

Management of Pancreatic Carcinoma at Al-Thawra Modern General Hospital Sana'a, Yemen

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ABSTRACT

Objectives: This descriptive study aims to evaluate surgical management of pancreatic cancer at Al-Thawra Modern General Hospital-Sana'a, Yemen and to provide reflection of clinical presentation and risk factors for pancreatic cancer in Yemen.

Methodology:The study was a retrospective descriptive study of forty four patients with pancreatic cancer subjected to surgical treatment at Al-Thawra Modern general hospital, Sana'a, Yemen over a period from July 2009 to January 2012.

Results: Total numbers of patients were 26 males and 18 females with mean age of 62 years. Pancreatic cancers were located in the head of pancreas in 84%, periampullary in 9.1% and 6.8% in the body & tail. Pancreatic cancer was found to be more frequent among smokers 75%. Most patients were presented with obstructive jaundice 81.8%, vague abdominal pain 66% and weight loss 27.3%. Abdominal computer tomography (CT) scanning was done for all cases. Clinical presentation and the accuracy of CT scan in diagnosis and staging of pancreatic cancer are approximately similar to that reported in other countries 81% and 82%.

Curative surgical resections were done for 26 cases while palliative surgeries were performed for 18 irresectable cases. Most of complications and all mortality cases occurred among patients who underwent pancreaticoduodenectomy (Whipple operation). However, we reported a higher mortality rate (17.4%) after Whipple operation at Al-Thawra Hospital-Sana'a than other high volume centers.



Recommendations: This study recommends multidisciplinary approach for managing pancreatic cancers with liberal use of abdominal CT scan for diagnosis and staging of pancreatic cancers in suspected cases. Meticulous surgical techniques are advised in improving the surgical management of pancreatic cancer with minimal complications. Further extended studies to evaluate the different factors affecting surgery for pancreatic cancers and to provide basis for improvement in the surgical management of pancreatic cancers.

Key words: Cancer pancreas, surgical treatment.

INTRODUCTION

Pancreatic adenocarcinoma (PC) comprises 90% of exocrine pancreatic neoplasms. Cancer of the pancreas is one of the commonest gastrointestinal tumors; it is the fourth most common cause of all cancer deaths in both males and females [1]. Pancreatic cancer may arise throughout the gland but is more common in the head of the pancreas. The management issue facing the surgeon when dealing with cancer of the head differs from those associated with cancer of the body and tail of the gland. [2] The most critical deficit in the ability to treat pancreatic cancer effectively is the lack of tools for early diagnosis and most of cases represented in advanced stage with wide local invasion or metastases. As with detection, the staging of pancreatic cancer is difficult: the use of all available laboratory and radiological diagnostic test cannot detect irresectability in 20 % of pancreatic cancer. [3] Surgery the only hope for cure, but in most cases the extent of the disease at presentation is such that resection is not possible. Surgery has a role in palliative management of irresectable cancer. In the past three decades some aspects of surgical treatment have improved dramatically. Surgical mortality rates have fallen from 15–20% to 1–2% in high volume centers [4], and post operative pancreatic fistula rates, have also fallen recently [5]. It is clear the gap between the incidence of the disease and the mortality rate is widening annually [1]. In many studies risk factors associated with pancreatic cancer have been reported or estimated. The only risk factors consistently reported are age and cigarette smoking are the risk factors consistently reported [6]. Pancreatic cancer is more common in men and the elderly with most patients being >60 years old [7][8][9]. In addition, the risk of developing pancreatic cancer is found to be two to three times higher if a parent or sibling had the disease. Several genetic syndromes and medical conditions are associated with an increased risk of pancreatic cancer. Pancreatic carcinoma results from the accumulation of acquired mutations [10] [11] [12]. About two thirds of pancreatic adenocarcinomas arise within the head or uncinate process of the pancreas; 25% are in the body and the tail, with the remaining tumors demonstrating diffuse involvement of the gland. Tumors in the pancreatic body and tail are generally larger at the time of diagnosis, and therefore, less commonly resectable [3]. Unfortunately, the majority of patients are not diagnosed until weight loss has occurred—a sign of advanced disease [3]. Most patients do experience pain as part of the symptom complex of pancreatic cancer, and usually perceived in the epigastrium but can occur in any part of the abdomen [2][3]. Other presentations include steatorrhea or diarrhea, weight loss, or a combination of these symptoms. Signs can be develop new diabetes mellitus or malabsorption [2]. Weight loss is evident and the sclera & skin are icteric; a distended gallbladder is palpable in about one-

fourth of patients. In advanced cases, signs of metastatic disease (e.g., hepatomegaly and ascites) may be detected [3]. Jaundice, direct hyperbilirubinemia, prolonged PT and elevated alkaline phosphatase are expected. In a patient with appropriate clinical and/or imaging indications of pancreatic cancer, a tissue diagnosis before performing a pancreaticoduodenectomy is not essential. Although percutaneous CT-guided biopsy is usually safe, complications such as hemorrhage, pancreatitis, fistula, abscess, or even death can occur. Diagnostic laparoscopy with the use of US is reported to improve the accuracy of predicting resect ability to about 98% [15][16]. ERCP allows identification and biopsy of ampullary and duodenal tumors that may be blocking the bile duct and producing jaundice. In general, there are three clinical problems in advanced pancreatic cancer that require palliation: pain, jaundice, and duodenal obstruction [2, 13]. Duodenal obstruction is usually a late event in pancreatic cancer and occurs in only about 20% of patients [17]. The operation used is pancreaticoduodenectomy or Whipple procedure [2]. Median survival after pancreaticoduodenectomy is about 22 months. Even long-term (5-year) survivors often eventually die due to pancreatic cancer recurrence [13].

Objective: Assessment of surgical management of pancreatic cancer at Al-Thawra Modern General Hospital - Sana'a, Yemen to identify the factors affecting prognosis, morbidity and mortality of pancreatic cancer.

PATIENTS AND METHODS

The study is retrospective descriptive study. The study reviewed the hospital records for all patients who were diagnosed and managed surgically as pancreatic cancers at the surgical department in Al-Thawra Modern General Hospital –Sana'a, Yemen, during a period of two and half years (July 2009 to January 2012). Patients of all ages were included as they admitted to surgical ward at Al-Thawra Hospital and subjected to surgical procedure for curative or palliative management of pancreatic cancer. Data were obtained retrospectively from the medical records and files of pancreatic cancer patients. All cases were evaluated by clinical history and examination. Data included 1) general examination findings such as general condition, mental status, body built jaundice, lower limb edema, presence of metastatic lesions and 2) abdominal examination findings ;distension, scar, mass, tenderness , and ascites. Laboratory results and the finding of diagnostic imaging were recorded to identify operability and resect ability. Findings on sonographic examinations and CT scanning of abdomen regarding the exact location, size and extension of the cancer, invasion to other organs, status of regional lymph node, and presence of liver or distant metastases were recorded. The study compared the patients who were taken for curative surgery with their initially selected for palliative surgeries were recorded. Causes of subsequent change in the initial diagnosis or management plan. The type and indications of surgery were also recorded. The types and combinations of surgical procedures, operative findings and procedures, and intraoperative findings of metastasis were also tracked. Patients were monitored for postoperative complications. The study recorded the type and effectiveness of management for these complications. In addition, indications and details of reoperation (if present) were recorded. Outcome was measured by calculating the overall mortality, morbidity, hospital stay and status at discharge. Length of stay was defined as the interval between admission and hospital discharge.

RESULT

A total of forty-four patients were included in this study. They were diagnosed and underwent surgical management for pancreatic cancers at the surgical department of Al-Thawra Modern General Hospital – Sana'a, Yemen. They were 26 (59.1%) males and 18 (40.9%) females (figure.7). The mean age at the study's patients was 62 ± 7 years. Age group above 60 years accounts 70% of all patients. Patients with pancreatic cancer were mostly above 60 yrs old Risk factors: Smoking & qat chewing the most frequent risk factor among these patients while no patient report a history of alcohol intake.

Table 1: Frequent of factors associated with pancreatic cancer.

Risk factor	Frequency	percent
Age > 60 yrs old	31	70.4%
Smoking	33	75 %
Qat chewing	35	79.5%
Diabetes	4	9.1%
Fat diet	5	2.2 %

Most of patients presented with obstructive jaundice 81.8%, vague abdominal pain 66% and itching presented in 52.2% of patients. As shown in Table 2.

Table 2: Clinical presentation among patients with pancreatic cancer.

Symptoms	Percentage
Jaundice	81.8
Pain	66
Itching	52.2
Anorexia	36.4
Weight loss	27.3
Vomiting	20.5

In all patients, locations of the pancreatic cancer were head of pancreas in 37(84%), periampullary in 4(9.1%) and body & tail in 3 (6.8%) patients Only in one patient, preoperative biopsy and biliary stenting was performed by ERCP. According to finding of CT scan, 30 cases were resect able cancers that are shifted for curative resection and 14cases irresectable cancers that underwent palliative surgeries. Forty-four patients underwent surgical intervention with average operating time 3.13 hours. The thirty patients with resect able tumors on CT, exploration revealed irresectability in 4 (13.3%). Fourteen patients were subjected to palliative billiary decompression. Most of biliary decompressions were performed by choledochojejunostomy. In addition to choledochojejunostomy, gastrojejunostomy was performed for two patients who presented with duodenal obstruction. Cholecystoduodenostomy was performed for 4 cases according to surgeon preference. The overall postoperative morbidity rate was 61.4% (27/44). No anastomotic leak was recorded for bypass procedures, while 4/23 of (17.4%) Whipple procedures had have pancreatic anastomotic leak and subsequent pancreatic fistulas. One fistula produced

severe nutritional & electrolyte disturbances and expired, while conservative treatment successes in three cases. Mean hospital stay was 14.3 days.

Post-operative mortality rate was 9.1% (4/44). All deaths (4) 17,4% occurred among the 23 patients who underwent Whipple procedure. Two patient's expired due to intraabdomial sepsis and ARDS. One patient with pancreatic fistula complicated by severe nutritional & electrolyte disturbances, and the other patient died suddenly with no obvious cause.

Table 3: Post-operative complications among patient with pancreatic cancer.

Complication	Frequency	%
Fever	20	45.4
Wound infection	9	20.5
Wound dehiscence	1	2.27
Prolonged ileus	4	9.1
Pancreatic anastomotic leak & fistula	4	9.1
Intra-abdominal bleeding	1	2.27
Abdominal abscess	1	2.27
Deep venous thrombosis DVT	1	2.27
Atelectasis	9	20.5
Pneumonia	8	18.1
Septic shock	2	4.54
ARDS	2	4.54
Acute renal failure	4	9.1
Multi – organ failure	3	6.8

DISCUSSION

This study included 44 patients with pancreatic cancer who were admitted & subjected to surgical management at Al-Thawra modern general hospital – Sana'a, Yemen. The mean age was found to be 62 years of age that 10 years younger than the median age for pancreatic cancer in the Western countries [3]. This figure may be attributed to the fact that most of our patients had no documented or accurate determination of age. The high frequency of male among study patients is consistent with that figure reported by Sener et al [18] and Singh et al [17] who reported that male represented 55% and 62% of pancreatic cancers respectively. In this study, only 6.8% of pancreatic cancers were located in the body and tail of the pancreas; however Sener et al reported higher rate 22% [18]. Majority of Yemeni community chew qat regularly so it cannot be considered as risk factor for pancreatic cancer without case-control study. Smoking was found to be associated with 75 % of pancreatic cancers, that's in agreement with many studies [6],[7].As with detection, the staging of pancreatic cancer is difficult: the use of all available laboratory and radiological diagnostic test cannot detect irresectability in 20 % of pancreatic cancer [3]. In this study, the most common symptom was progressive jaundice in more than 80% of patients. Jaundice doesn't indicate early stages of pancreatic cancer as presence of jaundice depend on cancer location within the pancreas.

Vague abdominal pain was expressed by 66% of the patients. Two third of pain were epigastric and one third, in the right hypochondrium. This is similar to a study by Anderson

et al [6] that reported pain as a common symptom of pancreatic cancer and advised to consider it as a potential cause of abdominal pain. In this study, only abdominal CT scan was used in the diagnosis of disease in all our patients while ERCP with stenting and biopsy was used in one case only. Bipat et al [14] reported 81% sensitivity and 82% specificity of CT imaging for determining pancreatic cancer resectability. In this study, the sensitivity of CT imaging for determining resectability was 87.7%. However; this result may confirm the accuracy of CT in staging of pancreatic cancer and may reflect good performance of the radiologists of AMGH. Surgery offers the only hope for cure, but in 80-90 % of cases, the extent of the disease make the resection is impossible [2, 3, 13]. Curative resections were performed for 26 cases; 23 Whipple operations for cancers located at the head and 3 distal pancreatectomy for cancers in the body and tail of pancreas. More than half cases were resectable while resectability was not exceeding 20% in most of previous studies [1, 13, 14]. This can be attributed to including only surgically treated patients in this study. Most of palliative biliary decompressions were done by choledochojejunostomy which is the procedure of choice for this purpose by many authors [3, 13]. Gastrojejunostomy & choledochojejunostomy were indicated for two cases with clinical and operative evidences of duodenal obstruction. Mortality rates after pancreaticoduodenectomy were 15–25% in the 1970s, but recently it had fallen to less than 5% in high volume centers [2, 4]. Postoperative morbidity is high, but the incidence of pancreatic fistula has fallen in some centers [5, 13]. Quality of life following pancreaticoduodenectomy is poor for 3–6 months but then returns to normal in most patients unless there is recurrence [13]. In this study, the rate of pancreatic fistula after Whipple operation were 17.4%, that is similar with reported in many studies ranging 10-20% [2, 5, 13]. In this study, the type of operation was the most important factor affecting mortality and morbidity as all mortalities and most of complications occurred post pancreaticoduodenectomy (Whipple operation).

CONCLUSION

Pancreatic cancer is one of the most common and lethal human cancers; it has the worst prognosis of all malignancies; the overall 5-year survival rate is only 5%. Lack of tools for early diagnosis, difficult staging, advanced stage on presentation, unresponsiveness to chemoradiotherapy and the high morbidity & mortality associated with curative surgery make pancreatic cancer one of the most challenging issue for surgeons. In Yemeni community, pancreatic cancer is more common in elderly, men and smokers. Most patients were presented with obstructive jaundice, vague abdominal pain and weight loss. Abdominal CT scan is done for all cases. Clinical presentation and the accuracy of CT scan in diagnosis and staging of pancreatic cancer are approximately similar to that reported in other countries. We reported a higher mortality rate after Whipple operation at Al-Thawra Hospital-Sana'a, Yemen than other high volume center. Factors affecting this figure need further extended studies for providing more useful results.

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طريقة تشخيص وعلاج مرضى سرطان البنكرياس في مستشفى الثورة العام- صنعاء – اليمن

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ملخص

الهدف من الدراسة هي مراجعة طريقة تشخيص وعلاج المرضى الذين يعانون من سرطان البنكرياس وأجريت الدراسة في قسم الجراحة بمستشفى الثورة العام بصنعاء خلال الفترة من يوليو 2009م وحتى يناير 2012م . وكان عدد المرضى أربعة وأربعون (26 من الذكور و 18 من الإناث) وكان معظم المرضى في عمر 62 سنة. جميعهم يعانون من سرطان البنكرياس وقد وجدت الدراسة بأن 84% من المرضى يعانون من سرطان رأس البنكرياس.

معظم المرضى من المدخنين وغالبيتهم كانوا يعانون من اليرقان الإنسدادي. وقد تم عمل جميع الفحوصات للمرضى بما فيها الإشعة المقطعية وخضع 26% مريض لعملية إستئصال كامل للورم بينما 18 حالة أجريت لها عملية إزالة الإنسداد دون التمكن من إستئصال الورم بسبب الإنتشار وكانت نسبة المضاعفات بعد العمليات في حدود (17,4%).