



“LAPAROSCOPIC STUDY OF CHOLECYSTECTOMY IN SITUS INVERSUS TOTALIS”

General Surgery

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ABSTRACT

BACKGROUND: Situs inverses totalis is a rare congenital anomaly with transposition of major organs to opposite side of the body. Due to atypical clinical presentation and due to contra lateral presence of the gall bladder, it causes clinical challenge to operate with complete reorientation of anatomy. Visual motor skills are particularly tested when it comes to laparoscopy.

MATERIAL AND METHODS: A 25 year, lady presented with left hypochondriac pain and diagnosed as calculus cholecystitis with situs inverses total is. After ruling out associated anomalies patient underwent elective laparoscopic cholecystectomy. Around 60 cases of situs inverses total is with cholecystectomy have been reported till date. These cases cause technical and visuo-motor difficulty due to contra lateral deposition of gall bladder in left hypochondrium during laparoscopic cholecystectomy. Consumption of extra time also been reported during Calot's dissection, as it's like operating on a mirror image, Department of General surgery Darbhanga medical college and Hospital Laheriasarai Darbhanga Bihar.

CONCLUSION: Laparoscopic cholecystectomy, the gold standard treatment for cholelithiasis, is a feasible option even in cases with SIT; in the hands of good experienced, ambidextrous laparoscopic surgeons.

KEYWORDS

Laposcopic cholecystectomy, situs inverses totalis, cholelithiasis.

INTRODUCTION:

Situs inverses totalis is a rare developmental defect during embryogenesis characterised by total mirror image transposition of both thoracic and abdominal viscera across the left right axis of the body. Some people have no obvious signs and symptoms whereas a small proportion has congenital heart defects, usually Transposition of great arteries. It can also be associated with Kartagener syndrome (Situs inverses, bronchiectasis, and sinusitis). Estimated prevalence of situs inverses totalis is around 1 in 10000-20000.

Situs inverses totalis will not increase the risk of gall stones, however it may pose diagnostic difficulty due to atypical presentation of symptoms that is the pain being localised to left hypochondrium instead of right side. Situs inversus presents a technical challenge during laparoscopic cholecystectomy, especially for right handed surgeons. Situs inverses totalis is a rare congenital anomaly with transposition of major organs to opposite side of the body. Due to atypical clinical presentation and due to contra lateral presence of the gall bladder, it causes clinical challenge to operate with complete reorientation of anatomy.

Laparoscopic cholecystectomy in these patients is different and technically more challenging due to the need for reorientation of the Visio-motor skills to left upper quadrant Here in we present a case of laparoscopic cholecystectomy in situs inverses totalis.

METHODS:

A 24-year-old lady, P1L1, presented with recurrent episodes of left upper quadrant pain, flatulent

dyspepsia and she was diagnosed as a case of gastritis and treated accordingly. Later in third trimester of pregnancy she developed severe left hypochondriac pain, vomiting, biliary dyspepsia.

Clinical examination was performed, and she was found to have tenderness in left hypochondrium. Ultrasound abdomen was performed, and she was diagnosed with acute calculus cholecystitis with situs inverses. She was managed conservatively for the duration of pregnancy and later was taken up for elective cholecystectomy. This Study was carried out total 60 cases of situs inverses total is with cholecystectomy have been reported. in the Department of the General Surgery Darbhanga medical College And Hospital Laheriasarai Darbhanga Bihar.

Adequate preoperative workup was done, and a chest x-ray was taken showing dextrocardia and there was no evidence of bronchiectasis ruling out Kartagener syndrome.



Fig. 1: Chest Xray Showing Dextrocardia.

Laparoscopic cholecystectomy was performed in this patient using conventional four port technique. To optimise the view of the Calot's triangle the patient was given a head up and left up position. The surgeon and the assistant were on the right of the patient and the scrub nurse on the left side of the patient.

The port placement in the patient was as follows, A 10 mm sub umbilical port through which the pneumoperitoneum was created with co2 at 12mm Hg with open Hassan's technique. 10 mm epigastric port which was the main operating port, 5 mm port in the left hypochondrium in the left mid clavicular line and a 5 mm port in the left anterior axillary line approximately 7cm below the port in left mid clavicular line.



Fig. 2: Postoperative photograph of the patient showing the port placement.

At abdominal exploration during laparoscopy showed that all the abdominal contents were reversed in position and the liver was found to be on the left side and the stomach was found to be on the right side.



Fig. 3:

The fundus of the gall bladder was grasped and retracted towards patient's left shoulder with the help of an atraumatic grasper through the 5 mm port in left anterior axillary line. Adhesiolysis was done. Hartmann's traction was given with right hand instrument through the 5mm port in the left mid clavicular line. Calot's triangle was identified and Calot's dissection was carried out with the instrument in the left hand through the epigastric port and the cystic artery was found to be on the lateral and right side of the cystic duct.



FIG. 4: CALOT'S DISSECTION



Fig. 5:

Clipping of the cystic duct and the artery Cystic duct and artery were doubly clipped and then cut. Gall bladder was retracted left anteromedially then dissected from the gall bladder fossa with right hand instrument and the specimen was extracted from the epigastric port. Port closure was done after securing the haemostasis and drain placement. Post- operative period was uneventful with a total drain of 5 ml and the patient was discharged on POD 3.

Situs inverses itself will not increase the risk of gall stones but it may lead to delay in the diagnosis due to localisation of the pain to left hypochondrium with radiation to the left shoulder tip instead of right side.

Laparoscopic cholecystectomy in these patients is technically more challenging in these individuals due to the mirror image of the normal anatomy. The difference starts with the positioning of the patient with head up and left up position whereas normally it is a right up position. The port placement is also different in the sense that 2 ports are placed in the left mid clavicular line and left anterior axillary line instead of right mid clavicular and right anterior axillary line. The transposition of the viscera demands a proper dissection and exposure of biliary structures to avoid iatrogenic injury. The main difficulty encountered in these cases is during the skeletonisation of the structures of calot's triangle and application of clips. Due to these factors the procedure takes slightly longer time compared to the conventional cases. In our experience,

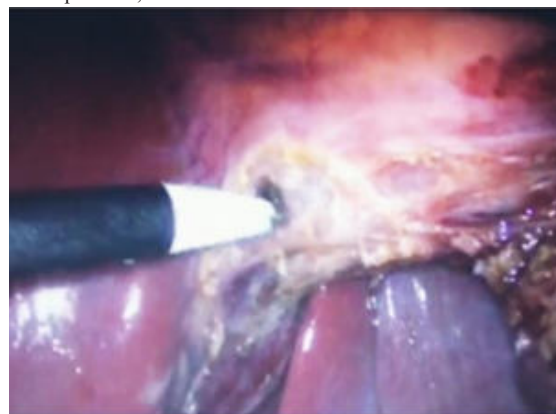


Fig. 6: Gall Bladder Dissection From GB Fossa

Table 1:

Features	Normal positioned gall bladder	Present case
Minimum operative time	40 minutes	32 minutes
Drain	Average of 15 ml	5ml
Drain removal and discharge	POD 3 or 4	POD 3

DISCUSSION:

Campos and Sipes were the first to describe a case of laparoscopic cholecystectomy in a patient with situs inverses. Till date a total of 60 such cases have been reported.

Due to the transposition of viscera performing laparoscopic cholecystectomy in these patients is challenging due to the need for the reorientation of Visio motor skills special demands on the diagnosis and surgical skills of the surgeon.



Fig. 7:

CONCLUSION:

laparoscopic cholecystectomy is feasible and should be done in situs inverses totalis patients by experienced laparoscopic surgeon, as change in anatomical predisposition of organ will not only influence the localisation of symptoms and signs arising from a diseased organ but also imposes

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