East African Scholars Journal of Medicine and Surgery
Abbreviated Key Title: EAS J Med Surg
ISSN: 2663-1857 (Print) & ISSN: 2663-7332 (Online)
Published By East African Scholars Publisher, Kenya

OPEN ACCESS

Volume-8 | Issue-3 | Mar-2026 | DOI: https://doi.org/10.36349/easjms.2026.v08i03.006

Case Report

Management of an Adenocarcinoma of the Head of the Pancreas Classified as Borderline: About a Case

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Article History
Received: 05.01.2026
Accepted: 03.03.2026
Published: 12.03.2026

Journal homepage:
https://www.easpublisher.com

Quick Response Code

Abstract: Adenocarcinoma of the pancreas (AP) accounts for 90% of pancreatic tumours and is expected to become the second leading cause of cancer deaths in Europe and the United States by 2030. Its incidence has been increasing significantly for several years. The curative treatment of adenocarcinoma of the pancreas until recently relied mainly on surgery, which is only feasible in a limited number of cases due to the high frequency of loco-regional (lymph node and vascular) and metastatic extension, particularly hepatic. Chemotherapy has both curative and palliative indications. In recent years, systemic induction treatment has become the reference for borderline classified tumors. The results of the first prospective randomized phase II studies confirm the interest of a systematic induction treatment. We report the case of a 57-year-old woman, diagnosed with an adenocarcinoma of the head of the pancreas classified as borderline. Induction chemotherapy was performed, followed by reassessment and cephalic duodenal-pancreatectomy surgery. The aim of this work is to present the diagnostic and therapeutic approach adopted for a borderline tumor of the pancreas head.

Keywords: Adenocarcinoma of the pancreas, cephalic duodenopancreatectomy, induction chemotherapy, borderline tumor of the pancreas.

INTRODUCTION

Adenocarcinoma of the pancreas (ADCP) accounts for 90% of pancreatic tumours and is expected to become the second leading cause of cancer deaths in Europe and the United States by 2030, with a clear increase in incidence in recent years. This cancer maintains an extremely reserved prognosis, with a 5-year survival of 1 to 3% and a median survival of 4 to 8 months. In about 80% of cases, the tumor is unresectable at diagnosis, classified as either borderline or metastatic [1].

The purpose of ADCP excision is to obtain complete resection of a localized tumor with healthy margins. R0 resection, defined as a distance between the margins and the tumor greater than 1 mm, is associated with better prognosis, with a median survival of between 30 and 40 months. The first approach of the superior mesenteric artery has become systematic, because it allows to ensure this R0 resection. The most prognostically important resection margin is the retrovascular margin, which consists of the retroportal lamina (fatty, lymphatic and nervous tissue located behind the mesenterioportal venous axis and in contact with the AMS) [1–2].

However, immediate resection is not recommended in cases of borderline pancreatic cancer due to the high risk of positive margin, whose negative prognostic impact is well established [3–4]. For borderline venous pancreatic cancer, induction treatment is recommended, even though pancreatic and vascular resection is technically feasible, as venous resection is associated with a less favourable prognosis [5]. In addition, induction chemotherapy allows for the selection of biologically resectable diseases and to avoid futile pancreatectomies.

CASE REPORT

It is about Mrs. B.M., 57 years old, with a BMI of 29, type II diabetic and hypertensive, who consults for a pain in the right hypochondrium, which appeared a week ago.

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The clinical examination revealed a hemodynamically stable patient with localized pain in the right hypochondrium. No icterus was observed. The biological balance was normal, with the exception of HbA1c at 7% (norm 4–6).

The abdominal ultrasound revealed a tissue nodule in projection of the small pancreas of Winslow, measuring 22 20 mm. The MRI confirmed a nodular formation of the small pancreas, in iso-signal T1, discrete hypersignal T2, with moderate hypersignal on the broadcast sequence and restriction of the ADC. After gadolinium injection, the lesion presented a moderate and relatively homogeneous enhancement, measuring 24 mm, with approximately 90 ° of contact with the upper mesenteric artery and vein, while maintaining a border of separation with the anterior face of the aorta.

The biopsy under echo-endoscopy showed a morphological appearance and an immunohistochemical profile compatible with a well-differentiated adenocarcinoma of the exocrine pancreas.

After eight cycles of FOLFIRINOX chemotherapy, a re-evaluation showed morphological stability of the lesion, with similar dimensions and persistent contact with the mesenteric artery and vein. A thoraco-abdominal scan, carried out as part of the extension evaluation, revealed no abnormalities.

A cephalic duodenopancreatectomy was performed, with first approach of the superior mesenteric artery and assembly according to Child's technique. The post-operative evolution was favorable, with resumption of feeding on day 2 and exit authorized on day 8.

DISCUSSION

The National Comprehensive Cancer Network (NCCN) definition of a borderline tumor is as follows: [6]

- **Concerning the portal vein or the superior mesenteric vein:** contact 180 ° or contact < 180 ° with unevenness of the calibre of the non-occluded vein, and/or surgically reconstructible tumour occlusion.
- **On the common hepatic artery:** contact < 180 °.
- **On the superior mesenteric artery:** short contact, regardless of the degree of circumference, without invasion of the celiac trunk or the origin of the common hepatic artery, surgically reconstructable.
- **On the celiac trunk:** contact < 180 °.

In our case, the tumor showed a contact of about 90 ° with the upper mesenteric artery and vein, which justified the implementation of induction chemotherapy. According to literature data, due to the high risk of R1 resection and despite the lack of high-level evidence studies, induction treatment should be preferred to surgery from the outset.

The term "borderline" is also used for patients whose operability is limited due to age and/or comorbidities. In our case, the patient was classified ASA II and WHO 0.

R0 resection rates, major tumor responses and prolonged survival in the subgroup of operated patients, particularly after FOLFIRINOX, are promising [7]. For tumors associated with venous extension, survival after resection is better in intention to treat after induction treatment than after surgery from the outset.

In case of arterial borderline ADCP, neoadjuvant treatment is also recommended (Grade C). Indeed, tumors with arterial extension (celiac trunk, hepatic artery, superior mesenteric artery) are associated with dissemination along the lymphatics and peri-arterial nerve plexuses, making R0 resection very unlikely.

In a study of 105 patients operated after FOLFIRINOX chemotherapy, the vast majority of patients underwent venous resection (92%), and simultaneous arterial resection was performed in 16 patients (15%). The severe morbidity rate and mortality rates at 30 and 90 days were 21%, 8.5% and 10.4%, respectively. The median overall survival after surgery was 23 months [7]. In our case, arterial or venous resection was not necessary given the resectable nature of the tumor during surgery and the histological examination confirmed the R0 character of the resection.

The assessment of tumor response after induction treatment by imaging is difficult. The correlation between the radiological response and the anatomopathological response is low, and a lack of radiological response should not contraindicate surgical exploration to assess the possibility of resection [8].

The pathological analysis criteria for defining the tumor response (percentage of residual cells, necrosis, fibrosis) and their prognostic value remain controversial. *College of American Pathologists (CAP)* score is the most widely used classification system [9].

CONCLUSION

Pancreatic ductal adenocarcinoma (PCA) borderline resectable (BR) is currently a well recognized entity, defined by specific anatomical, biological and conditional characteristics. It includes patients with an intermediate stage of the disease, located between the resectable stage and the locally advanced stage. The term "resectable borderline" identifies a tumor with aggressive biological behavior, for which a neoadjuvant approach is preferred to initial surgery.

Conflicts of Interest: None related to this article.

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Cite This Article: Khenchoul Youcef, Benmamar Hichem El Azhari, Boumendjel Mustapha, Zerrouk Dalel, Hamiouda Imen (2026). Management of an Adenocarcinoma of the Head of the Pancreas Classified as Borderline: About a Case. *East African Scholars J Med Surg, 8*(3), 112-114.