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Cardioesophageal Cancer in Liver Cirrhosis and PV Thrombosis – Case Report

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Abstract

Background

Liver cirrhosis is often a concomitant condition in oncological patients. This paper concerns surgical patients with non-hepatobiliary gastrointestinal tumors complicated with liver cirrhosis and portal hypertension. The challenge of comorbidity is significant and requires the involvement of a multidisciplinary team of surgeons, hepatologists, radiologists and oncologists. Chronic liver injury manifests with fibrosis, and in late stages liver cirrhosis. It is an alteration of liver architecture, with nodule formation and blood flow impairment. The decompensated stage of liver cirrhosis develops ascites, variceal bleeding, hepatorenal syndrome and encephalopathy. Despite advances in surgical technique and intensive care, patients with liver cirrhosis undergoing major surgery are at a high risk of mortality or significant complications.

Case presentation

Our patient is a 52 years old man post COVID-19, with Diabetes Mellitus, liver cirrhosis, portal vein thrombosis and bleeding esophageal varices. He was diagnosed with cardi-esophageal cancer and biopsy confirms adenocarcinoma. The patient was consulted by the oncologists, who decide in favour of surgery prior to chemo-radiotherapy, given the serious comorbidities. After a consensus was reached, the patients underwent the Ivor-Lewis procedure successfully and was discharged in good health.

Discussion

Current studies and meta-analyses highlight the importance of Child-Turcotte-Pugh classification of cirrhotic patients in estimating the post-operative complications. Child A and B liver cirrhosis may in itself not contraindicate surgical esophagectomy, but patient selection is paramount as esophageal cancer is associated with a high rate of early post-operative complications. Child A patients with an adequately compensated liver cirrhosis may respond to radio-chemotherapy similarly to patients with esophageal cancer without cirrhosis. Conversely, Child B patients do not tolerate well the appropriate chemo-radiotherapy protocols, and are at risk of serious systemic complications.

Conclusion

In conclusion, patients undergoing major surgery with concomitant liver cirrhosis are at a greater risk of developing serious complications, such as hepato-renal syndrome, ascites, haemorrhage, anastomotic fistula and have a high mortality rate. The multidisciplinary team should thoroughly assess the patient and provide a mature decision in the selection of surgery as a treatment modality for esophageal and gastric cancer, especially in cirrhotic patients of various degrees.

Keywords: General Surgery, Eosphageal Cancer, Ivor-Lewis, Liver Cirrhosis, Portal Vein Thrombosis.
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1. Introduction

Liver cirrhosis is often a concomitant condition in oncological patients. This paper concerns surgical patients with non-hepatobiliary gastrointestinal tumors complicated with liver cirrhosis and portal hypertension. The challenge of comorbidity is significant and requires the involvement of a multidisciplinary team of surgeons, hepatologists, radiologists and oncologists.

Chronic liver injury manifests with fibrosis, and in late stages liver cirrhosis. It is an alteration of liver architecture, with nodule formation and blood flow impairment. The decompensated stage of liver cirrhosis develops ascites, variceal bleeding, hepatorenal syndrome and encephalopathy.

Despite advances in surgical technique and intensive care, patients with liver cirrhosis undergoing major surgery are at a high risk of mortality or significant complications.

2. Case presentation

2.1 History of present illness

Our patient is a 52 years old man post COVID-19, with Diabetes Mellitus, liver cirrhosis, portal vein thrombosis and bleeding esophageal varices. He was diagnosed with cardi-esophageal cancer and biopsy confirms adenocarcinoma. The patient was consulted by the oncologists, who decide in favour of surgery prior to chemo-radiotherapy, given the serious comorbidities. The placement of a porto-caval shunt was not possible neither in public hospitals nor in private institutions. The patient and family members give their full consent for a surgical procedure after the expected prognosis and risks were explained.

2.2 Details of the surgical procedure

The procedure starts with a median abdominal incision and access to the peritoneal cavity. The revision of the cavity reveals a cardio-esophageal tumor which extends to the lower esophagus. A macronodular liver cirrhosis was noted with marked collateral venous circulation in hepato-duodenal ligament, duodenum and the major curvature of the stomach. The distended collateral vessels hampered the dissection, causing occasional haemorrhage which was promptly controlled with electrocautery or ligatures.

Gastrocolic ligament is dissected and we enter the bursa omentalis. Next, the greater curvature of the stomach is prepared, preserving the important right gastro-epiploic vessels and arcade. Short gastric vessels are cut and ligated, freeing the splenic side of the stomach and next, the lesser curvature of the stomach is dissected. The terminal esophagus is amputated. A gastric stump is modelled in the shape of a tube with GIA, preserving the pyloric vessels. Heineke-Mikulicz pyloroplasty is also performed.

With a right thoracotomy access, the lower esophagus is carefully dissected up to the level of Azygos vein (middle 1/3rd portion) where the tissue seemed viable, without varices and in distance from the tumor. Lower esophageal resection is performed and consequently eso-gastric anastomosis with a circular stapler.

The Ivor-Lewis procedure ends with the positioning of two thoracic drains and two abdominal drains.

2.3 Post-operative period

The post-operative course of the patient was good, thanks to a careful intensive care management of expected systemic complications. The patient made a full recovery and was discharged in good health in the 13th postoperative day.

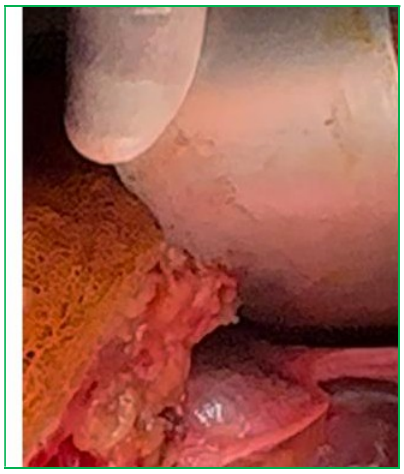

Figure 1. Macronodular liver cirrhosis and marked collateral venous circulation.

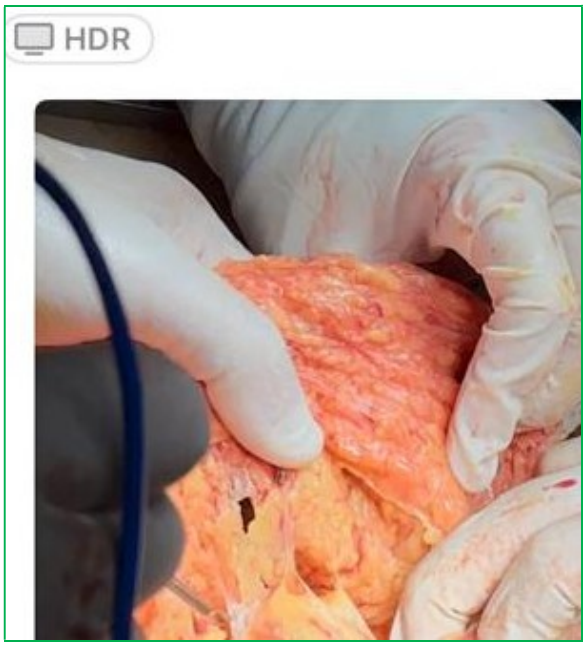

Figure 2. Dissection of the gastrocolic ligament.


Figure 3. Dissection of the lesser curvature of the stomach.

Figure 4. Preparing the gastric conduit. Modelling of the lesser curvature with GIA.

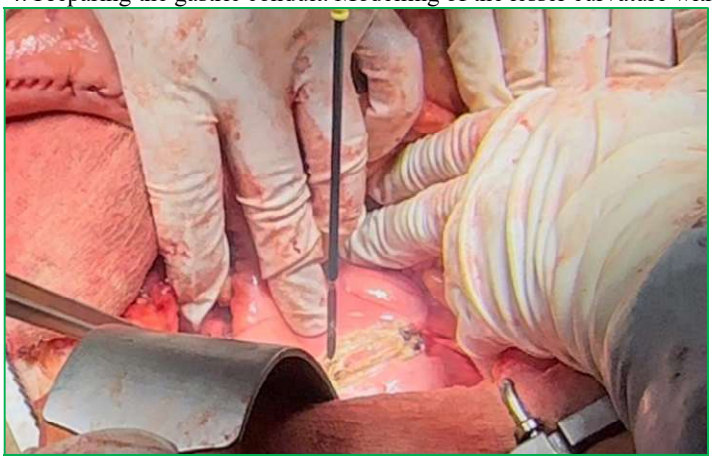

Figure 5. Heineke-Mikulicz pyloroplasty.

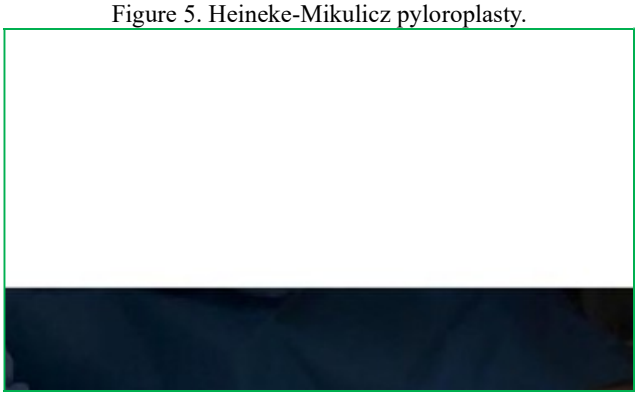

Figure 6. Right thoracotomy incision.

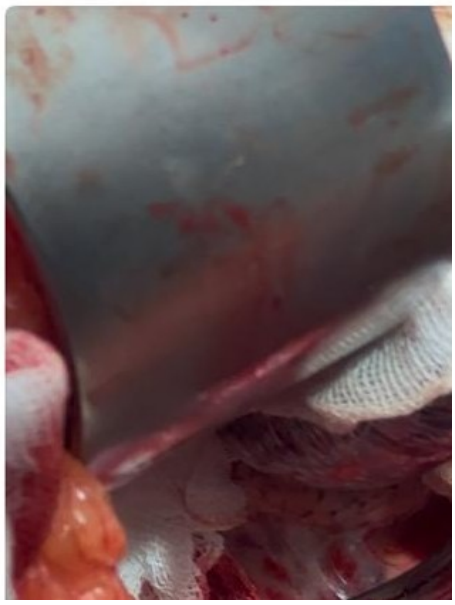

Figure 7. Dissection of the distal esophagus.

Figure 8. Mounting the circular stapler head on the proximal esophagus.

Figure 9. The gastric conduit is passed through the diaphragmal hiatus.

Figure 10. Complete eso-gastric anastomosis (Ivor-Lewis).

Figure 11. Abdominal incision (vertical), thoracic incision (horizontal, closed) and drains (left).

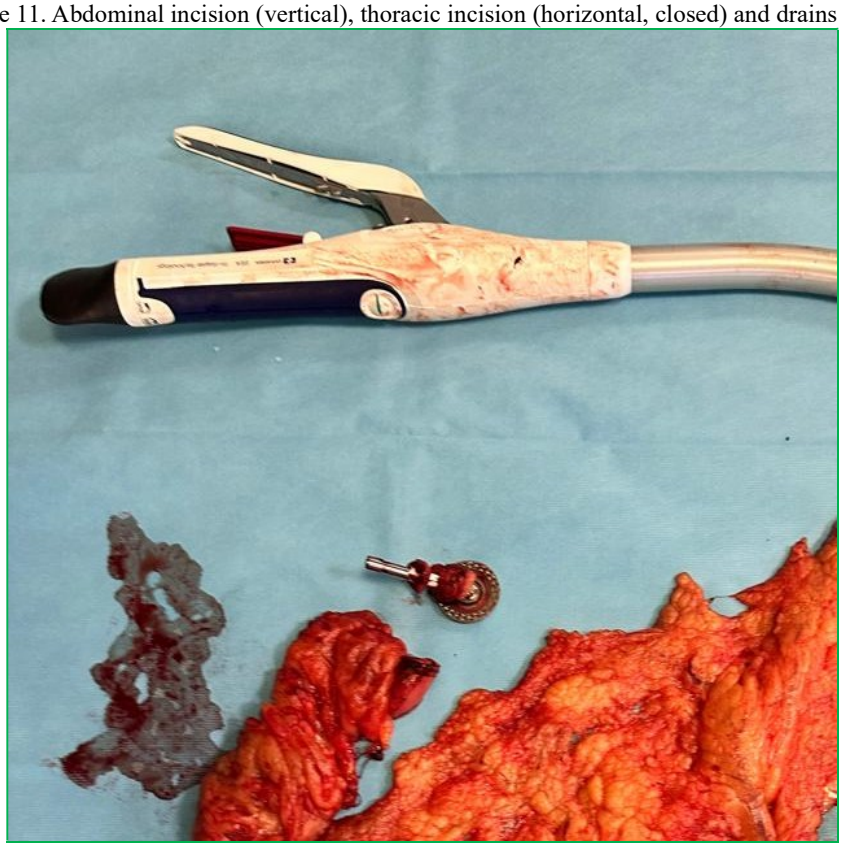
Figure 12. The resected specimen.

3. Discussion

Current studies and meta-analyses highlight the importance of Child-Turcotte-Pugh classification of cirrhotic patients in estimating the post-operative complications. Child A and B liver cirrhosis may in itself not

contraindicate surgical esophagectomy, but patient selection is paramount as esophageal cancer is associated with a high rate of early post-operative complications.
Child A patients with an adequately compensated liver cirrhosis may respond to radio-chemotherapy similarly to patients with esophageal cancer without cirrhosis.
Conversely, Child B patients do not tolerate well the appropriate chemo-radiotherapy protocols, and are at risk of serious systemic complications.
A consensus should be reached on a case by case manner regarding Child B patients, whether they should receive a milder chemo-radiotherapy protocol or undergo endoscopic treatment.

4. Conclusion

In conclusion, patients undergoing major surgery with concomitant liver cirrhosis are at a greater risk of developing serious complications, such as hepato-renal syndrome, ascites, haemorrhage, anastomotic fistula and have a high mortality rate.

The multidisciplinary team should thoroughly assess the patient and provide a mature decision in the selection of surgery as a treatment modality for esophageal and gastric cancer, especially in cirrhotic patients of various degrees.

Conflict of interest

The author(s) declare(s) that there is no conflict of interest. The authors alone are responsible for the content and writing of the paper.

Financial disclosure

There is no financial support to this study.

Ethical aspect

Informed consent was obtained from all participants in the study and all procedures were conducted in accordance with the Declaration of Helsinki.

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