

Hepatobiliary Pancreatic Surgery Division

Introduction

The Hepatobiliary and Pancreatic (HBP) Surgery Division deals almost exclusively with malignant neoplasms arising from the liver, biliary duct system, and pancreas. This includes tumor which are potentially malignant such as cystadenomas of the liver or endocrine tumors, mucinous cystic tumors of the pancreas. We have also managed patients with secondary hepatic neoplasms from any primary site. In this disease, complete cure by surgical treatment can be achieved in only select patients. Thus, we treat patients in close cooperation with medical oncologists and radiologists experienced in this area.

Routine Activities

The HBP Surgery Division has four attending surgeons. Our division also includes one chief resident, three or four residents, and several trainees from Japan and overseas.

Our outpatient service is provided during the weekdays, and about 300 new patients are accepted annually. Sub-teams are composed of two attending physicians and a resident conduct the hospital care. A chief resident supervises residents and trainees and manages the care of all the hospital HBP patients. The surgical team makes daily inpatient rounds, as well as weekly inpatient rounds made jointly with medical oncologists. On average, 6 major operations are performed every week.

Two weekly conferences are held: (1) the HBP case conference with surgeons and medical oncologist, and (2) an imaging diagnostic case conference in co-operation with radiologists and medical oncologists. Two biweekly are held: (1) a surgico-anesthesiologic conference with the anesthesiology division, and (2) surgico-pathologic conferences are held with pathologists. The latest papers dealing with current issues in biliary and pancreatic diseases are discussed at the "Journal Club of Pancreatology", held biweekly.

Hepatopancreatic biliary malignant diseases are treated according to the following treatment strategy:

Hepatocellular carcinoma (HCC): Aggressive surgical intervention is plagued by compromised hepatic functional reserve due to chronic liver disease,

frequently associated with these tumors. Non-cirrhotic or cirrhotic patients with Child-Pugh grade A or B liver function without distant metastases are candidates for local therapy, including surgical resection and percutaneous ethanol injection (PEI) or radiofrequency ablation therapy (RFA). The indication for resection includes HCCs of TNM stages I, II, IIIA, IIIB, and part of IVA, if liver function permits. The remaining patients with local disease but without sufficient hepatic functional reserve for surgery undergo PEI or RFA, and those with advanced widespread diseases are treated by trans-arterial chemoembolization (TAE).

Bile duct carcinoma, gall bladder carcinoma, and pancreas carcinoma: A patient with a locally resectable tumor who has no distant metastases or peritoneal dissemination is a candidate for surgical resection. Chemoradiation therapy is a treatment option for unresectable cancer disease from pre- or intraoperative findings. Patients who have undergone curatively resected pancreas duct cells carcinoma, will be enrolled in the postoperative adjuvant chemotherapy trial. Preoperative biliary decompression is performed when a patient has obstructive jaundice due to biliary or pancreatic tumors. Trans-ileocolic portal venous branch embolization, or percutaneous transhepatic portal vein embolization is performed to enhance the safety of surgery for patients with diseases requiring major hepatic resection (more than a right lobectomy) to achieve compensated hypertrophy of the future remaining liver. This procedure is used in patients with hilar cholangiocarcinomas, gall bladder carcinomas, HCCs and metastatic liver tumors.

Research Activities

Our division is involved in the following studies and reviews.

Combined hepatocellular and cholangiocarcinoma (cHCC-CC) is an uncommon subtype of primary liver cancer, the clinicopathological features of which have rarely been reported in detail. The aim of this study was to clarify the characteristics of cHCC-CC in comparison with hepatocellular carcinoma (HCC) and cholangiocarcinoma (CC). In most cases, cHCC-CC seems to be a variant of ordinary HCC with

cholangiocellular features, rather than a true intermediate disease entity between HCC and CC. (Yano Y, et al.).

The presence of hepatic metastasis in pancreatic cancer has generally been considered to be a contraindication for surgery. However, we have shown that hepatic metastasis may be a strong predictor of poor survival, but not a determinant of noncurability, and surgical resection may still be an option for highly selected patients with pancreatic cancer complicated with hepatic metastasis (Shimada K et al).

Bile duct cancer is known to be a slow-growing tumor, but anatomic location and longitudinal extent along the bile duct have made curative resection difficult, resulting in low respectability and poor long-term survival. We are taking part in multi-institutional study related to the establishment of the preoperative and intraoperative diagnosis of bile duct tumor extension. Complete clearance of the tumor with an adequate surgical margin is required for bile duct cancer to improve long-term survival.

Pancreatic duct occlusion has been used as another method dealing with exocrine secretion in pancreatic surgery. This method avoids the fatal complication associated with pancreatic-enteric anastomosis due to causing atrophy of the occluded pancreatic remnant. We have applied this technique after extended pancreaticoduodenectomy for advanced pancreaticobiliary malignancy.

Clinical Trials

Two clinical trials are ongoing. One is a multi-institutional prospective randomized trial designed to evaluate postoperative adjuvant chemotherapy for the pancreatic ductal adenocarcinoma. Another is a randomized control clinical trial of hepatectomy with intermittent inflow clamping (15 versus 30 minutes clamping). This prospective trial was designed based on the hypothesis that 30 minutes clamping is as safe as 15 minutes clamping in hepatectomy for patients with normal liver function.

● K.Shimada ●

Number of Patients		
	2003	2002
Number of Patients	305	283
Primary liver neoplasm		
Hepatocellular carcinoma	67	95
Cholangiocellular carcinoma	17	8
Miscellaneous	3	2
Secondary liver neoplasms		
Colorectal	69	59
Miscellaneous	9	10
Pancreas neoplasm		
Duct cell adenocarcinoma	55	46
Others	37	26
(including ca of duodenum, ampulla, MCT)		
Bile duct neoplasms		
Bile duct carcinoma (Hilar or lower)	38	25
Gallbladder carcinoma	10	12

Major surgical procedures in 2003	
All hepatic resection	175
Hepatectomy	145
Major hepatectomy and bile duct reconctrctinon	26
Extended cholecystectomy	4
All pancreatic resection	89
PPPD, whipple	69
Distal pancreatectomy	19
Total pancreatectomy	1
Major hepatectomy and pancreaticoduodenectomy	4
Total	268

Hepatocellular carcinoma						
Survival Rate According to Tumor Stage						
Stage	No.ofpts	1-yr	2-yr	3-yr	4-yr	5-yr
I	68	92.4	90.8	84	75.4	73.20%
II	360	94.9	86	80.7	73.6	65.80%
III	299	87.1	73.2	60.7	48.6	37.90%
IV	109	64.3	41.3	34.1	24.8	20.10%
Total	836	88	76.1	67.9	58.6	50.70%

Results for the patients operated in 1980/1-2002/3

Pancreatic duct cell adenocarcinoma						
Survival Rate According to Tumor Stage						
Stage	No.ofpts	1-yr	2-yr	3-yr	4-yr	5-yr
I	2	100	100	66.7	-	-
II	6	83.3	88.3	88.3	88.3	55.60%
III	55	79.4	62.2	42.6	33.5	33.50%
IV	141	52.8	16.8	11.2	11.2	8.70%
Total	206	61.6	32.8	23.1	19.2	17.10%

Results for the patients operated in 1990/1-2002/12.