

# TRUE LEFT SIDED GALL BLADDER: A SURGICAL SURPRISE

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## ABSTRACT

**BACKGROUND:** Left sided gallbladder is a rare anomaly & several variants exist. The condition cannot be diagnosed pre-operatively by most of the radiological modalities and it can take the operating surgeon, by surprise.

**CASE PRESENTATION:** A young lady with symptomatic gallstones was unexpectedly found to have a left sided gallbladder during laparoscopic cholecystectomy. Though, her routine preoperative work up did not show anything abnormal, as is usual in such anatomical variation. She was successfully managed by laparoscopic cholecystectomy by modifying the camera angle & the dissection technique.

**CONCLUSION:** The anatomical knowledge of the various structures & to timely recognize the variations is very important to avoid injury in such cases. The operating technique may need to be modified for a safe & successful outcome.

**KEYWORDS:** Cholecystectomy (MeSH); Gallbladder (MeSH); Laparoscopy Cholecystectomy (Non-MeSH); Surgery, Laparoscopic (MeSH); Laparoscopy (MeSH); Left sided Gallbladder (Non-MeSH); Biliary Anomalies (Non-MeSH); Biliary Tract (MeSH); Biliary Tract Surgical Procedures (MeSH).

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True Type of LSG (Figure 1, A & B).

During the whole course of surgery, the camera had to be specially maneuvered under the falciform ligament to get the proper view of the anatomy. The GB had a reasonably long mesentery. And a retrograde dissection was started from the fundus first & carefully proceeded down until the neck of GB. A bit wider cystic duct (CD) was found to have anterior connection to the common bile duct (CBD) & the cystic artery (CA) was having a long tortuous course from the right side of CBD. The CA was double clipped but the CD was double ligated with intra-corporeal vicryl suture zero size, well clear of the CBD. A drain was put for safety, which remained dry. Postoperative, course was smooth & unremarkable. The liver functions tests & ultrasound didn't show anything abnormal on first & 2<sup>nd</sup> day post-operative day. She was discharged on 2<sup>nd</sup> post-operative day. She was reviewed in a follow up period and nothing significant was noticed for one-month post operatively.

## DISCUSSION

The biliary or vascular injuries occurring at the time of GB surgery have a significant morbidity potential. So it is always desirable & best to avoid them.<sup>6</sup> Therefore, the knowledge of the anatomical structures & variants is very important, especially in the biliary surgery. Since there are several variations in this region. And these pertain, not only to the GB position but the CD insertion & the vasculature as well.<sup>1</sup> The GB normally resides in the fossa located between Couinaud segments IV and V. If it is located to the

## INTRODUCTION

A left sided gallbladder (LSG) is the one located on the left side of the round ligament of liver.<sup>1</sup> LSG is a rare condition and the incidence reported ranges from 0.2 to 1.1% in the medical literature,<sup>2,3</sup> of which the true left sided gall bladder is the most common variant. This condition was first described by Hochsetter in 1856.<sup>1</sup> The routine workup in such patients with LSG presenting with symptomatic gall stones usually fails to point out towards the unusual anatomical variant in the vast majority of the patients with otherwise normally placed viscera.<sup>1,4</sup> The diagnosis is usually made only at the time of surgery, taking the operating surgeon by a surprise.<sup>5</sup>

We present a case of the true LSG presented to our hospital for a routine elective laparoscopic cholecystectomy.

## CASE REPORT

A 34 years old Saudi lady with no other co-morbidity was admitted with

symptoms pertaining to gallbladder stones sine the last 06 months for an elective laparoscopic cholecystectomy at King Khalid General Hospital, Hafar al Batin, Kingdom of Saudi Arabia. The usual workup included ultrasound scan abdomen along with other laboratory investigations but those revealed nothing unusual except average sized multiple gallbladder stones with normal gallbladder wall thickness.

After placing the 30-degree camera through an infraumbilical port placed via open pneumoperitoneum, the gall bladder (GB) was apparently found to be unusually located, a bit more medial to its usual location & hidden behind the falciform ligament with only its fundus visible medial to it after maneuvering the camera. After placing the standard 04 ports and grasping the fundus, it was realized to be attached to the left lobe of the liver, medial to falciform ligament. Before the dissection was commenced, the GB was displayed with traction & viewing from various angles for proper orientation. And it was realized to be

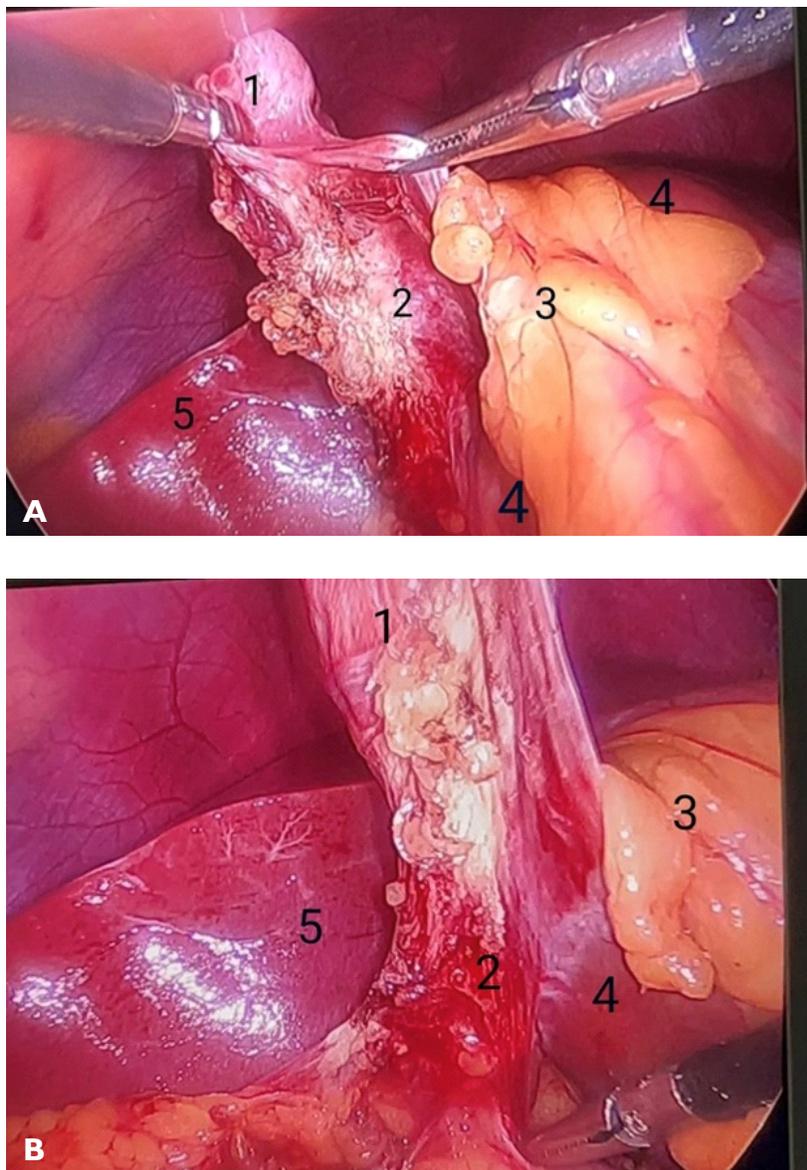


Figure 1 (A & B):Description of the anatomical structures in the study subject during laparoscopic surgery; 1-Gallbladder, 2-Callot's Triangle, 3-Falciform Ligament, 4-Left lobe of liver, 5-Right lobe of liver (normal position of the GB fossa)

left of Ligamentum teres (LT)/round ligament (RT) of liver, it is called the LSG.<sup>7</sup>

The true LSG in the otherwise normally positioned viscera, is the GB located under the left lobe of liver as in our case. While another variant of LSG is due to the abnormally located RL/LT, which is located more towards the right lobe of liver, segment V while the GB is located at its usual anatomical location, respectively. However, the GB may also be located on the left side attached to

the left sided liver associated with situs viscerum invertus (SVI).<sup>8</sup> The CD may either join the left side of the CBD or even left hepatic duct directly. But in our case, it was long & CD joining the CBD, anteriorly.

True LSG is a rare anomaly and the presentation of the symptoms is almost the same as the normally located GB. The pre-operative clinical evaluation and imaging like ultrasound, CT scan, MRI or even the endoscopic ultrasound may usually miss the abnormal

findings.<sup>1,2</sup>

The operating surgeon may be taken by surprise due to the unusual and rare anatomical presentation as in our case since it is not usually diagnosed pre-operatively. To successfully manage such a case, an utmost careful inspection & dissection with precision must be carried out.<sup>1</sup>

In case, the LSG is encountered, the operating technique may need to be modified accordingly by either placing the laparoscopic ports to the left of the midline (Idu et al)<sup>4</sup>, using the modified French position,<sup>4,9</sup> or using the angled camera for a better & broader view. The anatomy must carefully be evaluated & careful dissection performed. As we started with Callot's triangle dissection but then after encounter of the variable anatomy, resorted to the retrograde dissection for safety. The CD was carefully ligated well away & clear of the CBD. And some authors also suggest the same approach.<sup>10</sup> Although, despite the anatomical variance, the safe completion of laparoscopic cholecystectomy is still possible.<sup>2</sup>

## CONCLUSION

True LSG is a rare anomaly and knowledge of the various anatomical variants is important to the operating surgeons for the safe completion of cholecystectomy. In such a case, the unusual situation should be contemplated in advance & the surgical technique also needs to be modified.

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## AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

**KOA, ZUA:** Identification, diagnosis and management of case, critical review, approval of the final version to be published

**TFA, NMA:** Identification and diagnosis of case, drafting the manuscript, approval of the final version to be published *Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.*

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Authors declared no conflict of interest

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## DATA SHARING STATEMENT

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