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A CASE REPORT ON PERIAMPULLARY CARCINOMA

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ABSTRACT

Periampullary carcinomas are rare forms of cancers that contribute approximately 6% of periampullary malignancies with an incidence of 2.9 cases for 10, 00,000 population and accounts for approximately 0.2% of GI tract cancers (1). Clinical presentations of pancreatic neoplasm were mainly pain, rapid loss of weight (unremittable), jaundice, nausea, lack of appetite, feeling of illness, and vomiting. Here we present a 61 years old male patient with complaints of upper abdominal pain, severe loss of weight with a known history of type 2 diabetes mellitus. He was proposed with all necessary investigations and diagnosed with periampullary carcinoma and advised for a surgery called Whipple pancreaticoduodenectomy.

INTRODUCTION

Peri ampullary carcinomas are tumors or neoplasms that arise either from the ampulla of the pancreas, including ampullary, duodenal, distal-like duct, and cancer in the head region in the pancreas (2). The main causes for pancreatic tumors and periampullary carcinoma were not known but a variety of risk factors that were known were cigarette smoking (which accounts for 25 to 30% of cases)(3). Other factors were DM, pernicious anemia, chronic pancreatic and adult-onset of diabetes mellitus (DM) and history of gastric surgery, multiple mole melanoma syndromes. Some other causes were coffee, alcohol consumption, the huge amount of fat and protein with stubby fruits and vegetables in the diet(4,5,6,7)

Guidelines from the International Association of pancreatology suggest that people with an inherited form of family history of Pancreatic neoplasm must be consulted to specialist centers that are capable enough to provide an expert clinical examination of pancreatic problems and providing patient counseling about genetic inheritance along with secondary examination (8).

The risk of pancreatic neoplasm is high seen in part of other cancer syndromes, including familial history for atypical Multiple Mole Melanoma Syndrome, peutz-jeghers syndrome, inherited non-polyposis colorectal carcinoma (HNPCC), familial breast and ovarian tumors syndromes, and inherited familial adenomatous polyposis (FAP) but not in Li-Fraumeni syndrome (9,10)

Periampullary tumors that arise from out of or within the high incidence in patients with FAP(11,12,13) and the number of periampullary neoplasms in FAP people was sufficient to suggest a policy of regular duodenal scope and biopsy examination for suspicious lesions.

Different types of exocrine pancreatic carcinomas exist, in which the most common were benign ductal adenocarcinoma that records for about 90% of all neoplasms and other malignant tumors that arise in the pancreas were rare. Symptoms of pancreatic cancer were mainly pain, severe and rapid loss of weight,9 (unremittable), and jaundice; other symptoms include nausea, anorexia, malaise, and vomiting along with long-lasting back pain are common (14,15,16). Other rare were migratory thrombophlebitis, palpable gallbladder (courvoisier's sign), fixed epigastric mass, abdominal ascites, high sized supraclavicular lymph node (Virchow's node).

No specific blood tests were known to identify periampullary carcinomas; initial abdominal ultrasonography is 80 to 95% detection of pancreatic carcinoma(16,17,18). Imaging technologies like Computed Tomography (CT) and Magnetic Resonance Imaging (MRI) were known to detect primary tumors and extrapancreatic spreads (20,21)

Treatments were palliative surgery for relieving complaints, Resectional surgery to intend cure, Endoscopic or

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Percutaneous biliary stenting to relieve jaundice and Chemo and radiation therapy as an adjuvant to surgery (22,23).

Four types of surgery were acceptable they are proximal pancreaticoduodenectomy with pylorus preservation in which the pylorus part of the pancreas is preserved, proximal pancreaticoduodenectomy with antrectomy (Kausch-Whipple), whole pancreaticoduodenectomy, and left distal pancreatectomy. Out of which the most commonly employed surgical procedure is Whipple pancreaticoduodenectomy with a 5years survival after resection of approx. 10% (24,25).

Case Presentation

Here we present a case of a 61 years old male patient with a history of diabetes mellitus who developed jaundice 5 months back, which was a waxing and waning type associated with pruritus and upper abdominal pain, the patient was normal 5 months back with a history of weight loss. The patient was sent to the tertiary care center where he underwent an Endoscopy that showed a Normal study. Surgical Oncology opinion was taken and advised for Endoscopic ultrasound which suggests Distal CBD Stricture with a polypoidal component, CBD with Calculus. ERCP done CBD Calculous Extraction done, Sphincterotomy done, Biliary brushings taken which suggests positive for Malignancy. He underwent a biliary CBD stenting procedure.

Fig 1 MRI Images Showing Periampullary Carcinoma

The patient was symptomatically normal with stable vitals and referred to the surgical oncology department for further management. The surgical oncology team reviewed the patient files and suggested surgery called Whipple pancreaticoduodenectomy.

After proper preop evaluation and consent, he was taken for surgery: Whipple pancreaticoduodenectomy (PJ+HJ+GJ+JJ+FJ) UNDER GA. During the surgery, the surgeons saw growth which was present at the distal CBD region of size 2X2 cm, and a few enlarged periportal and peripancreatic nodes noted of size (Largest 1x1 cm).

They also found dilated CBD with a stent in situ which was placed a few days back before the surgery. They also noted choledochal cyst above in CHD and soft friable pancreas with the dilated pancreatic duct. With liver (?cholestatic liver disease) and no peritoneal or omental deposits.
The surgery went uninterruptedly and the patient was sent to ICU for observation, after one day after surgery the patient was stable with minimal drains and stable vitals.

On the second day of post-surgery, the patient was shifted to the ward, where they noticed increased bloody discharge from abdominal drains of 400ml of the drain, and the patient was noted with hypotension, he was shifted to SICU.

The patient was resuscitated with IV fluid and investigations showed - decreased hemoglobin and increased INR -4.3

The patient was transfused with 2 PRBC and 4 FFP and no obvious bleeding was observed after resuscitation.

On the 4th day of post-surgery in the early mornings, the patient has increased abdominal drains (hemorrhage). The patient was intubated and shifted to OT for immediate abdominal re-exploration.

During reexploration in the OT, they noticed Multiple hematomas entirely at the inferior surface of the liver and retroperitoneum which were evacuated. Hot NS Wash was given with no obvious bleeding source.

They also checked PJ AND GJ AND HJ all anastomoses were intact with no pancreatic leak. The patient shifted to the SICU. All the necessary investigations were done which showed severe metabolic acidosis with severe liver dysfunction with AKI.

The patient was kept on inotropic support and hemodialysis was done. Multiple blood products were given and a party has been explained about guarded poor prognosis.

On the next day, the patient developed ventricular tachycardia with persistent metabolic acidosis with liver dysfunction with AKI On hemodialysis. The patient developed asystole with BP not recordable. CPR has been done, despite all the resuscitative measures the patient could not be revived and declared as dead.

DISCUSSION

According to Ryan, DP et.al stated that people of age more than 65 years are more prone to acquire pancreatic cancer, whereas it is uncommon in people of age 40 years old. The prevalence of pancreatic cancers was more common in men compared to that of women and its incidence with ethnicity factor states that chances of acquiring pancreatic cancer in America are over 1.5 times more often compared to Africans (25). According to Bond-Smith G et.al stated that smoking is the most common cause of pancreatic cancer that increases the risk by approx two folds in chronic smokers and also a known factor is that it takes nearly 20 years to recover from the damage after quitting smoking. People with a heavyweight BMI of more than 35 are more prone to acquire pancreatic cancer. They also noted that people with genetic mutations and familial history have chances of 5–10% for developing pancreatic cancer, along with the inherent components found in close relatives among familial members before 50 years of age. Hereditary pancreatitis promotes higher chances of acquiring pancreatic cancer of 30–40% till 70 years of age in a lifetime and also genes causing this condition were not completely identified. (26). According to Bond-Smith G et al stated that excessive consumption of alcohol is also a major leading factor to promote chronic pancreatitis, which further leads to pancreatic cancer, but there's no prominent research promoting the cause of pancreatic cancer is mainly due to alcohol consumption though it was found in some cases (27).

Christopher L et.al stated that pancreatic cancers were the most complex and one of the most lethal medical conditions that

lead to several deaths that are best treated in the hospital. Even though the survival rate were very low compared to other conditions but still patients can be cured along with individual therapies and preventive methods for invasive carcinoma in the pancreas by improving the therapy and surgical methods to reduce the cystic lesions formed in the pancreas(28)

According to David K et.al, they have analyzed 29 patients who have opted for pancreaticoduodenectomy surgery over 15 years. Among them, 28 patients underwent standard Whipple resection and 1 patient was subjected to extended resection because of the severity of the disease. The patient's average age was 64 years and comorbid conditions were seen in 59% of them in which Jaundice was the most common (in an average 62% of patients nearly acquired till the end of the procedure) and other symptoms were loss of appetite and weight (34%). The most common is a malignant periampullary disease (found in approximately 83% of patients). Among patients diagnosed with adenocarcinoma in the pancreas, 67% of patients were found to be stage I, and 33% patients were found with stage Ill. This procedure commonly lasted for about 5.5 hours and the mean operative blood loss was 1.15 liters. The average time spent by the patient in the hospital was found to be 11 consecutive days and among all those patients 1 patient was not compatible with the procedure and the overall morbidity rate was 28%. Reoperation (IO%) was done to 3 patients, intraabdominal hemorrhage was seen in 2 patients, and delayed gastric emptying was seen in 1 patient. The main surgical complication is gastrojejunostomy site hemorrhage (seen in approx 14%); intraabdominal abscess was found in the localized region (29).

Asensio JA et.al stated that the death rate in patients who had undergone Whipple procedures with trauma was high (approx31% to 36%), After their review study 2 more cases were reported, in which 247 patients were studied which stated 67% of patients survive rate and 64 to 69% of patients were found to experience severe injuries along with a lot of blood loss and abdominal vascular injuries. They conclude that still a lot of research and surgical advancement is needed to overcome these challenges and to reduce the high mortality rate (30).

According to Andersen, HB et.al noted that 8 percent of the mortality rate was found in the standard Whipple's procedure. The average survival period was 1.1 years among patients who underwent this procedure and only 15 percent of patients had a survival rate of 5 years. They also stated that the survival rate without tumor excretion is 25 percent for 5 years, and only 34 percent of patients were found to survive in 5 years having adenocarcinoma of the ampulla of Vater. The average life expectancy of the patients with adenocarcinoma in the ampulla of Vater was found to be 3.3 years which is significantly high when compared with the patients with other conditions. 59 patients were split into two types, patients with para-aortic lymph node cancer in 14 patients and the remaining 45 patients were without para-aortic lymph node cancer. In almost all pancreatic cancer patients, the survival is good for one year and 60% were found to have a regular intake of exocrine pancreatic therapy (31).

References

1. Mazzuri S. *Evolution de la prise en charge palliative du cancer du pancréas avancé en relation avec l'arrivée de nouveaux médicaments: implications sur la survie et considérations médico-économiques* (Doctoral dissertation, University of Geneva).
2. Son JH, Kim J, Lee SH, Hwang JH, Ryu JK, Kim YT, Yoon YB, Jang JY, Kim SW, Cho JY, Yoon YS. The optimal duration of preoperative biliary drainage for periampullary tumors that cause severe obstructive jaundice. *The American Journal of Surgery*. 2013 Jul 1;206(1):40-6.
3. Pancreatic S. Guidelines for the management of patients with pancreatic cancer periampullary and ampullary carcinomas. Gut. 2005 Jun;54(Suppl 5):v1.
4. Talamini G, Bassi C, Falconi M, Sartori N, Salvia R, Rigo L, Castagnini A, Di Francesco V, Frulloni L, Bovo P, Vaona B. Alcohol and smoking as risk factors in chronic pancreatitis and pancreatic cancer. Digestive diseases and sciences. 1999 Jul;44(7):1303-11.
5. Lowenfels AB, Maisonneuve P, Cavallini G, Ammann RW, Lankisch PG, Andersen JR, Dimagno EP, Andren-Sandberg A, Domellof L, International Pancreatitis Study Group. Pancreatitis and the risk of pancreatic cancer. *New England Journal of Medicine*. 1993 May 20;328(20):1433-7.
6. Gullo L, Pezzilli R, Morselli-Labate AM, Italian Pancreatic Cancer Study Group. Diabetes and the risk of pancreatic cancer. *New England Journal of Medicine*. 1994 Jul 14;331(2):81-4.
7. Bansal P, Sonnenberg A. Pancreatitis is a risk factor for pancreatic cancer. Gastroenterology. 1995 Jul 1; 109(1):247-51.
8. Ulrich CD. Pancreatic cancer in hereditary pancreatitis: consensus guidelines for prevention, screening and treatment. Pancreatology. 2001;1(5):416-22.
9. Lynch HT, Fusaro RM. Pancreatic cancer and the familial atypical multiple mole melanoma (FAMMM) syndrome. Pancreas. 1991 Mar 1;6(2):127-31.
10. Giardiello FM, Brensinger JD, Tersmette AC, Goodman SN, Petersen GM, Booker SV, Cruz–Correa M, Offerhaus JA. Very high risk of cancer in familial Peutz–Jeghers syndrome. Gastroenterology. 2000 Dec 1;119(6):1447-53.
11. Offerhaus GJ, Giardiello FM, Krush AJ, Booker SV, Tersmette AC, Kelley NC, Hamilton SR. The risk of upper gastrointestinal cancer in familial adenomatous polyposis. Gastroenterology. 1992 Jun 1;102(6):1980-2.
12. Jagelman DG, DeCosse JJ, Bussey HJ, GROUP TL. Upper gastrointestinal cancer in familial adenomatous polyposis. The Lancet. 1988 May 21;331(8595):1149-51.
13. Spigelman A, Talbot IC, Williams CB, Domizio P, Phillips RK. Upper gastrointestinal cancer in patients with familial adenomatous polyposis. The Lancet. 1989 Sep 30;334(8666):783-5.
14. All N. Guidelines for the management of patients with pancreatic cancer periampullary and ampullary carcinomas. Gut. 2005;54:v1-6.
15. Perez MM, Newcomer AD, Moertel CG, Go VL, Dimagno EP. Assessment of weight loss, food intake, fat metabolism, malabsorption, and treatment of pancreatic insufficiency in pancreatic cancer. Cancer. 1983 Jul 15;52(2):346-52.
16. Petrek JA, Sandberg WA, Bean PK, Bradley 3rd EL. Can survival in pancreatic adenocarcinoma be predicted by primary size or stage?. The American Surgeon. 1985 Jan 1;51(1):42-6.

17. Cotton PB, Lees WR, Vallon AG, Cottone M, Croker JR, Chapman M. Gray-scale ultrasonography and endoscopic pancreatography in pancreatic diagnosis. Radiology. 1980 Feb;134(2):453-9.
18. Taylor KJ, Buchin PJ, Viscomi GN, Rosenfield AT. Ultrasonographic scanning of the pancreas. Prospective study of clinical results. Radiology. 1981 Jan; 138(1):211-3.
19. Karlson BM, Ekbom A, Lindgren PG, Källskog V, Rastad J. Abdominal US for diagnosis of pancreatic tumor: prospective cohort analysis. Radiology. 1999 Oct;213(1):107-11.
20. Steiner E, Stark DD, Hahn PF, Saini S, Simeone JF, Mueller PR, Wittenberg J, Ferrucci JT. Imaging of pancreatic neoplasms: comparison of MR and CT. *American Journal of Roentgenology*. 1989 Mar 1;152(3):487-91.
21. Hollett MD, Jeffrey Jr RB, Nino-Murcia M, Jorgensen MJ, Harris DP. Dual-phase helical CT of the liver: value of arterial phase scans in the detection of small (< or= 1.5 cm) malignant hepatic neoplasms. AJR. *American journal of roentgenology*. 1995 Apr;164(4):879-84.
22. Shepherd HA, Royle G, Ross AP, Diba A, Arthur M, Colin-Jones D. Endoscopic biliary endoprosthesis in the palliation of malignant obstruction of the distal common bile duct: a randomized trial. *Journal of British Surgery*. 1988 Dec;75(12):1166-8.
23. A, Christopher R, Russell G, Hatfield AW, Macrae K, Cotton P, Mason R, Leung JC, Houghton J, Lennon C. Randomised trial of endoscopic versus percutaneous stent insertion in malignant obstructive jaundice. The Lancet. 1987 Jul 11;330(8550):57-62.
24. Russell RCG. Surgical resection for cancer of the pancreas. Baillieres Clin Gastroenterol 1990;4:889. Grade IV
25. Livingston EH, Welton ML, Reher HA. Surgical treatment of pancreatic cancer. *International journal of pancreatology*. 1991 Jun 1;9(1):153-7.
26. Ryan DP, Hong TS, Bardeesy N. Pancreatic adenocarcinoma. New *England Journal of Medicine*. 2014 Sep 11;371(11):1039-49.
27. Bond-Smith G, Banga N, Hammond TM, Imber CJ. Pancreatic adenocarcinoma. Bmj. 2012 May 16;344.
28. Wolfgang CL, Herman JM, Laheru DA, Klein AP, Erdek MA, Fishman EK, Hruban RH. Recent progress in pancreatic cancer. CA: *a cancer journal for clinicians*. 2013 Sep;63(5):318-48.
29. Chew DK, Attiyeh FF. Experience with the Whipple procedure (pancreaticoduodenectomy) in a university-affiliated community hospital. *The American journal of surgery*. 1997 Sep 1;174(3):312-5.
30. Asensio JA, Demetriades D, Hanpeter DE, Gambaro E, Chahwan S. Management of pancreatic injuries. Current problems in surgery. 1999 May 1;36(5):325-419.
31. Andersen, H. B., Effersøe, H., Tjalve, E., & Burcharth, F. (1993). CT for assessment of pancreatic and periampullary cancer. *Acta radiologica*, *34*(6), 569-572.

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