

On-line Case Report

Laparoscopic cholecystectomy in situs inversus totalis: is it safe?

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ABSTRACT

Situs inversus totalis (SIT) is a rare defect of genetic predisposition. It may cause difficulties in the diagnostic and therapeutic management of abdominal pathology due to the mirror-image anatomy. We report the management of a case of symptomatic cholelithiasis with emphasis on its surgical technique combined with a review of the literature.

Keywords: Situs inversus totalis – Cholelithiasis – Laparoscopic cholecystectomy

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Case history

A 53-year-old man with known situs inversus totalis (SIT) presented to out-patients with pains in his left upper quadrant. He was a diet-controlled diabetic. An upper abdominal ultrasound scan confirmed a left-sided liver and gallbladder containing numerous calculi. Liver function tests were normal and a laparoscopic cholecystectomy was performed.

Operative technique

The patient was placed in the supine position with slight head-up and right tilt to improve visualisation. Two surgeons, both right-handed, were positioned to the right of the patient. The monitor was at the head of the patient on his left side. Four ports were used in total. A 10-mm camera port was inserted infra-umbilically and an additional 10-mm port in the subxiphoid area in the mid-

line. A 30-degree camera was used. Two 5-mm ports were inserted in the left subcostal region at the mid-clavicular and the anterior axillary lines (Fig. 1).

Initial laparoscopy confirmed SIT. The caecum was positioned on the left, the spleen on the right and liver on the left together with the gallbladder (Fig. 2). The left anterior axillary line port was used to grasp the gallbladder fundus and provide cephalic traction. Hartmann's pouch was dissected using a grasper from the subxiphoid port and hook diathermy via the left mid-clavicular line port (Figs 3 and 4).

Dissection of Calot's triangle proved straightforward. The dissection was carried out through the left mid-clavicular line port with the dominant hand and clips were applied to the cystic artery and cystic duct through the subxiphoid port. There was no associated aberrant biliary anatomy encountered. The gallbladder was delivered through the subxiphoid port using an Endocatch® retrieval bag.

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The duration of the operation was 65 min, a length slightly longer than our standard laparoscopic cholecystectomy. Recovery was uneventful and the patient was discharged the following day.



Figure 1 Port site positioning (head end at top of image).

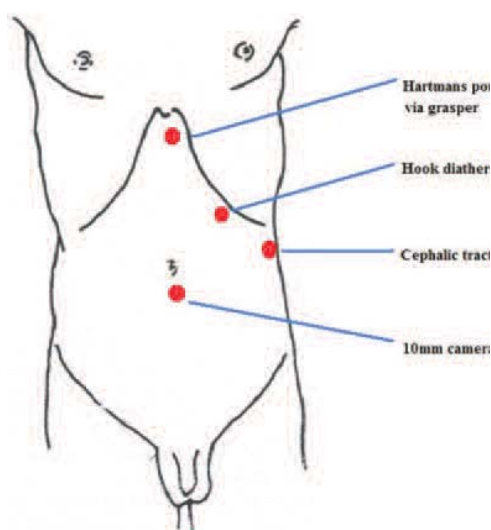


Figure 3 Port site positioning.

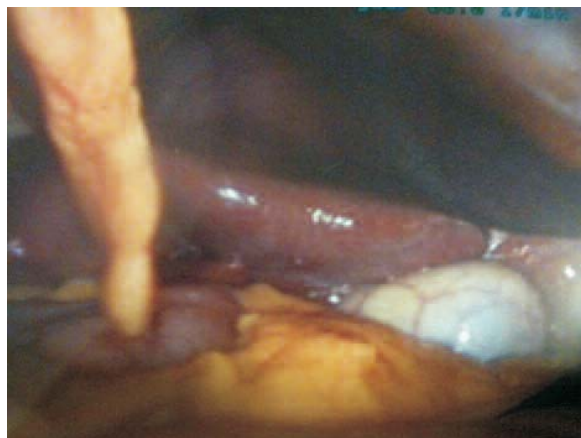


Figure 2 Initial laparoscopy.

Discussion

Situs inversus was first describes by Scottish physician and pathologist Matthew Baillie. It is generally an autosomal recessive condition, although it can be X-linked. In the absence of congenital heart defects, individuals with situs inversus are phenotypically unimpaired. There is a 5–10% prevalence of congenital heart disease in individuals with SIT. Most commonly this is transposition of the great vessels and this must be assessed pre-operatively.

There is no evidence to suggest that symptomatic cholelithiasis is more frequent with SIT. Although the majority of patients with SIT describe the symptoms of gallbladder disease in the left upper quadrant, epigastric pain in 30% and right upper quadrant pain in 10% has been reported previously.¹ It is thought that the central nervous system may not share in the visceral transposition.

Since Mouret performed the first laparoscopic cholecystectomy in 1987, it has become the standard

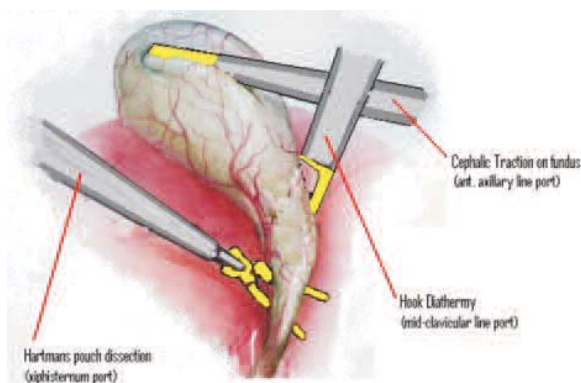


Figure 4 Gallbladder retraction.

treatment for gallbladder disease. In 2006, Bediou *et al.*² reported the 13th case of laparoscopic cholecystectomy in SIT in the world. Previous reports have stated that SIT is not a contra-indication to laparoscopic cholecystectomy.^{3,4} Recognised difficulties are noted in the right-handed surgeon who must show care not to cross arms to retract Hartmann's pouch for skeletalisation of Calot's triangle. Previous authors have suggested that the assistant for optimal ergonomics carries out such retraction. Others suggest operating between the legs with the patient in a Lloyd–Davis position.⁵

Conclusions

This case study confirms other authors' reports that laparoscopic cholecystectomy can be performed safely in the patient with SIT if care is taken to familiarise one's self with the mirror image anatomy.

Acknowledgement

Written consent was obtained from the patient in order to publish this case report.

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