

# Laparoscopic Cholecystectomy for Left Sided Gallbladder in *Situs Inversus Totalis*

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## ABSTRACT

*Situs inversus totalis* is a rare condition affecting intra abdominal and intra thoracic organs. *Situs inversus* usually remains asymptomatic. Life expectancy is normal in the absence of rare cardiac abnormalities. Left sided gallbladder can occur even without *situs inversus totalis*. Cholelithiasis is not more common in patients with *situs inversus* than the general population. However, these patients may pose a diagnostic difficulty. An ultrasound scan can confirm the presence of gallstones and the left-sided gallbladder. Here we present the case of a 40-year female with this diagnosis who was diagnosed on abdominal scanning and underwent laparoscopic cholecystectomy for left sided cholelithiasis.

**Key Words:** Cholelithiasis. Laparoscopic cholecystectomy. *Situs inversus totalis*.

## INTRODUCTION

*Situs inversus totalis* is a rare congenital condition affecting approximately 0.005% of all live births.<sup>1</sup> It is inherited as an autosomal recessive pattern and affect approximately 0.005% of all live births.<sup>2</sup> The reversal may be abdominal, thoracic or both. *Situs inversus totalis* may be associated with cardiorespiratory, hepatopancreaticobiliary, gastrointestinal, neurological, orthopaedic and urological anomalies, some of which may be life threatening.<sup>3</sup> Cholelithiasis is uncommon in such patients and may pose a diagnostic difficulty. Laparoscopic cholecystectomy in patients with *situs inversus* has been described earlier,<sup>4,5</sup> but not from Pakistan.

## CASE REPORT

A 42-year lady presented to the Surgical OPD with few months history of intermittent epigastric and left hypochondrial pain. Her ultrasound abdomen showed left sided gallbladder with multiple gallstones and liver was oriented in a mirror image of its usual anatomical lie, with the larger anatomical lobe lying on the left side while the smaller lobe crossed the midline to the right. Based on this finding her chest X-ray was advised which revealed dextrocardia and barium study revealed transposition of other abdominal organs as well.

She was admitted and her laparoscopic cholecystectomy was planned. The approach in the operating room was

modified with surgeon and cameraman standing on right side and assistant on left side. The position of trocars modified for left sided cholecystectomy is shown in figure (Figure 1). Classical four ports were inserted and initial inspection confirmed the presence of gallbladder and liver on left side (Figure 2). Dissection was carried



Figure 1: Trocar placement for laparoscopic cholecystectomy on the left side.

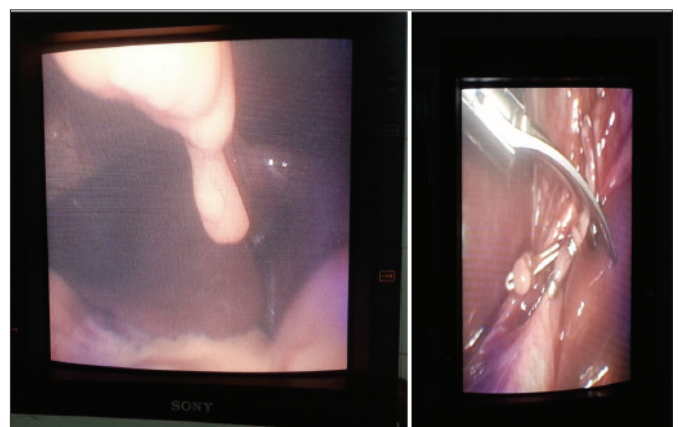


Figure 2: Left sided liver and gallbladder.

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out close to gallbladder and anatomy at Calot's triangle was carefully identified which demonstrated a normal mirror image relationship of the cystic duct and artery to common bile duct with no other associated anomalies. Cystic duct and cystic artery were clipped and cut. Gallbladder was dissected free from liver surface and extracted via epigastric port. Patient showed uneventful postoperative recovery and was discharged on the third postoperative day. She was followed-up after one week and then at 4 weeks and showed normal recovery.

## DISCUSSION

*Situs inversus totalis* is a rare congenital abnormality affecting abdominal as well as intrathoracic organs. It can be associated with other anatomical abnormalities, including heart malformations and Kartagener's syndrome,<sup>5</sup> and gallstone disease is not very common in such patients. In 1991, Campos and Sipes were the first to perform a successful laparoscopic cholecystectomy in a patient with *situs inversus totalis*.<sup>6</sup>

There are several aspects of the management of gallstones in patients with *situs inversus* that are worth mentioning. Patient usually present with left upper quadrant pain which may delay the diagnosis of symptomatic gallstones. It has also been reported that about one-third of patients with *situs inversus* and symptomatic gallstones may present with epigastric pain and about 10% of patients may present with right-sided pain.<sup>7</sup> Patients with *situs inversus totalis* should be carefully evaluated pre-operatively for any potential cardiac or respiratory abnormality. An ultrasound scan can be performed to confirm the presence of gallstones and the left-sided gallbladder. It would also be very useful to perform a Magnetic Resonance Cholangio-

Pancreatography (MRCP) procedure in order to reveal the exact anatomy of the biliary tract,<sup>8</sup> thus decreasing the incidence of intra-operative complications and enabling better planning of the surgical procedure.

Operation for left sided gallbladder stones needs mental adaptability for mirror image anatomy, and adequate experience to deal with any intraoperative complication. Laparoscopic cholecystectomy in patients with *situs inversus* should be performed by an experienced laparoscopic surgeon.

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