SHORT TERM OUTCOME OF PATIENTS WITH HEPATOPANCREATOBILIARY MALIGNANCIES TREATED IN A MULTIDISCIPLINARY HEPATOBIARY UNIT IN A TERTIARY REFERRAL CENTRE

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Abstract:
Purpose: Specialization in hepatopancreatobiliary (HPB) surgery has evolved over the last few decades based on better understanding of the biology and the behavior of the diseases. In this review from a specialized HPB service we aim to provide an overview of the HPB oncological cases managed in a tertiary care cancer hospital.

Methods: All cases of hepatopancreatobiliary malignancies treated in our hospital between October 2014 and September 2015 were included in the study. Clinical findings, operative details and short term postoperative outcomes were assessed from a prospectively managed database.

Results: A total of 65 oncological procedures were performed over a period of one year. These included 23 hepatic resections, 27 pancreaticoduodenectomies, 5 radical surgeries for gallbladder cancer, 2 distal pancreatectomy and 8 nephrectomies with exploration of the inferior vena cava (IVC). One patient successfully underwent Associated Liver Partition with Portal vein ligation and staged hepatectomy (ALPPS Procedure), which to our knowledge was the first ALPPS procedure carried out in Pakistan.

Conclusion: The short-term experience of patients managed in specialized HPB unit has shown good outcomes. There is need for establishing HPB units in most tertiary care hospitals in the country.

Key Words: Hepatopancreatobiliary (HPB) surgery, hepatic resections, pancreaticoduodenectomy, ALPPS Procedure

Introduction:
Specialization in hepatopancreatobiliary (HPB) surgery has evolved over the last few decades based on better understanding of the biology and the behavior of the diseases, improvements in diagnostic modalities, development of a highly specialized skills set in the operating room and evolution of multidisciplinary care of diseases, especially cancers. In addition, the outcomes of complex operations are strongly linked to the institution as well as the surgeon’s operative volumes. Mortality and operative outcomes for HPB cancers have in particular improved dramatically as shown by published experience from specialized centers all over the world.

The age standardized incidences for cancers of the liver, gallbladder and pancreas are 3.6, 1.5 and 0.5 per 100000 population. This reflects a significant burden of cancer in Pakistani population with tumours that can be potentially curable with timely availability of expertise in their complex surgical and oncological management. In this review from a specialized HPB service we aim to provide an overview of the HPB oncological cases managed in a tertiary care cancer hospital.

Methods:
All cases of hepatopancreatobiliary malignancies treated in our hospital between October 2014 and September 2015 were included in the study. The HPB unit also provided assistance to the urological and pediatric surgeons with resection of complex renal tumours especially when there was inferior vena cava, liver or pancreatic involvement. Patient’s demographics, clinical findings, operative details and short term postoperative outcomes were assessed from a prospectively managed database.
Results:

A total of 65 oncological procedures were performed over a period of one year. These included 23 hepatic resections, 27 pancreaticoduodenectomies, 5 radical surgeries for gallbladder cancer, 2 distal pancreatectomy and 8 nephrectomies with exploration of the inferior vena cava (IVC). General emergency procedures and staging laparoscopies were excluded from analysis.

Liver resections were performed in 23 patients. The types of liver tumours treated are described in figure 1. Anatomic Segmental resections were performed in 10 patients while 8 patients underwent sectionectomies. Three patients underwent right hemic-pancreatectomy, while extended right hemic-pancreatectomy was performed in one patient. One patient successfully underwent Associated Liver Partition with Portal vein ligation and Staged hepatectomy (ALPPS Procedure), which to our knowledge was the first ALPPS procedure carried out in Pakistan. Median age was 52 years (range 1-71 years). There were 15 Male and 8 female patients in this group. Median intensive care unit (ICU) stay was 34 hrs. Median hospital stay was 8 days (range 4-9 days). Postoperatively two patients had perihepatic haematoma, one had wound infection and one had myocardial infarction. There was no mortality.

Twenty seven patients successfully underwent pancreaticoduodenectomy and 2 patients underwent distal pancreatectomy. In six patients, tumours were found inoperable on trial of dissection. In one patient, portal vein resection and reconstruction was performed. Two patients had previously undergone palliative bypass surgery in outside tertiary care hospitals for pancreatic head cancer. Both of these patients underwent successful pancreaticoduodenectomy in our hospital.

In the pancreaticoduodenectomy group, median age was 51 years with 17 male and 10 female patients. Median tumor size was 28mm (range 15 to 95mm). The most common presenting symptom was jaundice (n=22, 81%) followed by pain (n=5, 18.5%) and weight loss (n=4, 14.8%). Periampullary tumours constituted 48.4% (n=13), followed by carcinoma of head of pancreas 32.3% (n=9) and duodenal carcinoma 19.3% (n=5). On histopathology there were 24 adenocarcinomas, 2 neuroendocrine tumours and one gastrointestinal stromal tumour (GIST). With the exception of one patient, all patients had R0 resection. One patient had R1 resection with positive resection margin at the uncinate process. Aberrant hepatic vascular anatomy was found in 40% of the patients undergoing pancreaticoduodenectomy. Postoperative pancreatic fistula developed in 18% (n=5) of patients. These were International Study Group in Pancreatic Surgery (ISGPS) grade A except for one patient who required percutaneous drainage. Delayed gastric emptying was seen in 18% (n=x) of patients. One patient had upper gastrointestinal haemorrhage managed endoscopically and one developed intra-abdominal abscess that required image guided percutaneous drainage. One patient died on postoperative day 7 due to cardiac event.

The HPB service also provided complex vascular cover to adult and pediatric Urology service in the hospital. This allowed successful surgery for 8 patients with tumors of kidneys or adrenal glands requiring management of the IVC. These included 3 cases of renal cell cancer, 3 Wilms’s tumour, 1 adrenal tumour and 1 clear cell sarcoma of the kidney. IVC thrombectomy with lateral repair was performed in 6 patients and one patient had segmental resection of IVC and anastomosis. One patient required en bloc resection of the right adrenal and the right kidney in conjunction with a right hemihepatectomy (Figure 2). There was no mortality in this group.

Discussion:

We report the one full year outcome of managing patient with HPB malignancies in a newly established hepatopancreatobiliary service in a tertiary care cancer hospital. A large number of complex resections were performed with morbidity and mortality comparable to published literature. Of note is successful surgery of locally advanced cancers which were deemed inoperable and had palliative surgery in other centers. In addition, patients with locally advanced tumours who were deemed unsuitable for surgical resection and denied surgery in other centers received successful surgical management for liver, pancreatic and renal tumours with multivisceral involvement.

Pancreatic and liver resections for tumours have been associated with high morbidity and mortality. However with a multidisciplinary approach, advances in surgical techniques, better understanding of the disease process, oncological management and postoperative care, one can achieve excellent outcomes after the complex resections for HPB tumours. Our study supports the view that the patients with HPB malignancies treated in specialized HPB units are likely to have a better outcome.
The HPB service at Shaukat Khanum Memorial Cancer Hospital and Research Centre was established in order to streamline the care of patients with hepatopancreatobiliary malignancies. All patients are staged with 64-Slice CT scan with additional MRI and endoscopic ultrasound if required as per discussion in the multidisciplinary team meeting comprising of surgeons, gastroenterologists, radiologists and oncologists. The operating rooms have state-of-the art equipment including Energy devices and Cavitron Ultrasonic Suction Aspirator (CUSA) device. Postoperative care for these patients includes a well-equipped Intensive Care Unit as well as a Surgical Extended Care Unit for patients stepping down from ICU.

There is a country wide need to develop specialized hepatopancreatobiliary units in order to achieve good results from these complex procedures. This may be achieved by obtaining expertise and training in hepatopancreatobiliary surgery as well as developing a multidisciplinary team management plan for these patients. In addition fellowship training programs in HPB surgery should be developed to increase the number of trained HPB professionals.

Conclusion:

Hepatopancreatobiliary malignancies pose many challenges to treatment that requires a multidisciplinary approach in addition to advanced diagnostic, therapeutic and technical expertise. The short-term experience of patients managed in specialized HPB unit has shown good outcomes. There is need for establishing HPB units in most tertiary care hospitals in the country.

Figure 1: Indications for liver resection in our cohort of patients (Colorectal liver metastasis CRLM, Hepatocellular carcinoma HCC, Non Colorectal liver metastasis Non CRLM, Gallbladder carcinoma GB Ca)

Figure 2: En-block resection of right lobe of liver with right adrenal tumour and kidney
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