Total Pancreatectomy with Spleen Preservation for Distal Cholangiocarcinoma Synchronous with Multifocal IPMNs and a Neuroendocrine Tumour of the Pancreas

Abdelhak Lamara1*, Badreddine Nini1, Mohamed Boukhane1, Sid Ahmed Medjahdi1, Amel Soualmia2, Abdelkrim Rehamnia3, Nacereddine Lemaici4 and Salilha Benyarbah1

1Department of General Surgery, Regional Military University Hospital of Constantine, Algeria
2National Transplant Coordination, Algeria
3Department of Gastroenterology, Regional Military University Hospital of Constantine, Algeria
4Department of Pathology, Regional Military University Hospital of Constantine, Algeria

Abstract

Introduction: Total pancreatectomy is the treatment of choice for multiple tumor locations in the pancreas, especially when it comes to the multifocal association of different lesions.

Case Presentation: We report the case of a 62-year-old woman who underwent a complete pancreatectomy with spleen preservation for distal cholangiocarcinoma synchronous with multifocal IPMNs and a neuroendocrine tumor of the pancreas.

Discussion: In the presence of a diffuse disease of the pancreas and/or in the case of tumor association, total pancreatectomy remains the only valid oncological option.

Conclusion: Total pancreatectomy can be performed safely and without added risk in the presence of multiple or multifocal lesions of the pancreas.

Keywords: Total pancreatectomy; Multifocal lesions; TIPMN; Distal cholangiocarcinoma

Introduction

The synchronous coexistence of three different types of tumors in a patient remains rare. It is sometimes not easy to differentiate between a Distal Cholangiocarcinoma (DCC) and an Adenocarcinoma of the Head of the Pancreas (AHP). The coexistence of intraductal tumor of the pancreas IPMNs and a DCC may be linked to the possibility of the pre-existing bile duct tumors (BT-IPMN). MRI and Echoendoscopic ultrasonogram (EUS) are very useful for diagnosis and monitoring. The presence of diffuse localizations on the pancreas always poses a problem concerning the type of surgical resection that must be proposed to ensure oncological control of the disease. Total Pancreatectomy (PT) is the only alternative for cancer surgery without added mortality or morbidity.

Case Presentation

A 62-year-old woman was seen in surgery consultation for fever and hypochondrium pain. The patient mentioned similar episodes associated with chills evoking flares of cholangitis; she had no pruritus. The patient is followed in diabetology for non-insulin-dependent diabetes and in cardiology for hypertension for 3 years. The patient has also had surgery for gallbladder stones 40 years ago. The clinical examination was normal. The biology showed: Alkaline phosphatases at 1.5 times the upper limit of normal (N), gamma-glutamyl-transferase at 4 N, total bilirubinemia at 4.8 mg/l. The serology was negative, CA 19-9 antigen was at 213 ng/ml. (5 N). Weight 73 kg high of 164 cm.

Imaging (ultrasound and CT scan) showed a centimeter round nodule in the distal bile duct (Figure 1). The EUS showed a tumor polypoid in distal bile duct without sign of aggression or loco regional extension (Figure 2).

On the pancreas, EUS showed pancreatic steatosis with Intraductal Papillary and Mucinous tumor (IPMNs) of the pancreatic secondary canals with signs of degeneration at the isthmic and caudal level but without signs of loco regional infiltration. The pathology of the biopsies was in favor...
A total pancreatectomy was proposed given the coexistence of multiple lesions on the pancreas associated with a distal cholangiocarcinoma. The patient was well informed about her diabetes, how to deal with hypoglycemia, insulin injection techniques and self-monitoring, and pancreatic extracts at each meal. A total pancreatectomy with conservation of the spleen without conservation of the pylorus was performed, associated with a cleaning of the hepatic pedicle, the celiac trunk the splenic pedicle and total resection of the mesopancreas. The bile duct was resected just at level of the convergence. The patient received two globular pellets intraoperatively; the intervention time was 5 h 53 min (Figure 3).

In postoperative, we adopted the principle of fast track, postoperative analgesia with morphine, insulin therapy, and a diet comprising 55% carbohydrates, 25% lipids and 20% protein, enzyme substitution treatment with proton pump inhibitor during the 3 postoperative months and during follow-up. The patient was hospitalized at the diabetology unit for two episodes of hypoglycemia.

Definitive anatomopathology finds an ulcerobourgeonant tumor of 2 cm in the distal bile duct, and 19 peri-pancreatic nodes. The histology showed a well-differentiated cholangiocarcinoma of 2 cm from the distal bile duct infiltrating the muscularis. There is a presence of tumor vascular emboli, and an absence of perineural involvement. The nodes are not infiltrated (PT2NOMO). Several foci of infra-centimeter gastric type IPMNs, some of which are of low-
grade dysplasia in the head, and a well differentiated neuroendocrine tumor of 05 mm (G1) from the tail of the pancreas were also found (Figure 4). CT scan and MRI at 6 months, 12 months and 18 months did not show signs of recurrence (Figure 5).

**Discussion**

The association of IPMNs and DCC seems very rare and requires more observations. In the case of our patient the question that arises is: Is it an association with degenerate BT-IPMN and IPMNs?

Papillary tumors of the bile ducts (BT-IPMN) are rare, often multifocal and obstructive; transformation into invasive carcinoma is possible. Invasive forms have a very poor prognosis [1,2]. CT scan, C-MRI and UE are the key first-line exam for diagnosis and follow-up of IPMNs.

The presence of jaundice in a patient with cystic lesions of the head of the pancreas, the presence of a solid component within the cystic mass or of a wall nodule taking contrast and reaching the main pancreatic duct >9 mm are in favor pejorative forms [3]. Although these neoplasms share similar clinical and histological characteristics. Based on their significant risk of malignancy, BT-IPMN requires radical surgical resection and careful monitoring [4].

It is not uncommon to confuse DCC with AH of the pancreas. UE can be useful in differentiating between the two pathologies, especially in cases where CT scan cannot detect an intrapancreatic mass or dilation of the pancreatic duct [5]. CCD has a favorable prognosis compared to adenocarcinoma of the pancreas [6,7]. The objective of surgical resections is to allow the removal of all progressive lesions. However, the damage can be multifocal and therefore requires a total pancreatectomy, as is the case with our patient. A total pancreatectomy performed for degenerate IPMNs associated with CCD and the histology revealed an associated pancreatic neuroendocrine tumor. Total pancreatectomy may be performed for diffuse pancreatic disease. Mortality from complications of diabetes is rare. The quality of life and the difficulties of managing diabetes after total pancreatectomy should be taken into account and reserve this technique for carefully selected patients [8].

Operative mortality is improved compared to previous reports. Greater survival benefits have been seen in younger patients with smaller resected tumors with the negative margin and in the absence of lymph node infiltration [9]. Long-term survival was equivalent to a partial pancreatectomy. Therefore, total pancreatectomy can be used in multifocal or diffuse pancreatic locations. Patients should receive adequate doses of synthetic insulin and pancreatic enzyme

---

Figure 4: Definitive anatomopathology.

Figure 5: MRI 18 months after operation: No recurrences.
supplementation to ensure long-term survival [10]. It is important to
define the survival characteristics of patients with invasive pancreatic
tumors who have undergone TP and above all to provide a basis for
comparative analyze on the benefits of removing the entire gland with
the intention to erase all the microscopic disease [9]. Oncological
resection RO is a predictor of DCC survival, 5-year survival goes
from 0% to 27% depending on the radicality of the surgical excision
[11,12]. The perineural invasion and the extra-capsular lymphatic
extension also represent poor prognostic factors [11,13]. The presence
of positive Lymph node is associated with poor prognosis [11,13,14].
Neoadjuvant treatment based on Gemcitabine or 5FU seems to
have a benefit on the possibility of radical surgery R0, 33% complete
response [15], survival is better after neoadjuvant chemotherapy vs.
adjuvant chemotherapy (53% vs. 23%), postoperative radiotherapy
can be useful for the control of microscopic residues [15,16].

Conclusion

The coexistence of multifocal pancreatic tumor lesions and
distal cholangiocarcinoma leaves no choice for partial resection of
the pancreas or even preservation of the central pancreas. Total
pancreatectomy remains the only guarantee of an oncologic resection
of such lesions. The reduction in mortality rate and the possibility
of managing postoperative complications prompted surgeons to
propose total pancreatectomy as the reference treatment for multiple
and multifocal lesions of the pancreas.

References

1. Adimoolam V, Sanchez MJ, Siddiqui UD, Yu S, Dzurita JD, Padda MS, et
   al. Endoscopic ultrasound identifies synchronous pancreas cystic lesions

   al. Differential diagnosis of cystic tumors of the pancreas by endoscopic

   progression of intraductal papillary mucinous neoplasms with worrisome
   features and high-risk stigmata undergoing non-operative management: A

4. Minagawara N, Sato N, Morii Y, Tamura T, Higure A, Yamaguchi K. A
   comparison between intraductal papillary neoplasms of the Biliary Tract
   (BT-IPMNs) and Intraductal Papillary Mucinous Neoplasms of the
   Pancreas (P-IPMNs) reveals distinct clinical manifestations and outcomes.

   al. Different clinical characteristics between distal cholangiocarcinoma and

   RC, et al. Distal cholangiocarcinoma and pancreas adenocarcinoma: Are
   they really the same disease? A 13-institutio study from the US extrahepatic
   biliary malignancy consortium and the central pancreas consortium. J Am

7. Nakanuma Y, Kakuda Y. Pathologic classification of cholangiocarcinoma:

   contemporary evaluation of the cause of death and long-term quality of life

   PD, et al. Total pancreatectomy for pancreatic ductal adenocarcinoma:

    The clinical outcomes after total pancreatectomy. Dig Surg. 2017;34(2):142-
    50.

11. Murakami Y, Uemura K, Hayashidani Y, Sudo T, Hashimoto Y, Ohge H,
    et al. Prognostic significance of lymph node metastasis and surgical margin

12. Fernandez-Ruiz M, Guerra-Vales JM, Colina-Ruizdelgado F.
    Comorbidity negatively influences prognosis in patients with extrahepatic

    S. Prognostic factors after pancreatoduodenectomy with extended
    lymphadenectomy for distal bile duct cancer. Arch Surg. 2002;137(1):69-
    73.

    M, et al. Lymph nodes metastasis is a risk factor for bone metastasis from
    extrahepatic cholangiocarcinoma. Hepatogastroenterology. 2012;59(118):
    1758-60.

    Neoadjuvant chemoradiation for extrahepatic cholangiocarcinoma. Am J

    pancreatoduodenectomy for distal bile duct cancer. J Radiat Oncol Biol