ORIGINAL RESEARCH PAPER

General Surgery

# ADENOCARCINOMA PANCREAS IN AN 18-YEAR-OLD MALE: A CASE REPORT

**KEY WORDS:**
Adenocarcinoma, Jaundice, Malignancy, Exocrine.

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**ABSTRACT**

Adenocarcinoma pancreas is the most common exocrine malignancy of the pancreas and the most common malignancy of the pancreas overall. It almost exclusively occurs above the age of 40 and more than fifty percent cases occur above the age of 70, with a slight male preponderance. Patients generally present with weight loss and jaundice and more often than not, palliative treatment remains the only modality for managing such patients. However, a high index of clinical suspicion can aid in early diagnosis even in patients with no risk factor for the disease. Incidence of the disease in ages below 35 is extremely rare and study conducted by Gaddam S et al [1] on incidence of pancreatic cancer in the USA from 2000-2018 revealed an incidence of 0.2/100000 in males and 0.3/100000 in females in the age group of 15-34. This case report is of an 18-year-old male who was diagnosed with pancreatic adenocarcinoma and was treated for the same.

## INTRODUCTION

Pancreatic malignancies can be broadly classified into exocrine and neuroendocrine cancers of which exocrine malignancies constitute 95% of all pancreatic malignancies. Of these exocrine malignancies, adenocarcinoma constitutes 80-85 %, specifically ductal adenocarcinoma, which arises from the lining epithelium of the pancreatic ducts. Pancreatic adenocarcinoma is also the most common periampullary malignancy.

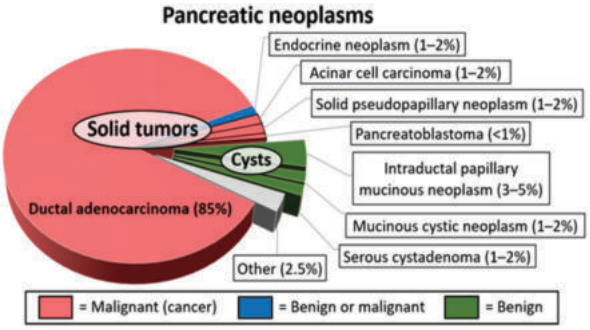


**Figure 1.- Incidence of various pancreatic neoplasms**

There are few very well-established risk factors for pancreatic adenocarcinoma which include the following-

**Age-** Pancreatic adenocarcinoma almost exclusively occurs above the age of 40 with majority above the age of 65 years.

**Sex-** Males are at slightly higher risk as compared to females.

**Race/ethnicity-** Black people are more likely than Asian, Hispanic, or white people to develop pancreatic cancer. People of Ashkenazi Jewish heritage are also more likely to develop pancreatic cancer.

**Smoking-** People who smoke tobacco are 2 to 3 times more likely to develop pancreatic cancer than those who don't. In fact, smoking is the single most important risk factor in development of adenocarcinoma of the pancreas.

**Obesity, diet, and alcohol-** Regularly eating foods high in fat is a risk factor for pancreatic cancer. Research has shown that obese and even overweight people have a higher risk of being diagnosed with and dying from pancreatic cancer. Chronic, heavy alcohol use can also increase the risk of pancreatic cancer, most likely by causing recurrent pancreatitis.

**Diabetes-** Many studies have indicated that diabetes increases the risk of developing pancreatic cancer, especially when a person has had diabetes for many years. In addition, suddenly developing diabetes later in adulthood, sometimes called new-onset diabetes, can be an early symptom of pancreatic cancer.

**Family history-** Incidence of pancreatic adenocarcinoma in two 1st degree relatives, increases the risk by 1.2-fold.

**Chronic pancreatitis.**

**Case Report.**

18-year-old male, presented to New Civil Hospital, Surat with complaints of yellowish discoloration of the body since 1 month and abdominal pain since 10 days. Patient gave no history of altered bowel habits, vomiting, fever, difficulty in consuming food or anorexia. On clinical examination, patient had pallor and was severely underweight (BMI -13.5 kg/m2). However abdominal examination was unremarkable. An ultrasound of the abdomen was suggestive of a hypoechoic periampullary lesion with resulting dilatation of the common bile duct and distended gall bladder. On admission patient's bloodwork was as follows-

| PARAMETER | VALUE |
|---|---|
| Hemoglobin | 8.9 g/dl |
| Total Counts | 5000/cmm |
| PCV | 26.4% |
| Platelet Counts | 297000 |
| INR | 1.16 |
| Alkaline Phosphatase | 215 U/l |
| Total Bilirubin | 6.9 mg/dl |
| Direct Bilirubin | 5.9 mg/dl |
| S. Amylase | 64 U/l |
| S. Lipase | 7 U/l |
| Alanine Transaminase | 154 U/l |
| Random Blood Sugar | 118 g/dl |

MRI revealed relatively well defined heterogeneously enhancing lesion measuring approx. 2.6 x 2.3 x 2.7 cm in the head of pancreas in the periampullary region causing complete obstruction of the common bile as well as pancreatic duct with significant dilatation. All these features were likely to represent a malignant neoplastic etiology. However, there was no evidence of any distant metastasis. Patient had no family history of any malignancy.

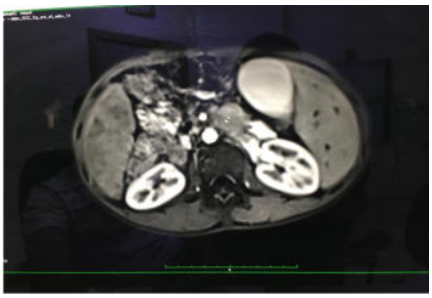

**Figure 2.- Cursor shows the mass at the level of right renal vein, between SMA and IMA.**

Patient underwent Whipple's procedure with feeding jejunostomy. Intraoperatively, approximately 3x4 cm sized mass was seen arising from the head of the pancreas with dilated common bile duct. 6 lymph nodes were identified and removed with the specimen and sent for histopathological examination. Post operatively patient was given total parenteral nutrition for 3 days, and on post operative day 4, tube jejunostomy feeding was initiated along with which, supplementary parenteral nutrition was continued. Post operative period was otherwise unremarkable. Patient was given oral feeds from post operative day 8 with no complications observed. Histopathology was suggestive of moderate to well differentiated adenocarcinoma of pancreas. All margins of the specimen were free from tumor, as were the resected lymph nodes. Patient was started on gemcitabine from post operative day 15 and was discharged on post operative day 16. Patient received 6 cycles of gemcitabine. Feeding jejunostomy was removed 2 months post-surgery.

## DISCUSSION.

A similar case was reported in Mulago National Referral Hospital, Kampala, Uganda, where an 18-year-old boy was diagnosed with pancreatic adenocarcinoma. Similar to our case report, patient had no risk factors and had presented with abdominal pain but no jaundice and clinical examination revealed a hard lump palpable in the epigastrium. Patient was managed by exploratory laparotomy with splenectomy with resection and anastomoses of transverse colon with distal pancreatectomy as in this particular patient's case, mass was adherent to transverse colon with splenic metastases. [4] Postoperatively this patient too received gemcitabine-based chemotherapy.

Autoimmune pancreatitis is the main differential diagnosis in young patients. Histological evidence of lymphoplasmacytic infiltrate with fibrosis clinches the diagnosis of autoimmune pancreatitis.

However, alcohol induced pancreatitis can also show these histological features and hence the diagnosis of autoimmune pancreatitis should be confirmed by radiological, histopathological and serological criteria. Even though autoimmune pancreatitis can mimic pancreatic cancer, it responds very well to corticosteroids and hence should be diagnosed early.

## CONCLUSION.

Pancreatic malignancies carry a very poor prognosis as they are often diagnosed late. Early identification of risk factors and screening population at risk is a good way to identify the disease early, thereby preventing unnecessary morbidity and mortality. Detailed history and clinical examination are of utmost importance to identify these cases even when clinical suspicion is low.

## REFERENCES

[1] Gaddam S, Abboud Y, Oh J, Samaan JS, Nissen NN, Lu SC, Lo SK. Incidence of Pancreatic Cancer by Age and Sex in the US, 2000-2018. JAMA. 2021 Nov 23;326(20):2075-2077. doi: 10.1001/jama.2021.18859. PMID: 34689206; PMCID:PMC8543346.

[2] Maingot's abdominal operations, chapter 73, Cancers of Periampullary region.

[3] **Figure 1-** Diffusion-weighted MR Imaging of Solid and Cystic Lesions of the Pancreas by Yi Wang[1], Frank H. Miller , Zongming E. Chen, Laura Merrick, Koenraad J. Mortele, Frederick L. Hoff, Nancy A. Hammond, Vahid Yaghmai, Paul Nikolaidis .

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