Major Hepatopancreatoduodenectomy for Multifocal Cholangiocarcinoma of the Intrahepatic, Proximal, and Distal Bile Duct

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INTRODUCTION

A 58-year-old female patient presented in the outpatient clinic with obstructive jaundice that had lasted over one month. Her past medical history includes cholelithiasis treated by sphincterotomy, lithotripsy and stone extraction followed by a laparoscopic cholecystectomy 5 months ago. Hepatic function examination revealed the following results: ALT 927 U/L, AST 722 U/L, total bilirubin 6.8 mg/dl, direct bilirubin 3.8 mg/dl and ALP 535 UI/L, examination of tumor biomarkers yielded the following results: Carbohydrate Antigen 19.9 (CA19.9) 109U/mL, with Carcinoembryonic Antigen (CEA) and Carbohydrate Antigen 125 (CA125) both in the normal ranges.

Magnetic resonance cholangiopancreatography and computed tomography scan showed the presence of a solid lesion that has its epicenter in the anterior bifurcation of the right hepatic duct and adopts a morphological pattern of a space-occupying lesion in association with a second lesion that involves the hepatic / common bile duct and adopts a periductal morphological pattern infiltrator and a third lesion that produce a thickening and pathological reinforcement of the greater papilla that protrudes into the second duodenal portion. Adenopathy in the portocaval space. PET CT showed intrahepatic biliary dilation with 3 hypermetabolic lesions in the right intrahepatic bile duct at the level of segment 8 (25mm - SUV 10), in the proximal bile duct, 2cm from biliary confluence (20mm - SUV 6) and in the pre-papillary bile duct [1] (35mm - SUV 7.4) (Figure 1).

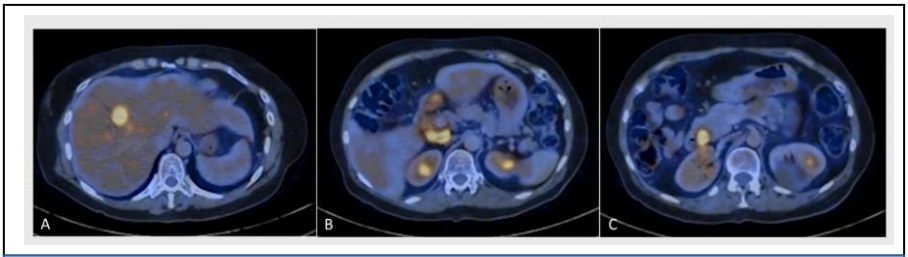

Figure 1: Axial FDG PET-CT images demonstrate 3 hypermetabolic lesions at the three levels of the biliary duct. Primary tumor maximum standardized uptake value is 10 in a 25mm lesion located in the right intrahepatic bile duct at the level of segment 8 (A), 6 in the 20 mm lesion of the proximal bile duct (2cm from the biliary confluence) (B), and 7.4 in the 35 mm lesion at the pre-papillary bile duct (C).

After staging laparoscopy, N2 Lymphadenectomy, "en bloc" resection of the right hemi liver, caudate lobe, and bile duct resection was performed together with pancreatoduodenectomy (Figure 2). Pancreas transection preceded liver transection.

The reconstruction phase was performed on a single-loop by a duct-to-mucosa pancreatojejunostomy, Roux en Y left hepaticojejunostomy, and gastrojejunostomy. Postoperative pathological examination revealed the following results: multifocal cholangiocarcinoma [2] (ductal adenocarcinoma) 3 lesions: - Intrahepatic ductular, moderately differentiated (G2), with vascular and perineural infiltration, measures 2.6 x 2.2 x 2 cm, distance 0.2 cm. from surgical margin-Common bile duct, poorly differentiated (G3), with peri/intraneural infiltration, measures 1.6x 1 x 1 cm.-Intrapancreatic, ampulla of Vater, poorly differentiated (G3), infiltrates the duodenal wall up to the submucosa, presents perineural infiltration, measures 1.8 x 1.2 x 1 cm, and is 4.5 cm apart. of the surgical margin (Figure 3). Lymph nodes: 2 out of 7 with diffuse submassive infiltration due to adenocarcinoma. Proximal biliary margin: negative. Immunohistochemistry showed the following results: CK7 (-), CK19 (+), CEA (+). At the 5th postoperative day a Grade A pancreatic fistula developed that closed spontaneously before discharge on day 21st.

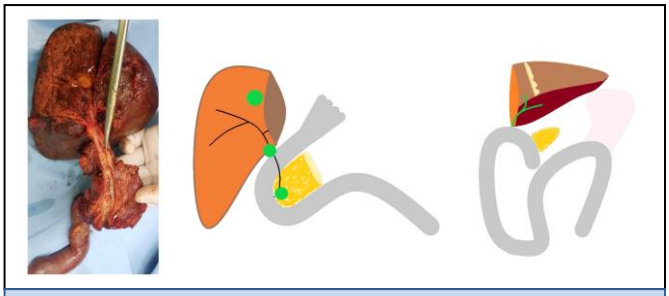

Figure 2: Surgical specimen and schematic representation of en-block major hepatopancreatoduodenectomy for multiple (3) cholangiocarcinoma localized in the three anatomic divisions of the biliary tract: intrahepatic (white arrow), perihilar (scissor tip), distal (white arrow). A Specimen of en-block right hemi hepatectomy plus segment 1, pancreatoduodenectomy, bile duct resection and, lymphadenectomy. B Scheme of resection C Reconstruction.

Major Hepatopancreatoduodenectomy is a complex operation that may achieve curative treatment for selected patients with advanced or widespread extrahepatic cholangiocarcinoma [3]. Multifocal tumor is a less common indication for this complex surgical procedure. Patient selection is critical, and the surgical technique should be adapted to the anatomical conditions providing that is possible to achieve R0 resection.

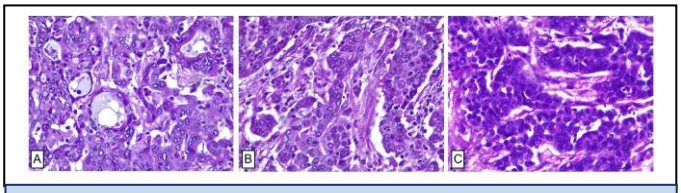

Figure 3: Postoperative pathological examination revealed a multifocal cholangiocarcinoma. Photomicrograph (H-E stain) of the mass forming intrahepatic type tumor showing a moderately differentiated adenocarcinoma (A). Photomicrograph (H-E stain) of the mass forming intrahepatic tumor (A), common bile duct (B) and, intrapancreatic distal bile duct (C) shows that the lesions are made up of solid cords, nests, and small glandular structures complex and cribriform. The cells are polygonal of medium size, they exhibit marked pleomorphism, a moderate amount of amphophilic cytoplasm and large, vesicular nucleus, with clear nucleolus and granular chromatin marginalization. Anisocariosis is marked, recognizes bizarre/monstrous core shapes. Presence of atypical mitoses and detritus karyorrhectic.

DECLARATIONS

Consent for Publication. The patient presented in this article gave her permission for the publication for the materials included in this manuscript.

CONFLICT OF INTEREST

The authors declare no competing interests.

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