

## CASE REPORT

## LAPAROSCOPIC CHOLECYSTECTOMY FOR LEFT SIDED GALL BLADDER: AN UNUSUAL CASE

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We report a rare case of a female patient with *situs inversus totalis*. She developed cholelithiasis which was diagnosed on abdominal ultrasound and she underwent laparoscopic cholecystectomy for the left sided gall bladder. The literature on this subject is reviewed. We want to highlight the important aspects of the management in such rare scenario.

**Keywords:** Laparoscopic, Cholecystectomy, *Situs inversus*

## INTRODUCTION

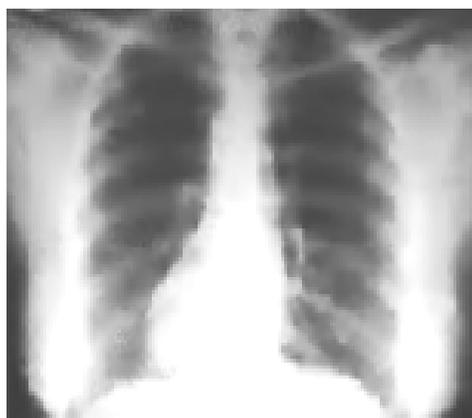
*Situs inversus totalis* is a rare congenital defect that can present difficulties during laparoscopic surgery due to the mirror-image anatomy.<sup>1</sup> Macro Severino first recognized dextrocardia in 1643. More than a century later, Mathew Baillie described the complete mirror image reversal of the thoracic and abdominal organs in *situs inversus*.<sup>1</sup> Typically, patients with *situs inversus* have a normal life expectancy. In the rare instances of cardiac anomalies, life expectancy is reduced, depending on the severity of the defect. The recognition of *situs inversus* is important for preventing surgical mishaps that result from the failure to recognize reversed anatomy or an atypical history. For example, in a patient with *situs inversus*, cholecystitis typically causes left upper quadrant pain, and appendicitis causes left lower quadrant pain. The indexed literature has reported only few patients that were diagnosed to have left sided gall bladder and acute cholecystitis.<sup>2-4</sup> Most of these patients underwent open cholecystectomies and up till now only thirteen cases have been reported to undergo laparoscopic cholecystectomy for the left sided gall bladder.<sup>5</sup> We are reporting 14<sup>th</sup> case in literature which underwent Laparoscopic Cholecystectomy for the left sided gall bladder.

## CASE REPORT

A 42-year-old female, previously not a known case of *situs inversus* admitted through emergency room with history of sudden onset epigastric and left hypochondrial pain for 24 hrs. Her emergency room X-ray chest showed presence of dextrocardia and her abdominal ultrasound scan demonstrated acute cholecystitis of a left side gall bladder. A mirror image anatomy of other abdominal viscera was also diagnosed on abdominal ultrasound. She was planned for early laparoscopic cholecystectomy during the same admission.

Diagnosing the *situs inversus* preoperatively gave us a great advantage and detailed literature search was made before the procedure and preparation were made to tackle the mirror image anatomy and possibility of unexpected other anomalies.

A detailed cardiac and respiratory assessment was made to diagnose associated significant pathology due to *situs inversus totalis* and this work up was quite normal. Theatre laparoscopic equipment orientation was made in a mirror image fashion, with laparoscopic equipment trolley towards left top of operating table, and surgeon standing on the right of the patient. Total of four ports, Infra-umbilical, epigastric and two left lateral abdominal ports were used. A detailed care full laparoscopy was done to see the mirror image relationship of all the abdominal viscera (Figure-1 & 2).



**Figure-1: Chest X-Ray showing dextrocardia**

Dissection in the Calot's triangle was started near the gall bladder and medial portion of the gall bladder was mobilized with care full dissection. Anatomy at the Calot's triangle was identified care fully which demonstrated a very normal mirror image relationship of the cystic duct and artery to common bile duct with no other associate anomalies. To further confirm the anatomy a laparoscopic per operative cholangiogram was performed which confirmed the above mentioned findings. Cystic duct and artery were double clipped and cut, rest of the gall bladder was dissected from its bed and removed outside abdomen through the epigastric port. Patient had smooth postoperative recovery and she was discharge on second postoperative day. She had two routine out patient clinic follow ups on the end of first week and 4<sup>th</sup> week, which were unremarkable.



**Figure-2: Showing laparoscopic port positions over anterior abdominal wall which are mirror image of routine laparoscopic cholecystectomy**

## DISCUSSION

*Situs inversus totalis* and abnormally positioned gall bladder to the left of the Falciiform ligament are rare anomalies and only few cases are reported in literature.<sup>3,4</sup> The first description of left sided gall bladder in indexed literature was made by Cirila in 1965.<sup>2</sup> Since then there are many case reports of left sided gall bladder. First laparoscopic cholecystectomy for left sided gall bladder was reported by Drover in 1992<sup>6</sup> and since then thirteen other cases have been reported in literature, making a point that laparoscopic intervention is not a contraindication for such patients.<sup>5,7-10</sup> Transposition of gall bladder to the left side without *situs inversus* is rare and only a few cases are reported in literature so far. These gall bladders are almost always situated under left lobe of liver between the IV and III segments or on the III segment to the left of Falciiform ligament.<sup>8,11</sup>

All the previous reporters have emphasized upon difficulties arising from the presence of mirror image anatomy and anomalies at Calot's triangle. All the attempts of laparoscopic cholecystectomies were success full with uneventful recovery.<sup>5,12-14</sup> In our patient *situs inversus* was diagnosed preoperatively by X-ray chest and Ultrasound abdomen. As we know the diagnosis before operation, so was selected mirror image positioning of laparoscopic ports. We had slight difficulty in dissection due to mirror image anatomy but the complete procedure was uneventful. We made special effort to work as close to gallbladder as possible in the Calot's triangle to avoid any biliary injury. Special care needs to be taken to identify the anatomy prior to division of any structures to prevent accidental injury to the common bile duct. The detailed review of the literature before operation helped us a lot in patient management.

Laparoscopic surgeon should be careful for the view of reversed relationships of the structures and

existence of other anomalies.<sup>8,12</sup> Other problems faced by laparoscopic surgeon are position of ports, standing position of operating surgeon, location of monitor and assistant because he is not used to of this position during routine Cholecystectomy. All these should be mirror image of routine laparoscopic Cholecystectomy. Another difficulty faced by operating surgeon is that by standing on right side of patient his dissecting hand is left, for which he is not used to of working during routine laparoscopic Cholecystectomy.

## CONCLUSION

Our Surgery Department performed successful laparoscopic cholecystectomy for the left sided gall bladder for the first time in Pakistan. Laparoscopic intervention is safe in such patients. Mirror image placement of ports, dissection close to the gall bladder, clear identification of anatomical structure before cutting and availability of intra-operative cholangiogram is of paramount importance.

## REFERENCES

1. Cotran RS, Kumar V, Robbins SL: Robbins Pathologic Basis of Disease. 4<sup>th</sup> ed. London: WB Saunders Co, 1998. p777.
2. Cirila A, DeVecchi A. Left sided ectopic Gall Bladder. Quad Radiol 1965;30:749-58.
3. Southam JA. Left-sided gallbladder: Calculous cholecystitis with situs inversus. Ann Surg 1975;182(2):135-7.
4. Kinoshita H, Sakai K, Kubo S, Ohno K. Two cases of left-sided gallbladder associated with cholelithiasis: Review of the literature in Japan. Osaka City Med J 1988;34:67-75.
5. Bedioui H, Chebbi F, Ayadi S, Makni A, Fteriche F, Ksantini R, et al. Laparoscopic Cholecystectomy in a patient wit situs inversus. Ann Chir 2006;131(6-7):398-400.
6. Drover JW, Nguyen KT, Pace RF. Laparoscopic cholecystectomy in a patient with situs inversus viscerum: A case report. Can J Surg 1992;35:65-6.
7. Schiffino L, Mouro J, Levard H, Dubois F. A case of a left -sided gallbladder treated surgically via laparoscopy. Ann Ital Chir 1993;64:229-31.
8. Gui D, Magalini S, Prete F, Sermoneta D. What's right when the gallbladder's left? A case report. Surg Endosc 2002;16:1637.
9. Reddy PK, Subramanian RV, Yuvaraja S. Laparoscopic cholecystectomy for left-sided gallbladder (sinistroposition). JLS. 2005;9:356-7.
10. Hopper N, Ryder JM, Swarnkar K, Stephenson BM. Laparoscopic left hepatic lobe cholecystectomy. J Laparoendosc Adv Surg Tech A 2003;13(6):405-6.
11. Rozsos I, Ferenczy J, Vincz K, Rainer S. Left sided gallbladder. Magy Seb 2002;55:329-30.
12. Al-Jumaily M, Hoche F. Laparoscopic cholecystectomy in situs inversus totalis: is it safe? J Laparoendosc Adv Surg Tech A. 2001;11:229-31.
13. Takei HT, Maxwell JG, Clancy TV, Tinsley EA. Laparoscopic cholecystectomy in situs inversus totalis. J Laparoendosc Surg. 1992;2(4):171-6.
14. Polychronidis A, Karayiannakis A, Botaitis S, Perente S, Simopoulos C. Laparoscopic cholecystectomy in a patient with situs inversus totalis and previous abdominal surgery. Surg

Endosc. 2002;16:1110.

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