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Cholangiocarcinoma of the Common Bile Duct and Hepatic Hilum (Bismuth II) Complicated by Covid-19 – Case Report

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Abstract

Background

Cholangiocarcinoma is a rare tumour that originates from the epithelial lining and the peribiliary glands of the bile ducts. Our report's scope pertains to the diagnosis of perihilar cholangiocarcinoma, which was first described by Klatskin. Unfortunately, patients ask for medical assistance only after the development of jaundice due to biliary obstruction. Achieving the best standard of care requires meticulous workup and evaluation through a multidisciplinary team to correctly determine the eligibility of a patient for resection surgery.

Case presentation

A 78 years old male patient presents with jaundice and pruritus. Total bilirubin level is 24 mg/dl and imaging studies show a 2×2.5 cm tumour of the hepatic hilum. After the necessary preoperative consults, the patient underwent a surgical procedure, consisting of hepatic hilum resection, separate left and right hepatico-jejunal anastomoses en-Roux. Anastomoses are protected by 2 Kehr drains on the ducts. The first six postoperative days were uneventful, but on the 7th day the patient develops notable abdominal meteorism and diarrhoea of mostly biliary content for the following 3 days. The case is complicated by episodes of excessive haematochezia. Fibroscopy shows no active haemorrhaging site, but CT scan notes small bowel microinfarctions thus explaining haematochezia. It also confirms COVID-19 with a bilateral interstitial pneumonia and a microthrombus on the right peripheral lung segments. Following a careful treatment regimen, the patient was discharged in good health from the hospital.

Discussion

Studies show that COVID-19 gastro-intestinal symptoms were anorexia, diarrhoea, nausea, vomiting or diffuse abdominal pain. Haematochezia has been unusual. Hospitalized patients, on a bed-rest regimen with comorbidities had a tendency for small bowel microinfarctions. It is widely thought that ischaemia and bowel hypoperfusion is related to the cytokine storm, not a direct effect of the virus. A cytokine storm may be followed by an abnormal coagulation function, as in our patient.

Conclusion

Prior to major surgeries, especially in the hepato-biliary apparatus there is a mandatory evaluation to determine the operability of a patient. Not only the extent of the primary tumour, but also the comorbidities need to be taken into account. Following a rigorous surgical technique, a close monitoring of the patient and involving a multidisciplinary team of radiology, infectious disease, gastro-hepatology, oncology and intensive care doctors in the treatment plan has successfully treated such a rare and complex case.

Keywords: General Surgery, Bile Duct Tumor, Cholangiocarcinoma, Bismuth-Corlette, COVID-19.
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1. Introduction

Cholangiocarcinoma is a rare tumour that originates from the epithelial lining and the peribiliary glands of the bile ducts. It comprises approximately 3% of gastrointestinal malignant tumors [1].

From an anatomic perspective, cholangiocarcinoma is defined as either intrahepatic or extrahepatic based on the location. The majority of them stem from from the biliary confluence (perihilar cholangiocarcinoma). Hilar cholangiocarcinoma was initially described by Klatskin in 1965, and these tuomors make up for roughly 50% of bile duct carcinomas [2].

Among the risk factors for developing cholangiocarcinoma after a literature review, we can count primary sclerosing cholangitis as an autoimmune disease [3]; biliary cystic disease or congenital dilations of the biliary tree [4]; parasitic infections of the bile ducts [5]; chronic hepatolithiasis [6] and other genetic disorders or radioactive exposure [7].

The modified Bismuth-Corlette classification has been traditionally used to classify hilar cholangiocarcinoma patients [8]. In this schema, type I tumours are located distally to the confluence of the hepatic ducts. Type II tumours involve the confluence of the hepatic ducts. In type IIIA tumours involve the confluence and extend to the right hepatic duct; in type IIIB there is involvement of the confluence is involved along with the left hepatic duct. In type IV tumours there is extensive involvement of the confluence, both right and left hepatic ducts reaching the segmental bile ducts.

Unfortunately, patients ask for medical assistance only after the development of jaundice due to biliary obstruction. Achieving the best standard of care requires meticulous workup and evaluation through a multidisciplinary team to correctly determine the eligibility of a patient for resection surgery.

2. Case presentation

A 78 years old male patient presents with jaundice and pruritus. Total bilirubin level is 24 mg/dl and imaging studies show a 2×2.5 cm tumour of the hepatic hilum.
After the necessary preoperative consults, the patient underwent a surgical procedure.

2.1 Details of the procedure

A medially extended rooftop incision was chosen for adequate exposure of the hepatic hilum. Upon entering the peritoneal cavity, dissection along the hepato-duodenal and hepato-gastric and hepato-cystic ligaments follows. Retrograde cholecystectomy is performed.

Common hepatic duct is exposed and divided from other structures with a rubber band. Both hepatic arterial branches are identified and coloured rubber bands are passed. We follow with the dissection along the portal vein from the hilar level and gradually up to its bifurcation.

Hepatic ducts are identified. The procedure consists of hepatic hilar resection, separate left and right hepatico-jejunal en-Roux anastomoses. Anastomoses are protected by 2 Kehr drains on the ducts.

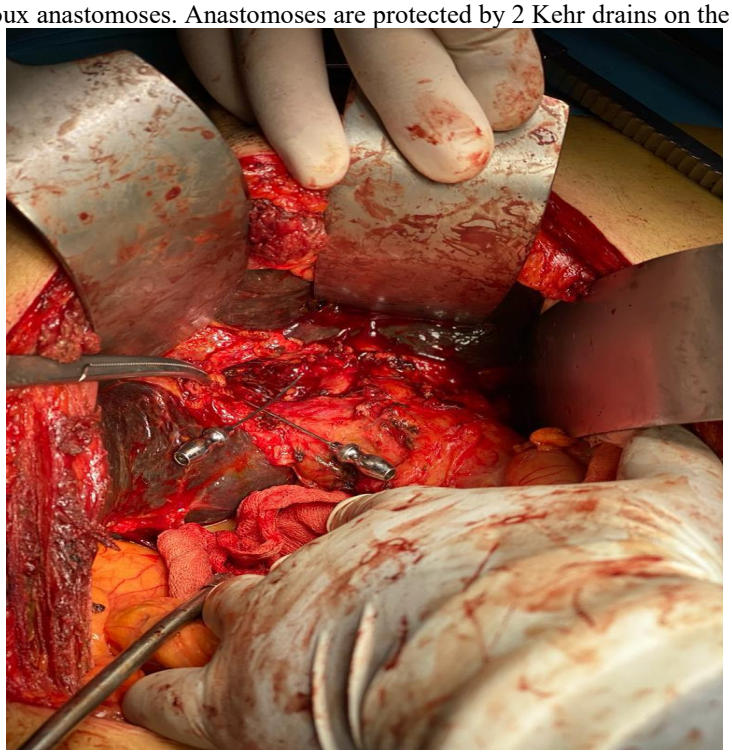


Figure 1. Cannulation of hepatic of right and left hepatic ducts following tumour resection.

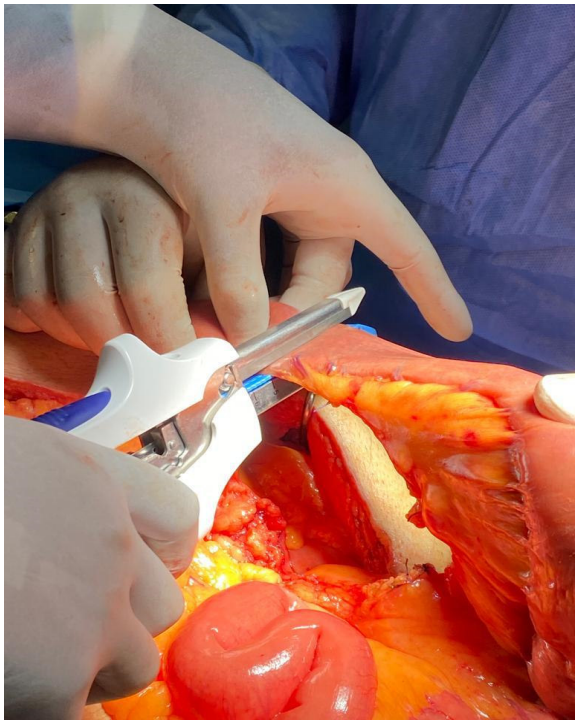


Figure 2. Preparing the Rou-en-Y jejunal limb.

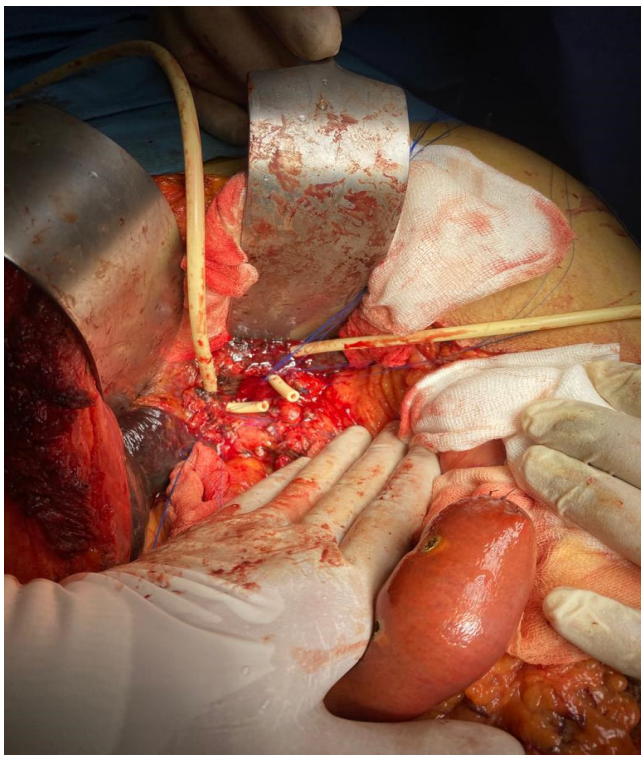


Figure 3. Inserting transductal Kehr drains.

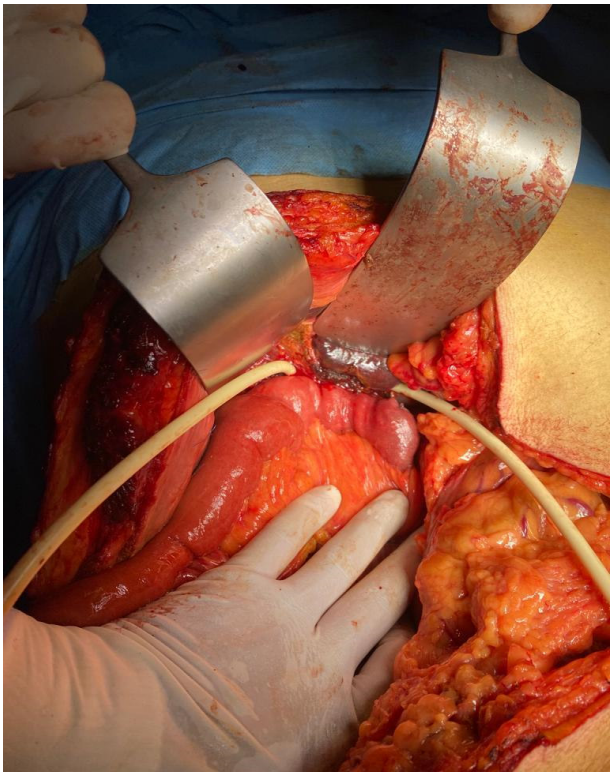


Figure 4. Separate hepatico-jejunal anastomoses.

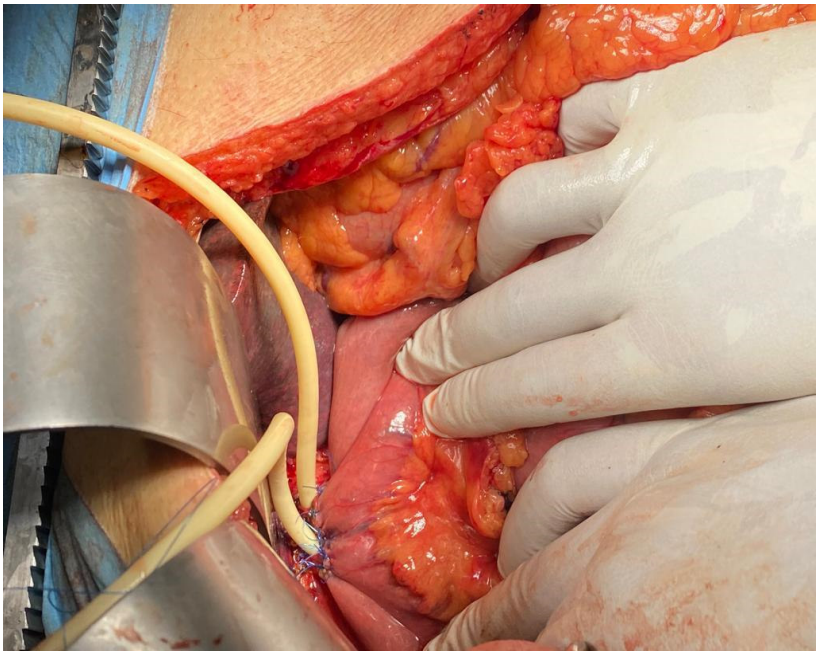


Figure 5. Final result of the procedure.

2.2 Post-operative period and COVID-19 complication

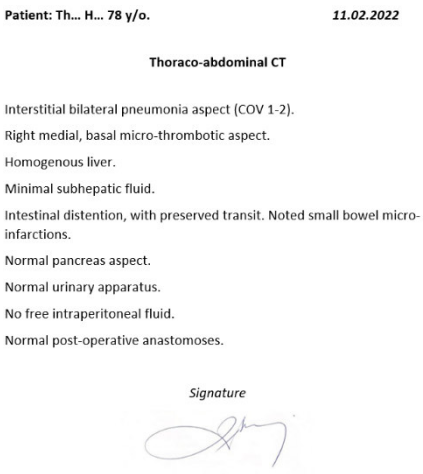
The first six postoperative days were quiet and uneventful. Total bilirubin level had lowered to 13 mg/dl.

On the 7th day the patient develops notable abdominal meteorism and diarrhoea of mostly biliary content. This condition continues for the following 3 days.

The case is complicated by episodes of excessive haematochezia.

Fibroscopy shows no active haemorrhaging site.

Thoraco-abdominal CT scan notes small bowel microinfarctions, thus explaining haematochezia. It also confirms COVID-19 with a bilateral interstitial pneumonia and a microthrombus on the right peripheral lung segments.



Patient: Th... H... 78 y/o. ***11.02.2022***

Thoraco-abdominal CT

Interstitial bilateral pneumonia aspect (COV 1-2).
Right medial, basal micro-thrombotic aspect.
Homogenous liver.
Minimal subhepatic fluid.
Intestinal distention, with preserved transit. Noted small bowel micro-infarctions.
Normal pancreas aspect.
Normal urinary apparatus.
No free intraperitoneal fluid.
Normal post-operative anastomoses.

Signature

Figure 6. CT report.

Following a careful treatment regimen and some difficult days in the surgical intensive care unit, the patient was discharged in good health from the hospital.

3. Discussion

During the COVID-19 pandemic, most of the attention and resources were shifted towards the management of the latter, so that the management of patients suffering malign diseases had become difficult for the surgeons. The burden of treating a cancerous disease and the risk of contracting a potentially fatal hospital infection hanged in the balance. It has aggravated the latency in which cancer is diagnosed and thus complicated the treatment due to an advanced stage.

Unfortunately, many patients with perihilar cholangiocarcinoma are diagnosed in such stages that do not permit surgical resection. However, there are palliative procedures that can benefit these patients such as biliary decompression with external or internal bile duct stents. This can resolve some symptoms related to jaundice such as pruritus. For patients undergoing surgery for cholangiocarcinoma, but intraoperatively an unresectable mass is found, cholecystectomy and biliary-enteric bypass can be performed.

Studies show that COVID-19 gastro-intestinal symptoms were anorexia, diarrhoea, nausea, vomiting or diffuse abdominal pain. Haematochezia has been unusual. Hospitalized patients, on a bed-rest regimen with comorbidities had a tendency for small bowel microinfarctions. It is widely thought that ischaemia and bowel hypoperfusion is related to the cytokine storm, not a direct effect of the virus. A cytokine storm may be followed by an abnormal coagulation function, as in our patient.

The role of adjuvant therapy in the form of chemotherapy or radiation after surgery is still debated among oncologist and surgeons. More data from prospective studies and clinical trials are needed before routinely recommending adjuvant therapies.

4. Conclusion

Cholangiocarcinoma of the hepatic hilum is in itself a challenging diagnosis for the surgeon in terms of the decision making for surgical resection and operative strategy. Involving a team of skilled radiologists, interventional radiologists and oncologists, as well as obtaining an informed consent from the patients are key factors for optimal outcome.

Prior to major surgeries, especially in the hepato-biliary apparatus there is a mandatory evaluation to determine the operability of a patient. Not only the extent of the primary tumour, but also the comorbidities need to be taken into account.

The greatest prognostic benefit in terms of survivability, life expectancy and life quality come from a successful complete resection with tumour free margins.

Following a rigorous surgical technique, a close monitoring of the patient and involving a multidisciplinary team of radiology, infectious disease, gastro-hepatology, oncology and intensive care doctors in the treatment plan has successfully treated such a rare and complex case.

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.

References
1. de Jong MC, Marques H, Clary BM, et al. The impact of portal vein resection on outcomes for hilar cholangiocarcinoma. Cancer. 2012;118:4737–4747.
2. DeOliveira ML, Cunningham SC, Cameron JL, Kamangar F, Winter JM, Lillemoe KD, Choti MA, Yeo CJ, Schulick RD. Cholangiocarcinoma: thirty-one-year experience with 564 patients at a single institution. Ann Surg. 2007 May;245(5):755-62. doi: 10.1097/01.sla.0000251366.62632.d3. PMID: 17457168; PMCID: PMC1877058.
3. Burak K, Angulo P, Pasha TM, Egan K, Petz J, Lindor KD. Incidence and risk factors for cholangiocarcinoma in primary sclerosing cholangitis. Am J Gastroenterol. 2004 Mar;99(3):523-6. doi: 10.1111/j.1572-0241.2004.04067.x. PMID: 15056096.
4. Suarez-Munoz MA, Fernandez-Aguilar JL, Sanchez-Perez B, Perez-Daga JA, Garcia-Albiach B, Pulido-Roa Y, Marin-Camero N, Santoyo-Santoyo J. Risk factors and classifications of hilar cholangiocarcinoma. World J Gastrointest Oncol. 2013 Jul 15;5(7):132-8. doi: 10.4251/wjgo.v5.i7.132. PMID: 23919107; PMCID: PMC3731526.
5. Cai WK, Sima H, Chen BD, Yang GS. Risk factors for hilar cholangiocarcinoma: a case-control study in China. World J Gastroenterol. 2011 Jan 14;17(2):249-53. doi: 10.3748/wjg.v17.i2.249. PMID: 21246000; PMCID: PMC3020381.
6. Lee JY, Kim JS, Moon JM, Lim SA, Chung W, Lim EH, Lee BJ, Park JJ, Bak YT. Incidence of Cholangiocarcinoma with or without Previous Resection of Liver for Hepatolithiasis. Gut Liver. 2013 Jul;7(4):475-9. doi: 10.5009/gnl.2013.7.4.475. Epub 2013 Apr 9. PMID: 23898390; PMCID: PMC3724038.
7. Jarnagin WR, Allen P, D'Angelica M, DeMatteo R, Kinh Gian Do R, Vauthey JN – Blumgart's Surgery of the Liver, Biliary Tract, and Pancreas, 6th ed, Elsevier 2017, p818. ISBN: 978-0-323-34062-5.
8. Bismuth H, et al: Management strategies in resection for hilar cholangiocarcinoma, Ann Surg 215(1):31–38, 1992.