy was performed and one blood clot evacuated spontaneously; extraction of the residual clot was achieved with Dormia basket and balloon catheter (Fig. 2b).

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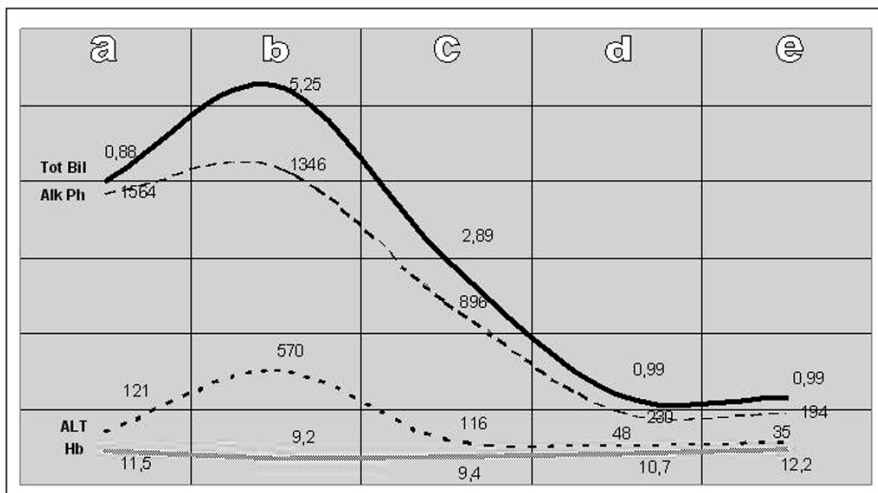


Fig. 1: Laboratory test values before liver biopsy (a), after the melena episode (b), at the admission (c), after the ERCP (d), at the discharge (e)
 Legend: Tot Bil= Total bilirubin (normal <1.10 mg/dl), Alk Ph= Alkaline phosphatase (normal < 104 IU/U),ALT= Alanine aminotransferase (normal < 37 U/l); Hb= Hemoglobine (normal 12-17 g/l)

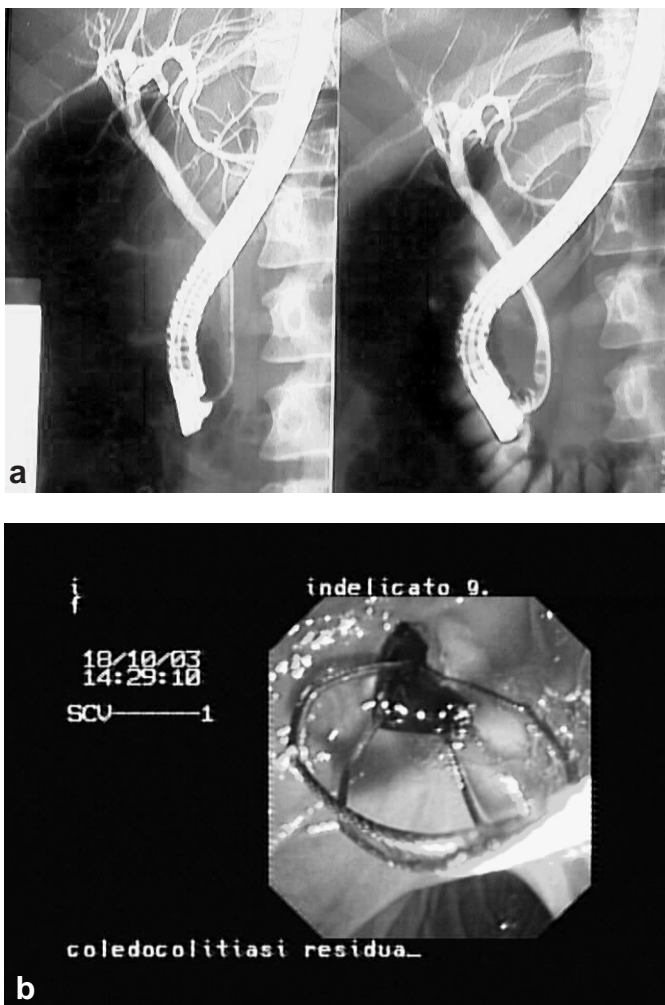


Fig. 2: ERCP: a) Cholangiography; b) Clot extraction with Dormia basket.

At the end of ERCP, intrahepatic and extrahepatic biliary tree were normal. Laboratory test values after ERCP are reported in Fig. 1.

The patient was dismissed 2 days after the procedure in well good condition, and normalization liver function tests and red blood cell count (Fig. 1). Four weeks after ERCP the patient was in good health.

Discussion

Complications of liver biopsy are rare but potentially lethal. A thorough understanding of the indications, contraindications, technique, and common complications and their management is imperative.

Among the various causes of hemobilia, iatrogenic trauma related to liver biopsy and percutaneous transbiliary catheterization are most common^{3,4}, but the bleeding into the biliary ducts as result of percutaneous liver biopsy has previously been observed in less than one per 1000 procedures^{5,6} (Haemorrhage: intraperitoneal = 0.03-0.7%, intrahepatic and/or subscapular = 0.059-23%, hemobilia = 0.059-0.2%)⁷.

The mortality rate following liver biopsy is between 0.01% and 0.1%, with the main causes of death being intraperitoneal haemorrhage and biliary peritonitis secondary to puncture of the gallbladder⁶.

Francis Glisson reported the first known case of hemobilia and the possible etiologies were summarized in a review of 544 cases⁷: accident trauma (33%), iatrogenic trauma (28%), gallstones (11%), acalculous inflammation (10%), vascular conditions (10%), neoplastic disease (5%) and unspecified causes (3%).

The classic triad of upper GI bleeding, jaundice, and right upper quadrant pain, originally described by Quinke in 1871, occurs only in 30%-40% of cases of hemobilia. The frequency of these presenting symptoms are as follows: right upper quadrant pain (68%), hematemesis (72%), melena (89%), and jaundice (62%).

The classic symptom complex occurs commonly with hemobilia of traumatic origin (e.g.: percutaneous transbiliary catheterisation, percutaneous liver biopsy) com-

pared with nontraumatic cases. Complications of hemobilia include cholecystitis, pancreatitis, and formation of clots in the biliary tree leading to obstructive jaundice^{8,9}. Although mild jaundice is common, marked jaundice is rare. Jaundice associated with hemobilia may be multifactorial, but biliary tract.

Obstruction cause by blood clots plays an important role, especially when jaundice is severe.

Clots in the biliary tree may resolve in any one of four ways¹⁰: dissolution due to fibrinolytic properties of the bile, spontaneous extrusion from the ampulla, a combination of dissolution and obstructive jaundice, cholangitis, cholecystitis, or pancreatitis.

The clotting properties of blood in bile were studied by Sandblom et al^{11,12}. Profuse hemobilia is thought to result from the mixing of blood and bile, with uninterrupted flow of blood to the intestine because of the difference in specific gravity between blood and bile, and subsequent clot formation. Once this occurs the interior of the clot remains sequestered from further contact with bile with its fibrinolytic properties.

Conclusions

Biliary decompression is required if an intrabiliary clot causes obstructive jaundice and/or biliary colic. This may be achieved by intermittent lavage with saline solution together with aspiration through a nasobiliary catheter and endoscopic biliary sphincterotomy, with or without balloon extraction of clots¹³.

The role of ERCP with endoscopic sphincterotomy in managing biliary sequelae of haemobilia is already well established: endoscopic sphincterotomy with clot extraction (Dormia basket and/or balloon catheter) is feasible and leads to relief of symptoms in most cases, without the need of surgery. In selected patients, when conventional endoscopic technique are unsuccessful in relieving biliary obstruction caused by blood clots, infusion of a thrombolytic agent through a nasobiliary catheter seems to be a visible alternative¹⁴.

Riassunto

INTRODUZIONE: Gli AA. riportano il caso di una giovane donna che ha sviluppato un episodio di ittero ostruttivo da emobilia dopo una biopsia epatica percutanea, trattato con successo con una ERCP.

METODI: È stata eseguita una ERCP con sfinterotomia endoscopica (SE) ed estrazione dei coaguli.

OSSERVAZIONI: 4 settimane dopo la ERCP la paziente è rimasta asintomatica ed in buona salute sempre valutata ambulatoriamente.

CONCLUSIONI: Il ruolo della ERCP nella gestione delle complicanze biliari della emobilia è ben definito: se un coagulo causa ostruzione della via biliare principale (VBP) con ittero ostruttivo o coliche biliari, la decompressione biliare è indicata. La ERCP è un metodo sicuro e può portare alla risoluzione dei sintomi, senza il ricorso alla chirurgia.

References

- 1) Nilsson U, Evander A, Ihse I, Lunderquist A, Mocibob A: *Percutaneous transhepatic cholangiography and drainage. Risk and complications.* Acta Radiol, 1983; 24:433-36.
- 2) Bravo AA, Sheth SGF, Chopra S: *Liver biopsy.* N Engl J Med, 2001; 344(7):495-500.
- 3) Sandblom P, Saegesser F, Mirkovitch V: *Hepatic hemobilia: haemorrhage from the intrabiliary tract, A review.* World J Surg, 1984; 8:41-50.
- 4) Stambuchik EC, Pitt HA, Pais SO, Mann Li, Lois IF, Gomes AS: *Percutaneous transhepatic drainage. Risk and benefit.* Arch Surg, 1983; 148:853-59.
- 5) Merrel SW, Schneider PD: *Hemobilia: Evolution of current diagnosis and treatment.* West J Med, 1991; 155:621-28.
- 6) McGill DB, Rakela J, Zinmeister AR: *A 21-year experienced with major haemorrhage after percutaneous liver biopsy.* Gastroenterology, 1990; 99:1396-400.
- 7) Reichert CM, Weisenthal LM, Klein EG: *Delayed haemorrhage after percutaneous liver biopsy.* J Clin Gastroenterol, 1983; 5(3):263-66.
- 8) Bloeché C, Izbicki IR, Rashed MYT, El-Sefi T, Hosch SB, Knoefel WT, et al.: *Hemobilia: Presentation, diagnosis, and management.* Am J Gastroenterol, 1994; 2:1537-40.
- 9) Pollack CV: *Hemobilia presenting as lower gastrointestinal haemorrhage without pain and jaundice: A case report.* J Mississippi State Med Assoc, 1990; 31:1-3.
- 10) Wagner W, Lundell CJ, Donovan AJ: *Percutaneous angiographic embolization for hepatic arterial hemorrhage.* Arch Surg, 1985; 120:1241-49.
- 11) Sandblom P, Mirkovitch V: *Minor hemobilia.* Ann Surg, 1979; 19:254-64.
- 12) Sandblom P, Mirkovitch V, Saegesser F: *Formation and fate of fibrin clots in the biliary tract.* Ann Surg, 1977; 185:356-66.
- 13) Clancy TB, Warren RL: *Endoscopic treatment of biliary colic resulting from hemobilia after nonoperative management of blunt hepatic injury: Case report and review of literature.* J Trauma, 1997; 43:527-29.
- 14) Moparty RK, Brown RD, Layden TJ, Chirravuri V, Wiley T, Venu RP: *Dissolution of blood clots in the biliary ducts with a thrombolytic agent infused through nasobiliary catheter.* Gastrointest Endosc, 2002; 56(3):438-43.

