

## Case Report

## Endoscopic Retrograde Cholangio Pancreatography under Ultrasound Guidance without Fluoroscopy in a pregnant woman

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### SUMMARY

We report a pregnant woman presenting in her early second trimester with acute cholangitis due to common bile duct stones who successfully underwent ERCP, stone extraction and stenting under transabdominal ultrasound guidance without fluoroscopy. This case report is to highlight the concept of accurate placement of various accessories in the common bile duct while doing ERCP without fluoroscopy in special situation like pregnancy.

**Key words:** ERCP in pregnancy, ultrasound guidance, ERCP without fluoroscopy

### INTRODUCTION

Pregnancy is associated with increased risk of gall-stone formation. The exact mechanism is not known, but the possible factors are increased lithogenicity of bile, increased stasis of bile and decreased gall bladder emptying.<sup>1</sup> The presence of common bile duct stone presenting as acute cholangitis or pancreatitis can pose an additional problem in pregnant women because ERCP needs to be done without fluoroscopy since radiation used in fluoroscopic screening can induce premature labour and teratogenicity.<sup>2</sup> Hence a safe way of doing ERCP without fluoroscopy during pregnancy becomes a necessity.

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### CASE REPORT

A 28 year old pregnant woman with 20 weeks amenorrhoea presented with seven days history of right upper quadrant pain associated with vomiting, fever with chills and rigors and jaundice. On examination she was icteric and had right hypochondrial tenderness. Her investigations revealed an elevated total leucocyte count (13,000 cells/cumm) raised serum bilirubin (direct fraction-3mg/dL, indirect-1.5mg/dl), serum alkaline phosphatase (280IU- twice the upper normal limit) and liver enzymes (AST-95 IU/L, ALT-115 IU/L thrice the upper normal limit). Trans-abdominal sonography revealed multiple calculi in the gall bladder, dilated intrahepatic biliary radicles and dilated common bile duct (9.9mm) with two calculi in the lower end of the common bile duct (fig 1).

The patient underwent ERCP after informed consent under intravenous conscious sedation (injection Midazol-

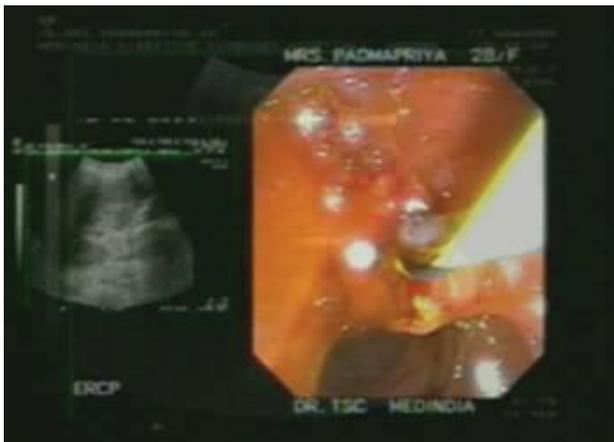


**Figure 1.** Ultrasonography abdomen showing cholelithiasis and choledocholithiasis.

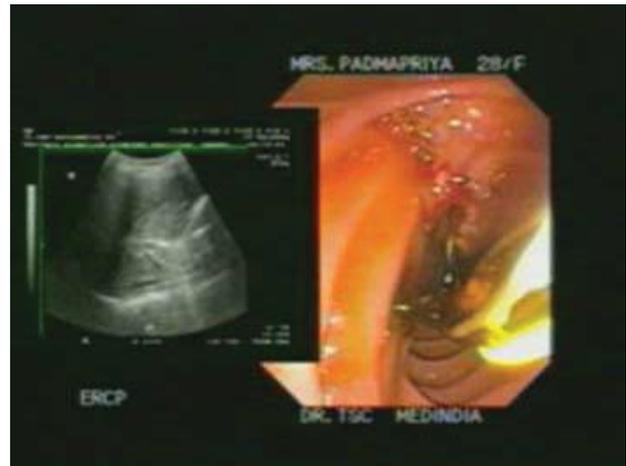
am). The patient's vitals were meticulously monitored by an anaesthetist throughout the procedure. The patient was put in the left lateral position. The side viewing endoscopy revealed a normal looking ampulla. Free and wire guided cannulation failed. So ampullary precut was done using Huijbregtse triple lumen needle knife, HPC – 3 (Wilson Cook). The common bile duct was cannulated with Tandem xLcannula (Boston Scientific Microvasive). The radiologist was on the right side of the patient and transabdominal ultrasound study was carried out using (Cor-evision-Pro Toshiba) curvilinear probe (3.75Mhz). Only minimal air was insufflated by the endoscopist to facilitate the ultrasound examination.. The position of the cannula and the guidewire were confirmed to be in the common bile duct by the ultrasound examination (Fig 2). Common bile duct sphincterotomy was carried out using wireguided ultratome XL sphincterotome (Boston Scientific Microvasive make). Two stones were extracted using FG 22 Q Dormia basket (Olympus) under ultrasound guidance (Fig 3). Since cholecystectomy was not planned immediately, a 10french Amsterdam type of stent was deployed in the common bile duct under the ultrasound guidance (Fig 4). Every step was scanned by the sonologist to confirm the position of various accessories and the stent in the common bile duct. Fluoroscopy was not used throughout the procedure. The entire procedure was uneventful and the patient was discharged after 24 hours and advised cholecystectomy and stent removal at a later date.

## DISCUSSION

Emergency ERCP is indicated in acute cholangitis and pancreatitis caused by common bile duct stones even dur-



**Figure 2.** The position of the cannula and the guidewire were confirmed to be in the common bile duct by the ultrasound examination.



**Figure 3.** Common bile duct stones were extracted using FG 22 Q Dormia basket (Olympus) under ultrasound guidance.



**Figure 4.** Amsterdam type of stent was deployed in the common bile duct under the ultrasound guidance.

ing pregnancy. Hazards of radiation in pregnancy while doing therapeutic endoscopy procedures have been well documented.<sup>2</sup> Earlier many techniques have been performed to carry out ERCP during pregnancy, namely minimal radiation exposure,<sup>3</sup> usage of lead apron over the pelvis of the pregnant woman to shield the gravid uterus,<sup>4</sup> cannulation and withdrawing the bile followed by sphincterotomy and stenting but without accurate confirmation.<sup>5</sup>

We report a complete ERCP procedure performed in a pregnant woman in her early second trimester under transabdominal ultrasound guidance without fluoroscopy. Such a technique has not been reported widely and this methodology can be performed safely by a team of experts in therapeutic endoscopy and transabdominal sonography.

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