ORIGINAL RESEARCH PAPER

Volume-7 | Issue-2 | February-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

LAPROSCOPIC LOW ANTERIOR RESECTION IN CARCINOMA RECTUM WITH SITUS INVERSUS TOTALIS

Surgery

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ABSTRACT

SITUS INVERSUS TOTALIS is a rare congenital condition characterized by complete transposition of the thoracic and abdominal viscera . Several reports on surgical procedures in SIT patients have documented greater technical difficulties, as the anatomy is abnormal. Laparoscopy can prove to be an even greater technical challenge. Although laparoscopic colorectal surgery has recently become a standard procedure, there are very few available literature on laparoscopic surgery for rectal neoplasms in patients with SIT. We present an overview of the operative technique of laparoscopic low anterior resection for rectal cancer. Careful consideration of the mirror-image anatomy permitted a safe operation. Therefore, curative laparoscopic surgery for rectal cancer in patient with SIT is feasible and safe. We report a case of a 65 year old female who presented with an Ulcero-proliferative growth about 6cms from the anal verge, with Situs Inversus Totalis. Laprosocpic low anterior resection was performed successfully by careful consideration of the mirror-image anatomy. The operative time was 240 minutes and no intraoperative complications occurred. The postoperative course was uneventful, and the patient was discharged on postoperative day 16.

KEYWORDS

SITUS INVERSUS TOTALIS, RECTAL CARCINOMA , MINIMALLY INVASIVE SURGERY , LOW ANTERIOR RESECTION , SIT

INTRODUCTION: SITUS INVERSUS TOTALIS is a rare congenital condition characterized by complete transposition of the thoracic and abdominal viscera and occurs in 1 out of 4000-20000 people and associated with vascular anomalies viz variation of Celiac Trunk and Superior Mesenteric Artery.There are also anomalies of the gastrointestinal system like Biliary Tree Atresia, Duodenal Atresia, Diaphragmatic Hernia and others. Many cases of malignant neoplasms and situs inversus totalis have been reported, especially gastric cancer but asssociation between colorectal cancer and situs inversus totalis is rare.

CASE REPORT: A 65 year Old Female presented with complaints of Bleeding per rectum , Loss of appetite and loss of weight for the past three months. On examination patient was moderately built and nourished, Systemic examinations were normal. Per-Rectal examination revealed a growth 6cms above the anal verge. Routine Blood investigations were within normal limits. The serum carcinoembryonic antigen was elevated (25.10 ng/mL; reference value, < 5ng/mL). The serum carbohydrate chain antigen199 (CA199) was elevated (35.50 ng/mL; reference value, < 35ng/mL). Chest x-ray showed features of Dextrocardia. Ultrasound abdomen and pelvis showed liver on the left and spleen on the right side. Patient was subjected to CE-CT abdomen which revealed concentric wall thickening noted involving the upper rectum for a length of 5.3cms with the lower end of lesion about 3.7cms proximal to ano-rectal junction. Colonoscopy was done which revealed Ulcero-proliferative growth 6 to 8 cms above the anal verge. Biopsy taken revealed well differentiated adenocarcinoma. Patient was counseled about the disease and was given single dose of Neo-Adjuvant Chemotherapy and then subjected to laparoscopic low anterior resection. The surgical overview is as follows.

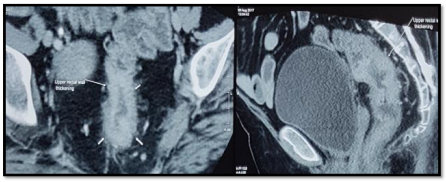


Figure -1: Cect showing concentric wall thickening noted involving upper rectum for a length of 5.3cms and lower end of lesion is about 3.7cms.

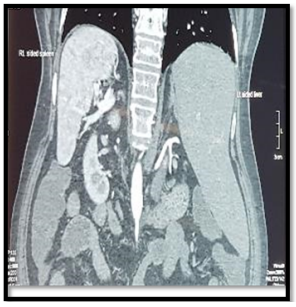


Figure -2: Cect of abdomen showing Liver on left side and spleen on right side

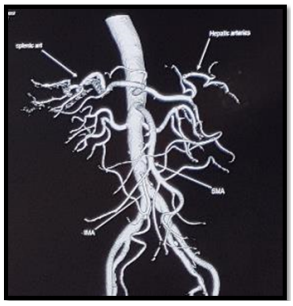


Figure-3: arterial phase showing Splenic artery on right and Hepatic artery on left side

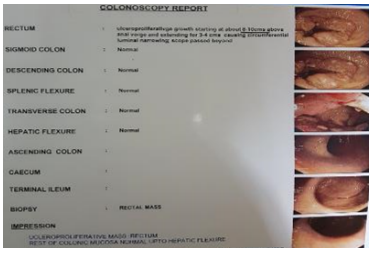
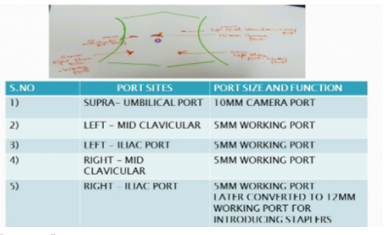


Figure – 4: Colonoscopy showing ulcero proliferative growth measuring 6 to 8 cms above the anal verge and extending for 3 to 4 cms causing circumferential luminal narrowing . biopsy done and report revealed as well differentiated adenocarcinoma



S.NO	PORT SITES	PORT SIZE AND FUNCTION
1)	SUPRA– UMBILICAL PORT	10MM CAMERA PORT
2)	LEFT – MID CLAVICULAR	5MM WORKING PORT
3)	LEFT – ILIAC PORT	5MM WORKING PORT
4)	RIGHT – MID CLAVICULAR	5MM WORKING PORT
5)	RIGHT – ILIAC PORT	5MM WORKING PORT LATER CONVERTED TO 12MM WORKING PORT FOR INTRODUCING STAPLERS

Figure -5 : Port placement

- INITIAL DIAGNOSTIC LAPROSCOPY DURING FIRST CAMERA PORT
- IDENTIFIACTION OF INFERIOR MESENTRIC PEDICLE(ARTERY + VEIN)
- LIGATION OF THE IMA PEDICLE
- ENTRY OF PRESACRAL PLANE
- LATERAL PEDICLES
- DISSECTION OF ANTERIOR PLANE
- STAPLING OF STUMP
- ANASTAMOSIS WITH ANVIL
- TEMPORARY COVERING ILEOSTOMY
- REMOVAL OF SPECIMEN THROUGH PFANNENSTEIL INCISION

Figure - 6 : steps of our surgery

Under General anesthesia with patient was placed in a lithotomy position and surgeon stood on the left side of the patient A 10-mm supra umbilical port was placed, and telescope introduced into the peritoneal cavity. Additional trocars were placed as described in (figure 5.). The laparoscopic view showed that the sigmoid colon was on the right side, along with appendix located on the left side. The liver was in the left upper quadrant. The sigmoid colon was mobilized using ultrasonic dissection. The inferior mesenteric pedicle containing the inferior mesenteric artery and vein were identified along its course and divided and ligated. Then the next step was towards plane dissection and creation. The Pre sacral plane was entered and redundant sigmoid pulled up and plane dissection carried out using monopolar hook. then the lateral planes were dissected on both sides upto the HOLY PLANE OF HEALD where the hypogastric plexus of nerves cross over. Then finally the anterior plane was dissected and created. Care was taken not to injure the median sacral artery and the ureters. Laparoscopic tri stapler was introduced through the 12mm trocar and the stapler was carefully maneuvered and the ulcero-proliferative growth resected with adequate margins of clearence both proximally and distally. The specimen was removed through a Pfannensteil incision. Then the laparosocpic circular anastamotic stapler was introduced with the male end entering via the 12mm trocar and the female end of the stapler introduced through the anal canal and both ends were brought into contact and anastomosis created and temporary covering ileostomy performed.

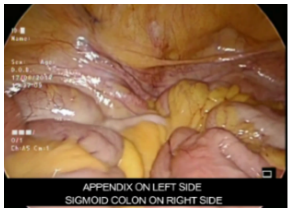


Figure -7: Appendix on left side and sigmoid colon on right side.

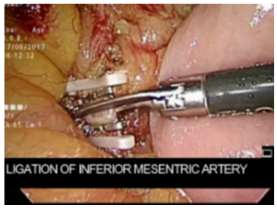


Figure- 8: Ligation of Inferior Mesenteric Artery

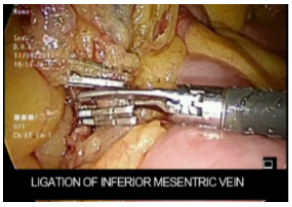


Figure -9: : Ligation of Inferior Mesenteric Vein

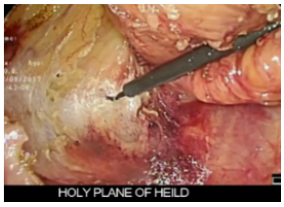


Figure -10: Holy plane of Heild

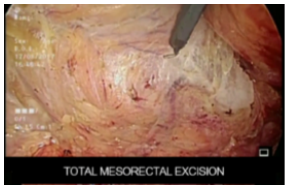


Figure -11 : TME with Median Sacral Artery

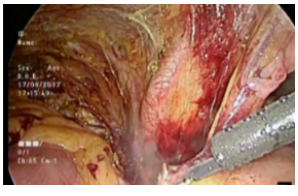


Figure -12: Right Ureter

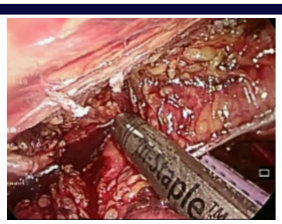


Figure - 13: Tri stapler resecting the tumour

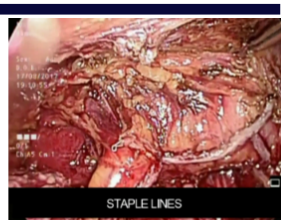


Figure - 14: Intact staple lines after firing of stapler

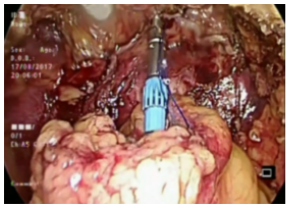


Figure – 15: circular anastamotic stapler with both ends in contact

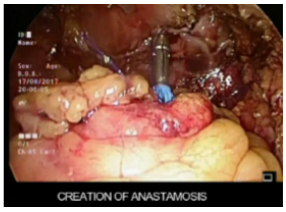


Figure – 16: creation of anastamosis

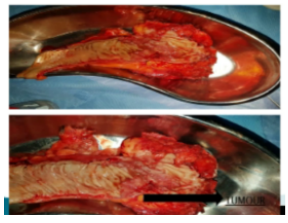


Figure - 17: resected tumour specimen

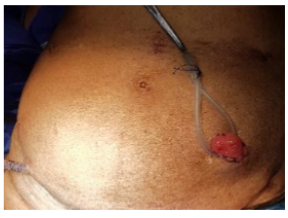


Figure - 18: : covering ileostomy on left side

CONCLUSION:

In SIT there are technical difficulties faced by a surgeon in operating carcinoma rectum because anatomy is altered. The etiology of SIT remains obscure, and this condition does not influence normal health or life expectancy. However, it has important surgical implications. Laparoscopic surgeries in SIT patients have documented greater technical difficulties due to the altered anastomotic orientation. In rectal cancer patients with SITUS INVERSUS TOTALIS, despite the unfamiliar anatomy, patients should not be denied the benefits of minimal-invasive surgery, assuming that it can be performed safely. Laparoscopic surgery is a safe and feasible option for patients with SITUS INVERSUS TOTALIS with shorter hospital stay, less post-operative pain, and early return of routine activities.

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