



# The prognostic value of a classification system for centrally located liver tumors in the setting of hepatocellular carcinoma after mesohepatectomy



Jianguo Qiu<sup>a</sup>, Shuting Chen<sup>b</sup>, Hong Wu<sup>b</sup>, Chengyou Du<sup>a,\*</sup>

<sup>a</sup> Department of Hepatobiliary Surgery, The First Affiliated Hospital of Chongqing Medical University, Chongqing 400016, China

<sup>b</sup> Department of Hepatobiliary Pancreatic Surgery, West China Hospital, Sichuan University, Chengdu 610041, Sichuan Province, China

## ARTICLE INFO

### Article history:

Received 3 October 2015

Received in revised form

9 December 2015

Accepted 4 March 2016

### Keywords:

Hepatocellular carcinoma

Hepatectomy

Mesohepatectomy

Survival

Prognostic factors

## ABSTRACT

**Background:** A classification system of centrally located liver tumors (CLLTs) was proposed by our group in 2013, which divided CLLTs into four subtypes by focusing on the involvement of resected segments and the anatomical location of lesions relative to the principal hepatic vascular structures. The current study aimed to analyze the clinical characteristics and compare the surgical outcomes of the different CLLTs classification system for patients with hepatocellular carcinoma (HCC) underwent mesohepatectomy (MH). Moreover, we sought to validate the prognostic value of the new classification system.

**Methods:** Data from 353 consecutive patients with centrally located HCC who were treated with MH between 2005 and 2013 were prospectively collected and retrospectively reviewed.

**Results:** The 1-, 3-, and 5-y overall recurrence rates were 21.4%, 41.3%, and 55.6%, respectively. The 1-, 3-, and 5-y overall (OS) and corresponding recurrence-free survival rates (RFS) were 82.5%, 61.6%, 40.2%, and 68.8%, 42.5%, 30.7%, respectively. According the CLLTs classification system, 106 patients were classified as type I, 68 as type II, 94 as type III and 85 as type IV. There were no significant differences in RFS rate among the CLLTs groups, however, a significant decrease in OS rates was observed in the type IV classification, respectively. Multivariate analysis reveal that patients with microvascular invasion, portal vein thrombosis, the largest tumor size  $\geq 5$  cm, tumor number  $\geq 3$ , liver cirrhosis, hepatic inflow occlusion  $\geq 60$  min, intraoperative blood loss  $\geq 1500$  ml, pTNM staging and CLLTs classification of Type IV to be independent adverse factors for long-term survivals.

**Conclusion:** The classification system of CLLTs is meant to help clinicians in defining the extent of resection, providing a risk assessment and predicting prognosis. However, it is need to be validated in more HCC patients and medical centers.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction

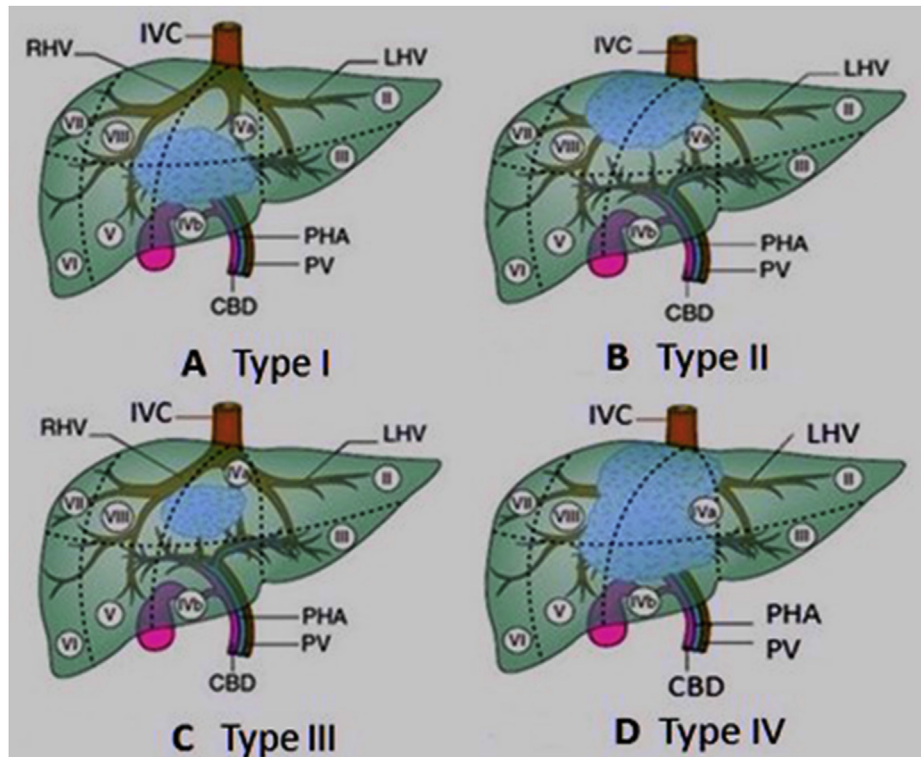
Liver resection is still considered to be the potentially curative choice for treating primary hepatocellular carcinoma (HCC) [1–3]. However, the treatment of patients with central liver tumors involving segments IV, V and VIII is still a difficult clinical problem. The traditional management of such tumors is to perform either an extended right or an extended left hepatectomy. However, such

surgical procedures are associated with greater incidence of post-operative liver failure and mortality, due to as much as 70–80% of the hepatic parenchyma is sacrificed [4–6].

Theoretically, central liver resection or mesohepatectomy (MH) may be superior to extended hepatectomy, because it conserves more liver parenchyma [7–9]. With the improved comprehension of liver anatomy and surgical experience, a classification system of centrally located liver tumors (CLLTs) was proposed by our group [10], which divided CLLTs into four subtypes by focusing on the involvement of resected segments and the anatomical location of lesions relative to the principal hepatic vascular structures (Fig. 1). Each type has its own specific surgical related complications, surgical resection range, and the optimal hepatic blood flow occlusion

\* Corresponding author. Department of Hepatobiliary Surgery, The First Affiliated Hospital of Chongqing Medical University, Chongqing 400016, China.

E-mail addresses: [qiujianguo456@163.com](mailto:qiujianguo456@163.com) (J. Qiu), [duchengyoucyfy@163.com](mailto:duchengyoucyfy@163.com) (C. Du).



**Fig. 1.** CLLTs classification type I to type IV; Roman numerals indicate Couinaud's classification of liver segments. A type I was characterized by tumor close proximity to, or direct invasion of, the portal veins; B type II was characterized by tumor close proximity to, or direct invasion of, the hepatic veins; C type III was characterized by tumor were not close to either portal veins or hepatic veins; D type IV was characterized by tumor close proximity to, or direct invasion of both portal and hepatic veins; RHV, right hepatic vein; LHV, left hepatic vein; PHA, proper hepatic artery; PV, portal vein; CBD, common bile duct; IVC, inferior vena cava (original drawings from British Journal of Surgery 2013; 100: page 1620 to 1626 [10]).

technique.

The treatment guidance value of the CLLTs classification system has been already confirmed by our group previously [10]. However, the prognostic value of the new classification system has not been validated so far. In the present study, on the basis of the data of 353 consecutive patients with HCC in our single center for the past 9 years, we attempted to analyze the clinical characteristics and surgical outcome for HCC patients using the new classification of CLLTs, emphasized on making a comparison with the recurrence and long-term survivals differences among the four types of CLLTs. What's more, we would also validate the prognostic value of this new classification system.

## 2. Patients and methods

### 2.1. Patients population

This study was performed under a human investigational protocol that was approved and monitored by the Institutional Review Board of West China Hospital and The First Affiliated Hospital of Chongqing Medical University. The ethics committee also approved the retrospective analysis of existing patient data without informed consent because of the low risk for breaching confidentiality. All patients were required to meet the following eligibility criteria for tumor resection: ① physical fitness for mesohepatectomy; ② absence of intra- or extrahepatic disseminated disease; ③ compensated liver function: Child-Pugh classification A or B; ④ Indocyanine Green Retention rate at 15 min (ICG-R15) less than 15%. From January 1, 2005 to December 31, 2013, 1100 consecutive patients with centrally located HCC were identified from our prospectively maintained liver neoplasm database. After review of the

clinical charts, 353 patients were performed by MH were included in current study. Most of them (268/353) have been included in a previous report from our department [10].

### 2.2. Classification of CLLTs

On the basis of the knowledge in liver anatomy and the nomenclature for resection, we proposed a classification system of CLLTs which divides CLLT into 4 types based on anatomical location between lesions and hepatic principal vascular structures as well as the involvement of resected segments (Fig. 1). In clinical practice, each type of classification has different technical key points, resection extent, and operation-related complications. For lesions developed from liver parenchyma of segment V, IVb or both were classified as type I. The operation requires complete resection of segments V, IVb, and marginal resection of partial segments IVa, VIII. Lesions developed from liver parenchyma of segment IVa, VIII or both were classified as type II. The operation requires complete resection of segments IVa, VIII, and marginal resection of partial segments V, IVb. Lesions developed from the conjunction of segments IVa and VIII with segments V and IVb were classified as type III. This type is further classified into two subtypes: **TYPE IIIa**, lesions developed at the superficial parenchyma of the conjunction; **TYPE IIIb**, lesions developed at the deep parenchyma of the conjunction which characterizes tight proximity to IVC. The operation of the former subtype requires an irregular resection along with the border of the lesions, while the latter requires the resection of segments IV, V, VIII±I. Lesions occupied a large proportion of parenchyma between the two Porta were classified as Type IV. The operation requires the resection of segments IV, V, VIII±I as well. Among the four types of centrally located liver tumors, type IV is

Download English Version:

<https://daneshyari.com/en/article/6481956>

Download Persian Version:

<https://daneshyari.com/article/6481956>

[Daneshyari.com](https://daneshyari.com)