

CORRESPONDENCE

Liver biopsy: Small procedure with large complications

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Percutaneous ultrasound guided liver biopsy is a routine procedure done on outpatient basis. Sedation or anaesthesia is usually required for uncooperative and paediatric or neonatal patients. A neonate at 20th day of life, weighing 2.7 kg was admitted to our institution for persistent jaundice and nasal bleed and blood in stool for last 2 days. Parents gave history of high coloured urine and yellowish discolouration of sclera since birth. His liver function tests were deranged (AST/ALT: 167/180 U/l; alkaline phosphate: 1595 U/l and serum bilirubin total / direct: 21/9 mg/dl) with a normal coagulation profile. USG abdomen showed mild hepato-splenomegaly with contracted gall bladder. No extra hepatic biliary tract obstruction was seen. Percutaneous ultrasound guided liver biopsy was planned.

In OR, all routine monitors were attached. Glycopyrolate (0.005 mg/kg) followed by ketamine 0.2 mg/kg IV and sevoflurane by mask was used for induction and maintenance of anaesthesia. Procedure was completed in about ten minutes. We monitored patient for four hours in post-operative recovery room for haemodynamic parameters and possible pain, and then handed over to mother.

Ultrasound guided liver biopsy reduces the risk of complications by avoiding trauma to large intra-hepatic vessels and other body organs in vicinity and by decreasing the attempts to obtain good biopsy sample. Complication may range from mild pain to death in about 0.0083 to 0.03% cases.¹

Pain is the most common complication of percutaneous liver biopsy, present in up to 84% of patients. It may range from mild discomfort to severe abdominal pain due to active bleed or trauma to adjacent structures. Moderate to severe pain however is seen only in 1-5% of the patients. Mild pain following the procedure can be managed easily with small amounts of opioids. Premedication with

midazolam and fentanyl also decreases incidence of post biopsy pain and anxiety. Use of analgesic during biopsy is often overlooked due to involvement of only needle puncture and short duration of procedure. In cases of persistent and severe pain, significant intraperitoneal bleed should be ruled out.²

Bleeding is another major complication in these patients, especially if coagulation profile is deranged. Almost all patients have transient bleeding from capsular puncture site. The risk of major bleeding is reported to be around 0.16% (1 in 2500 to 1 in 10,000 biopsies).³ Minor bleeding (1 in 500 procedures) may present as pain or reduced blood pressure with tachycardia. Bleeding can manifest as hemoperitoneum (0.3 to 0.7%), intrahepatic hematoma (0.59 to 0.23%) or hemobilia (0.058- 0.2%).⁴ Various factors which influence risk of bleeding includes coagulopathy, elderly age, liver pathology as cirrhosis, ascites, malignancy and number of attempts for biopsy. Corrections of numerical value of PT- INR with use of fresh frozen plasma and recombinant factor VII to reduce the incidence of bleeding has no proven role especially if INR <2 (mild coagulopathy).^{5,6} Platelet transfusion is to be considered, prior to procedure in cases of low platelet count (50,000 to 60,000). Massive bleeding is usually clinically evident within 2 to 4 hours but may occur up to one week after biopsy, and is the main cause of death in these patients.

In patient with coagulopathy, transvenous liver biopsy (jugular approach) is considered safe and is recommended.

Other complications which can be associated with this minor procedure include pneumothorax, hemothorax, trauma to visceral organs, intrahepatic arteriovenous fistula, infections and arrhythmias.

To conclude, liver biopsy, though a minor procedure, can be associated with many complications; recognize them timely and manage with appropriate interventions.

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