hepatico-jejunostomy is generally regarded as innocuous.\(^2\) The development of cholangitis is usually assumed to be due to obstruction of the stoma.\(^3\) Other causes include primary and coexistent pathogenic factors like intrahepatic stricture, intrahepatic calculi, improperly constructed enteric conduits,\(^4\) and rare causes like volvulus of the afferent loop.

Though we could not demonstrate a vascular block, the histology in our patient suggested ischemic etiology. This could have been due to vascular occlusion or ischemia due to kink in vessels. This resulted in biliary stasis and recurrent cholangitis. Percutaneous dilatation could not be done as the intestinal loop stricture was long and irregular. Hence, it was treated with surgical excision. Another cause of obstruction is anisoperistaltic loop causing recurrent cholangitis\(^5\) but this was not the case in our case. Intestinal stricture following choledochojejunostomy has not been reported.

**References**


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**Cholestatic liver injury due to ibuprofen**

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Ibuprofen is a member of the propionic acid class of NSAID. We report a 35-year-old man with ibuprofen-induced acute severe cholestatic liver injury. He recovered after seven months. [*Indian J Gastroenterol* 2005;24:77-78]

Almost all the nonsteroidal anti-inflammatory drugs (NSAID) currently available have been reported to cause liver damage that can range from minor transient abnormalities in liver function tests to fulminant hepatic failure. Ibuprofen is a member of the propionic acid class of NSAID, which is widely used for treatment of inflammatory conditions and musculoskeletal pain. Only a few cases of ibuprofen injury have been reported.

A 35-year-old man presented with history of road accident leading to minor abrasions and spasm of the left ankle. The patient was treated with injection tetanus toxoid and oral ibuprofen. After ingesting the first dose of 400 mg ibuprofen, the patient developed maculopapular skin rash with itching on the whole body within two hours. He was treated with antihistaminics and hydrocortisone; ibuprofen was withdrawn. The skin rash disappeared within five days, with residual hyperpigmented spots. Seven days later, the patient developed jaundice and pruritus, which were progressive. There was no associated abdominal pain, fever or anorexia. Physical examination revealed icterus, hyperpigmented spots on the whole body, and scratch marks. Examination of the abdomen did not reveal any abnormality.

**Investigations:** hemoglobin 11.5 g/dL, total leukocyte count 8600/cm\(^3\) (P 76%, L 20%, M 4%); prothrombin time was 14 s (control 14). Serum was negative for IgM anti-HAV, IgM anti-HEV, HBsAg, anti-HCV antibodies, anti-nuclear antibodies, anti-smooth muscle antibodies, and anti-mitochondrial antibody. Blood lipid profile, X-ray chest, ultrasonography of the abdomen, and upper gastrointestinal endoscopy were normal. ERCP done to exclude sclerosing cholangitis revealed normal bile duct and intrahepatic biliary radicals. Liver biopsy after nine weeks of icterus revealed maintained liver architecture, inflammation, marked cholestasis, and spotty necrosis of hepatocytes with focal areas of ballooning and fatty changes (Fig).

The jaundice, pruritus, serum bilirubin and alkaline phosphatase increased gradually for three months after the onset of icterus. The biochemical abnormalities remained static for two months and then started decreasing gradually over the next two months. The patient was treated with antihistaminics and ursodeoxycholic acid (25 mg/Kg/day) till his jaundice and pruritus subsided and the liver function tests became normal. Seven months after the onset of hepatotoxicity there was complete improvement in jaundice, pruritus and tests of liver function.

![Liver histology showing maintained liver architecture, inflammation, marked cholestasis, and spotty necrosis of hepatocytes with focal areas of ballooning and fatty changes (H&E, 40X)](image-url)
We have described a case of ibuprofen-induced cholestatic liver injury who recovered completely after seven months. Hospitalization for drug-induced acute liver injury in the absence of viral infection or any other well-defined pathologic feature is a rare event. The use of NSAID has been associated with a range of hepatic abnormalities like asymptomatic increase in serum liver enzyme activity, mild reversible hepatitis, to rare instances of fatal fulminant hepatitis. The main types of acute hepatic injuries are either cyototoxic or cholestatic. Biochemical tests of the liver have been found to have inadequate sensitivity and specificity to predict serious clinical liver injury. Most abnormal liver biochemistry values found in the general population exposed to NSAID are transient.

Some form of hepatic abnormality has been reported with all the currently available NSAID. Prescott concluded that diclofenac, phenylbutazone, and sulindac had a higher potential for hepatotoxicity than fenamates and piroxicam. The propionic acid derivatives currently marketed (ibuprofen, naproxen, fenoprofen) have a very low incidence of hepatotoxicity.

In the study by Garcia Rodriguez et al, of 625,307 subjects with 2,130,820 NSAID prescriptions, 23 developed liver injury, of which 5 were due to ibuprofen. Of the 23 cases, six had hepatocellular liver injury, fifteen had cholestatic liver injury, and two had mixed liver injury. In 14 of 23 patients, as in our patient, the injury developed on taking the first NSAID prescription. There was a predominance of cholestatic liver injury among patients currently using NSAID, whereas the principal type of liver injury when not using these drugs was hepatocellular. The risk factors for NSAID-induced hepatotoxicity were first dose, use of these drugs in rheumatoid arthritis versus osteoarthritis, and use with other hepatotoxic drug. Johnson et al evaluated 13,230 patients dispensed ibuprofen and found no hospitalization for liver disease within 90 days of dispensing the drug.

Elevation of AST and ALT has been reported in 9% and 16%, respectively of normal volunteers taking 2400 mg/day of ibuprofen or more. Several cases of acute poisoning with ibuprofen overdose have been reported. A single large dose of ibuprofen (>20 g) has been reported to cause unresponsive severe metabolic acidosis, renal failure, mixed hepatitis-cholestatic hepatic reaction, and thrombocytopenia. Nonetheless, ibuprofen is considered a relatively safe drug.

References

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Hyperhomocysteinemia presenting as superior mesenteric artery thrombosis

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We report a 23-year-old man who presented with acute abdomen. At laparotomy, he was diagnosed to have superior mesenteric artery thrombosis, with consequent extensive intestinal gangrene extending from the proximal jejunum till the mid transverse colon. He subsequently developed dry gangrene of the digits. Further evaluation showed that he had marked hyperhomocysteinemia. The gangrenous bowel was resected, and the homocysteine level normalized with folic acid supplementation. He is well at 1-year follow up. His brother, who was asymptomatic, was also detected to have hyperhomocysteinemia, which responded to folic acid.[Indian J Gastroenterol 2005;24:78-79]

Superior mesenteric artery thrombosis is an important vascular cause for acute abdominal pain. It is more common among the elderly, and in those with predisposing diseases like atrial fibrillation. We report a young man with superior mesenteric artery thrombosis who on evaluation was found to have underlying hyperhomocysteinemia.

A 23-year-old man was admitted with rapid-onset, continuous, severe, non-radiating, epigastric pain of 12 hours’ duration, which was associated with a few episodes of vomiting at the onset. There was no fever, hematemesis, melena or jaundice. He was a fairly heavy alcohol consumer since five years, and had been diagnosed to have systemic hypertension since 4 months. Examination was unremarkable except for elevated blood pressure (180/110 mmHg), mild epigastric tenderness, and slug-