

Surgical Extent of Radical Cholecystectomy

National Cancer Center

Sang-Jae Park

Gallbladder (GB) cancer is a fatal disease which has the only chance to be cured by surgical resection. The primary goal of surgery in GB cancer is to achieve no residual tumor state microscopically (R0 resection) with safety. There is still debates about the extent of surgery in GB cancer. The extent of surgery for GB cancer is determined by several factors, such as T-stage (or depth of invasion), gross type (expansive/infiltrative), tumor location (fundus/body/neck) and patients' general condition etc.

Extent of Surgery According to T-stage

T-stage is not only the most important factor for determining the extent of GB cancer surgery but also the most powerful predictive factor for lymph node(LN) metastasis, which is the most important prognostic factor of GB cancer. LN metastasis rate according to T-stage is as follows: T1a 0-4%, T1b 12.5-20%, T2 20-62%, T3/4 60-81%.

For T1a stage, there is a consensus that simple

cholecystectomy is enough. Big debates are exist for T1b and T2 stage GB cancer.

For T1b stage, some reports said that simple cholecystectomy is recommendable because 10 year-survival after simple cholecystectomy was over 90%. However others reported that LN metastasis rate of T1b stage is over 20% and recurrence rate after simple cholecystectomy for T1b GB cancer is over 30% therefore radical cholecystectomy is better than simple cholecystectomy in T1b stage.

For T2 stage, there is still debates however radical cholecystectomy has been recommended more in several retrospective studies (Table 1).

Segment IVb +V resection is general recommendation for the extent of liver resection in T2 GB cancer compared to wedge resection of GB bed because IVb+V resection has the theoretical advantage to remove the potential liver micrometastasis.

There is a debates regarding the extent of LN dissection in GB cancer. In about 90% of LN metastasis cases of GB cancer, LN group 12b, c, P and 13a are

Table 1

Five-year survival for T2 disease after simple cholecystectomy or reoperative surgery with radical cholecystectomy.

Author	5-year survival	
	Simple cholecystectomy (%)	Radical cholecystectomy (%)
Fong et al. ⁵⁶	19	61
Shirai et al. ²⁴	40	90
Chijiwa et al. ⁵⁷	17	75
Wakai et al. ⁵	50	100

involved, therefore, for the accurate staging, those LN groups seems to be included. Many experienced Korean and Japan surgeons advocated that their routine extents of LN dissection for advanced GB cancer include LN group 12b, c, p, 8 and 13a. However there is no full consensus that LN dissection could enhance the prognosis, especially with extended procedure.

The prognosis after resection of T3 GB cancer is rather poor. The extent of liver resection seems to be bigger, including extended right hepatectomy. Combined resection of bile duct or other adjacent organs could be considered when direct invasion is suspicious and R0 resection could be possible.

Extent of Surgery According to the Gross Types

According to the gross types, GB cancer can be classified to expansive and infiltrative type. In general, infiltrative type tends to invade the adjacent tissue including vessels, lymphatics, bile duct or liver, therefore in case of T2 stage, anatomic IVb+V resection with/without bile duct is recommended than wedge resection of GB bed.

Extent of Surgery According to the Tumor Location

About 60% of GB cancer develops in fundus, 30% in body, 10% in neck. Since the length between GB neck and right IHD is as short as 2 mm, combined resection of right liver and bile duct has a theoretical advantage in oncologic aspect. In case of infiltrative type, extended right hepatectomy with bile duct resection may be necessary to eradicate the potential direct invasion or micrometastasis of hepatoduodenal ligament.

References

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