

Case Report

Laparoscopic cholecystectomy in situs inversus totalis: case report

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ABSTRACT

Laparoscopic cholecystectomy is one of the commonest surgical procedures carried out in the world today. Occasionally, few undiagnosed situs inversus patients present with calculous cholecystitis. One such case is being discussed here on how the diagnosis was made and focuses on the technical approach to the operation along with review of literature. A 52 year old female presented to our department with right hypochondrial pain which was diagnosed as choledocholithiasis and calculous cholecystitis with situs inversus totalis following clinical and radiological evaluation. Patient underwent ERCP and CBD, PD stenting, following which laparoscopic cholecystectomy was performed and the patient made uneventful recovery. Situs inversus with calculous cholecystitis is a rare entity. The surgeon must appreciate that care should be taken to set up the operating theatre in the mirror image of the normal set up for cholecystectomy. Surgeons must also modify their technique to adapt mirror image anatomy.

Keywords: Laparoscopic cholecystectomy, Situs inversus totalis, Cholelithiasis, Choledocholithiasis, Cholecystectomy

INTRODUCTION

Situs inversus is an autosomal recessive anomaly characterized by transposition of abdominal viscera, and when associated with a right sided heart (Dextrocardia) is referred to as situs inversus totalis.¹ Fabricius reported the first known case of situs inversus in 1600.² The incidence is thought to be in the region of 1:5000 to 1:20000.³

CASE REPORT

A 52 year old female presented with the complaints of pain right hypochondrium of 2 months duration, which was diagnosed as calculous cholecystitis with choledocholithiasis after clinical and radiological evaluation. Patient underwent ERCP and CBD, PD stenting, following which laparoscopic cholecystectomy

was planned. Laparoscopic cholecystectomy was performed with the 4-trocar Technique.

The operative team and laparoscopic devices were located in the theatre as a mirror image configuration of normal laparoscopic cholecystectomy.

The pneumoperitoneum (CO₂) was created by insertion of a veress needle through the supraumbilical area with a pressure of 12 mmHg. Two 10-mm trocars were inserted into the abdominal cavity, one in the position of the veress needle for laparoscope and the other one in the epigastric location.

A 5 mm trocar was inserted at left midclavicular line and second 5 mm trocar was inserted in left anterior axillary line at the level of umbilicus.



Figure 1: plain radiograph of erect abdomen showing dextrocardia, fundic gas in the right subdiaphragmatic space and CBD stent in the left.

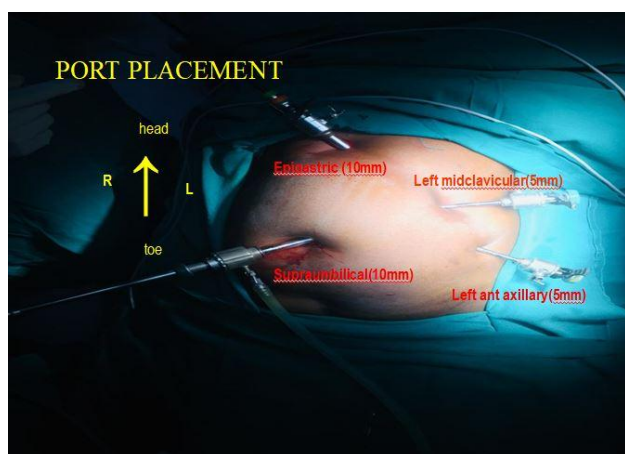


Figure 2: Image showing port placement.

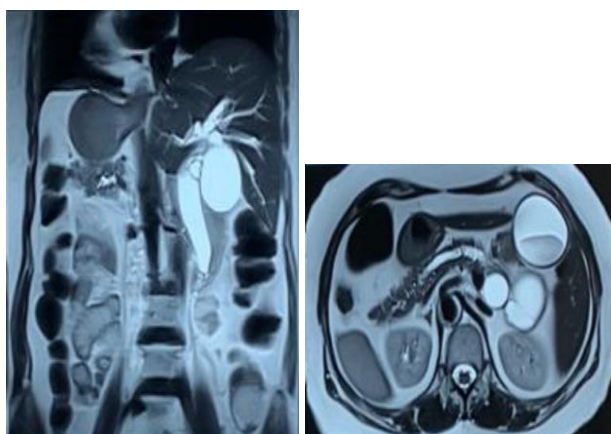


Figure 3: MRCP showing transposition of major abdominal organs.

The abdominal contents were indeed found reversed during laparoscopic abdominal exploration, the Calot's triangle the cystic artery was found to lateral side on the left of hepatic duct. Fundus of the gall bladder was grasped and retracted by the assistant, which was inserted

through the 5 mm trocar in the left anterior axillary line. Traction of the Hartmann's pouch was performed by right hand of the surgeon using a grasper inserted through the trocar located at left midclavicular line. Dissection of the Calot's triangle is one of the major problems for a right-handed surgeon in case of situs inversus totalis abnormality. Dissection of Calot's triangle was carried out with anterior and posterior approach by using a forceps that was inserted through the trocar located in the epigastrium. Meticulous dissection ensured complete freeing and definition of the course of both cystic duct and cystic artery. Dissection was performed above the plane of Rouviere's sulcus to avoid any injury. Cystic duct was clipped (double proximal, single distal 10 mm hemo lock clips, and cystic artery was coagulated and then divided by hook. After division of all peritoneal reflection on either side, the gall bladder was retrogradally separated from the liver bed by using electrocautery. It was then extracted through the 10 mm epigastric port. Fascial closure of large ports was sutured with 1-0 vicryl. The postoperative period was uneventful, and the patient was discharged on the third postoperative day.

DISCUSSION

Situs inversus is a rare congenital anomaly with an autosomal recessive genetic pattern of inheritance, and the genetic defect mostly occurs within the 2nd week of embryonic life. Incidence is thought to be 1:10000-1:20000.³ Campos and Sipes described the first case of laparoscopic cholecystectomy in a patient with situs inversus.³ In the published literature, there have only been about 50 reports of standard laparoscopic cholecystectomy in patients with situs inversus.³

CONCLUSION

We conclude that though laparoscopic cholecystectomy in patients with situs inversus is technically more demanding, an experienced laparoscopic surgeon can perform it safely. It is essential to rule out vascular anatomical variations preoperatively, and it may need CT angiogram.

Robotics may prevent difficulties in future.

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