Introduction

Hilar cholangiocarcinoma (HCCA) refers to the malignant tumor occurring at left and right hepatic ducts, common hepatic duct and their convergence part. Its special anatomical position, adjoining relation and biological characteristics of infiltrating and metastasizing towards vessels, nerves and other surrounding tissues, its operative resection rate and long-term survival rate are extremely low so that HCCA diagnosis and treatment have become one of the difficult problems in the surgery department. This paper carried out a retrospective analysis of clinical data of 18 HCCA patients accepting operative treatment in our department from January, 2012 to December, 2016 to improve the recognition of HCCA diagnosis and treatment.

Clinical Data

General Data

18 HCCA patients accepting operative treatment in hepatopancreatobiliary surgery department in the Second Hospital of Jilin University from January, 2012 to December, 2016 were selected, where there were 6 males and 12 females with average age being 41-73 years old, and median age was 63.2 years old; 15 cases’ initial symptom was painless jaundice (83.3%) accompanied by skin itch; 1 case’s initial symptom was upper quadrant swelling pain (5.5%), 2 cases had fever (11.1%), and no abdominal mass was touched in all physical examinations; preoperative average TBil was 257.3μmol/L and average direct bilirubin was 174.2μmol/L.

Tumor Marker Examination

18 cases in the group all accepted CA19-9 examination, where mean CA19-9 value of 14 patients with rising assay values was 548.7 U/mL.

Imageological Examination

Over two imageological examination methods were combined before the operation for the 18 patients, preliminary CA19-9 examination was conducted through color Doppler ultrasound and further examination was implemented using CT or MRCP, and correct diagnosis rate was 100% compared with postoperative pathology.
Clinical and Pathological Typing

through imageological data analysis, intraoperative judgment and postoperative specimen examination and in accordance with Bismuth-Corlette typing standard, 1 case among 18 ones belonged to I type, 9 ones II type, 2 ones IIIa type, 3 ones IIIb type and 3 ones IV type; pathological typing: 3 cases belonged to moderately-highly differentiated adenocarcinoma, 7 ones moderately differentiated adenocarcinoma, 3 ones moderately-poorly differentiated adenocarcinoma and 5 ones poorly differentiated adenocarcinoma.

Operation Method

Basic operation methods were tumor excision, hilar vessel skeletonization, high-level bile duct (after taking shape) empty intestine Roux-Y anastomosis, and average operation time was 289.5min. Among the 18 patients, 10 ones accepted pure extrahepatic duct skeletonized excision, 1 accepted peripheral hepatic portal excision, 7 accepted combined hepatic lobe excision (5 accepted combined left hepatic lobe and caudate lobe excision and 1 accepted combined right hepatic lobe and caudate lobe excision), and one accepted combined pancreas head and duodenum excision.

Results

Postoperative Complications

3 cases were concurrent with infection of incisional wounds after the operation, 1 case suffered bile leakage with abdominal infection and 1 case suffered intra-abdominal hemorrhage. Incidence rate of complications was 27.8% and no death occurred in perioperative period.

Operation Effect Among

18 patients, 17 patients died of postoperative tumor relapse and their survival time was 8-29 months; 1 patient was still alive without relapse in recent re-examination, its Bismuth typing was II type, operation method was combined left hepatic lobe and caudate lobe excision, and follow-up visit was conducted for 26 months after the operation; median survival time of all patients was 21 months.

Discussion

Diagnosis of HCCA

HCCA diagnosis mainly relies on clinical manifestation, laboratory examination and imageological examination. However, in view of limitations of each examination method, combining multiple examination methods is of great importance to clinical application[1]. Clinical manifestations of HCCA are aggravated painless jaundice, right upper quadrant lump and infection of biliary tract. Patients with painless jaundice occupied 83.3% in this group, those with infection of biliary tract occupied 11.1% and those with abdominal pain occupied 5.5%, no patients had the main manifestation of right upper quadrant lump, and thus it could be seen that painless jaundice was the main symptom of HCCA. HCCA has hidden onset and slow growth. There are usually no typical clinical manifestations when the bile duct is not obstructed.
at the early stage. Laboratory examination centers on liver functions, coagulation functional change and rising tumor marker, where tumor marker CA19-9 examination has a great value. Average preoperative TBil of the patients was 257.3μmol/L, mainly being direct bilirubin; CA19-9 rising rate was 77.8% and average level was 548.7 U/mL. For CA19-9 examination for suspicious patients contributes to early diagnosis of HCCA. Ultrasound, CT and MRI examinations can find hilar space-occupying lesion and definite tumor involvement scope and intrahepatic and extrahepatic bile duct dilation. Conventional ultrasound examination mainly finds intrahepatic and extrahepatic bile duct dilation and the lump in hepatic hilar region. Ultrasound examination of the patients in this group found that proportion of hepatic hilar occupying was 100%, but judgment of its invading scope still had a certain limitation. CT and MRI had high tumor detection rates and had great reference values for selection of therapeutic schedule, mainly manifested by hepatic hilar lump with postponed enhancement, bile duct with intrahepatic and extrahepatic dilation, swelling lymph nodes in hepatic hilar region and extrahepatic metastatic focus. In addition, the relation between the focus and neighboring vessel, variation of hepatic artery and portal vein as well as their involvement situation and volumes of intrahepatic segments could be accurately evaluated through CT or MRI images. The patients were found with hepatic hilar occupying through CT or MRI and MRCP examinations. 3D CT and 3D MRI are of great clinical values to selection of operation method [2]. PET-CT is of important value to finding of distant metastasis.

Surgical treatment of HCCA

Therapeutic principles of HCCA mainly include radical excision operative treatment, hepatic transplantation therapy and palliative therapy, where palliative therapeutic method includes palliative excision, bile duct drainage (PTCD, ERBD, etc.), chemotherapy and radiotherapy, etc. Radical operative excision is the preferred therapeutic measure. Even though postoperative relapse is easy, radical excision therapy and even palliative excision still can reach effects of lengthening life and improving life quality, while the therapeutic effect of expanding operative excision and lymph node dissection scope is still uncertain[3]. It’s necessary to conduct a series of surgical evaluations before operative treatment, expecting to decide appropriate surgical therapeutic scheme according to individual patient’s situation. These surgical evaluations include correct understanding of biological behaviors of the tumor, typing and staging of HCCA, evaluation of tumor invasion scope, preoperative evaluation and formulation of operation scheme. Indications of radical excision operation are: the diagnosis is basically definite, bile duct, vessel and live conditions are favorable, general conditions and important organ functions are good, the operator has rich experience and there are corresponding medical conditions. Basic requirements of HCCA radical excision (R0 excision): upper and lower incisal edges of bile duct reach pathologically negative; involved liver parenchyma and blood vessel are excised together; skeletonized lymph dissection in hepatic portal and peripheral pancreas regions is realized; there is no macroscopic or palpable residual tumor focus in the whole operation field. Operation method of radical excision includes pure extrahepatic bile duct excision, regional lymphatic tissue and nerve plexus cleaning up, combined caudate lobe excision, combined regular hepatectomy, the operation of retaining functional liver parenchyma, blood vessel excision and reconstruction and bile duct and empty intestine anastomosis. Extrahepatic bile duct tumor excision, regional lymphatic tissue and nerve plexus cleaning up and bile duct and empty intestine anastomosis are non-disputable operative methods, and combined caudate lobe excision and blood vessel excision and
reconstruction have been more and more extensively recognized. Furusawa Net al. divided HCCA patients accepting operation treatment into 2 groups (group 1, 1990-2000, group 2, 2001-2012), and through the calculation, it’s found that death rate, incidence rate of main complications and intraoperative bleeding quantity in group 2 were obviously reduced compared with group 1 (reducing from 1.2%, 34% and 1,020ml to 0%, 24% and 745ml respectively), R0 excision rate increased from 70% to 78%, 5-year survival rate increased from 33% to 35%, and it’s believed that increase of R0 operative excision rate could lengthen survival time of the patients[4]. Among 18 patients, 17 patients died due to postoperative tumor relapse and their survival time was 8-29 months; 1 case was still alive, no relapse was found in recent re-examination, his Bismuth typing was II type, operation method was combined left hepatic lobe and caudate lobe, and 26-month follow-up visit was respectively carried out after the operation; median survival time of all patients was 21 months. Through Kazuhiro O statistics, it’s found that papillary carcinoma patients staged as T1 or T2 in Bismuth I and II types accepted pure hepatic portal bile duct excision, and all reached R0 excision, their 5-year survival rate reached 100%, but those who adopted pure hepatic portal bile duct excision (Bismuth I and II types) and those who accepted combined hepatectomy (one Bismuth II-type patient, and all of the others were Bismuth III and IV types) among nodular-type and planar infiltration-type patients had their R0 excision rates reaching 50% and 77.8%, and their 5-year survival rates were 0% and 18.7% respectively, thus it’s believed that pure hepatic portal bile duct excision was applicable to papillary carcinoma staged as T1 or T2 in Bismuth I and II types. Wei-Chieh KA and Dong WC et al. Found through a statistics that overall survival time of patients accepting combined caudate lobe excision among Bismuth III-type patients was obviously longer than those not accepting combined caudate lobe excision (being 64.0 months and 34.6 months respectively, P=0.010), and their disease-free survival time was also long (40.5 months and 27.0 months respectively, P=0.031), so it’s considered that combined caudate lobe excision could obviously lengthen disease-free survival time and overall survival time of Bismuth III-type patients[5]. Lymphatic tissues and nerve plexuses in hepatic portal region are mainly distributed in hepatic portal, hepatoduodenal ligament, beside common hepatic artery and behind the pancreas head, lymph nodes and nerve plexuses in these regions should be cleaned up to realize skeletonization of hepatoduodenal ligament. When the blood vessel is invaded, blood vessel excision and reconstruction should be carried out. Tamoto E et al. summarized perioperative data, histological examination results, recurrence rate and 5-year survival rate (59% and 51% respectively, P=0.353) of 36 patients accepting non-contact portal vein excision and 13 patients not accepting portal vein excision (both accepting right hepatic lobe excision) and found that invaded portal vein excision according to non-contact principle combining right hepatic lobe excision could generate active effect on the survival rate and this method was feasible[6]. There are still disputes over therapeutic effect of hepatic transplantation therapy. Lai Yanhua et al. summarized median survival time (29.5 months) among 18 HCCA patients accepting hepatic transplantation therapy [7]. To sum up, with continuously deepened understanding of surgical operation technique and HCCA, both HCCA operative radical excision rate and survival rate have been significantly elevated and radical excision operative treatment can increase patients’ survival rate and lengthen their survival time.
References


