

New trends in Hepatic resection for liver metastasis

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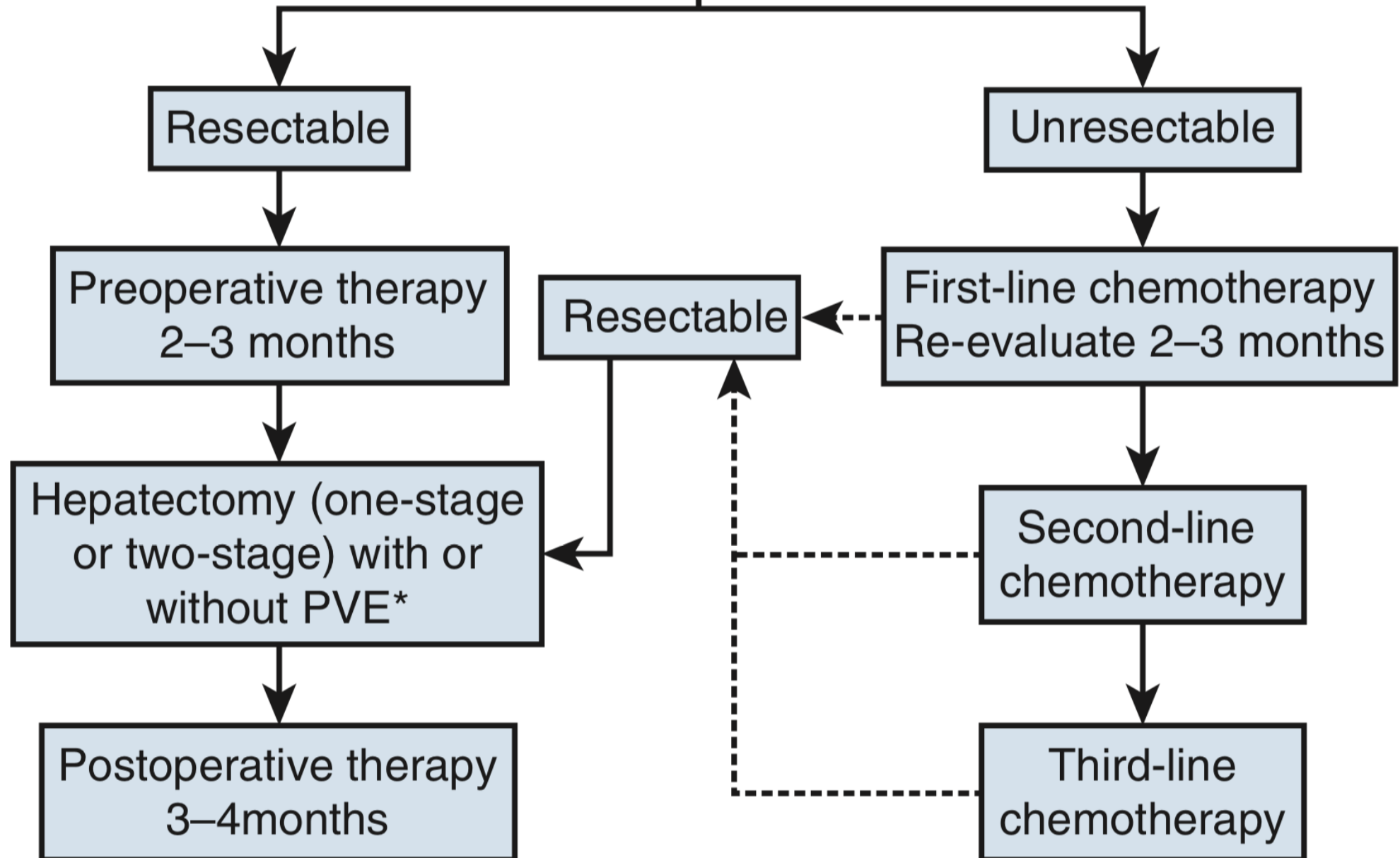
Hepatic metastasis from colorectal cancer

Hepatic metastasis from neuroendocrine cancers

Non colorectal nonneuroendocrine metastases

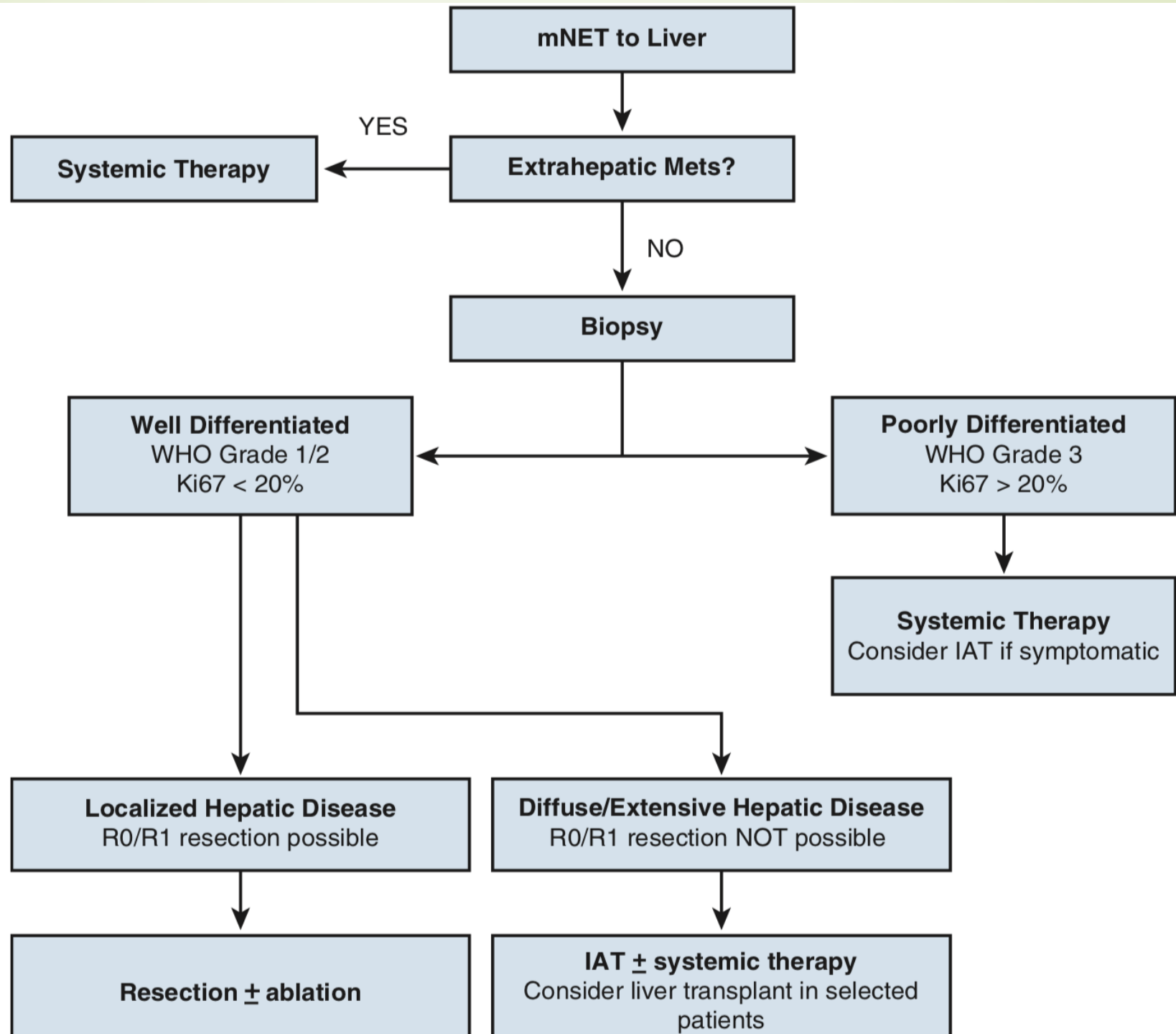



Diagnosis of liver metastasis of colorectal cancer



CONCLUSION

For medically fit patients with metastatic CRC to the liver, hepatic resection is the standard of care. In the hands of expert surgeons, hepatic metastasectomy can be performed with an acceptable morbidity and mortality. It results in prolonged survival in most patients and offers the best possibility for cure. The advent of more effective biologic and cytotoxic therapies will continue to extend therapeutic options and increase the number of patients who might benefit from resection. Increasingly refined surgical approaches combined with genetic analysis–driven adjuvant treatments will likely continue to improve the cure rate in patients with a disease that was believed to be terminal just a few decades ago.





Primary Tumor	No. (%)
Breast	29 (20)
Melanoma	17 (12)
Reproductive tract	39 (28)
Testicular	20 (14)
Gynecologic	19 (14)
Ovarian	12
Endometrial	4
Cervical	2
Fallopian tube	1
Adrenocortical	15 (11)
Renal	11 (8)
Gastrointestinal	12 (9)
Stomach	3
Duodenal	1
Pancreatic	5
Ampullary	2
Anal	1
Other	13 (9)
Lung	4
Salivary gland	3
Nasopharyngeal	2
Glottal	1
Tonsil	1
Thyroid	1
Sweat gland	1
Unknown	5 (3)

From Weitz J, et al: Partial hepatectomy for metastases from noncolorectal, nonneuroendocrine carcinoma. *Ann Surg* 241(2):269-276, 2004.)

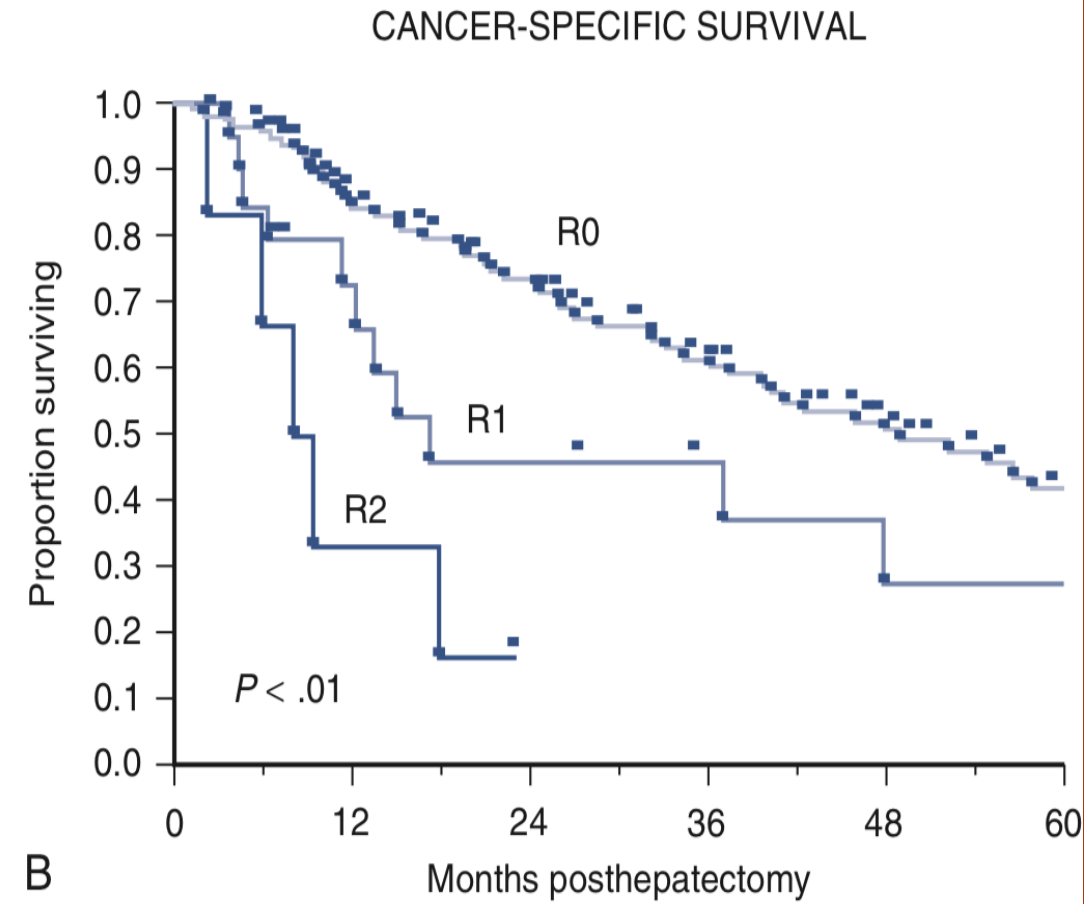
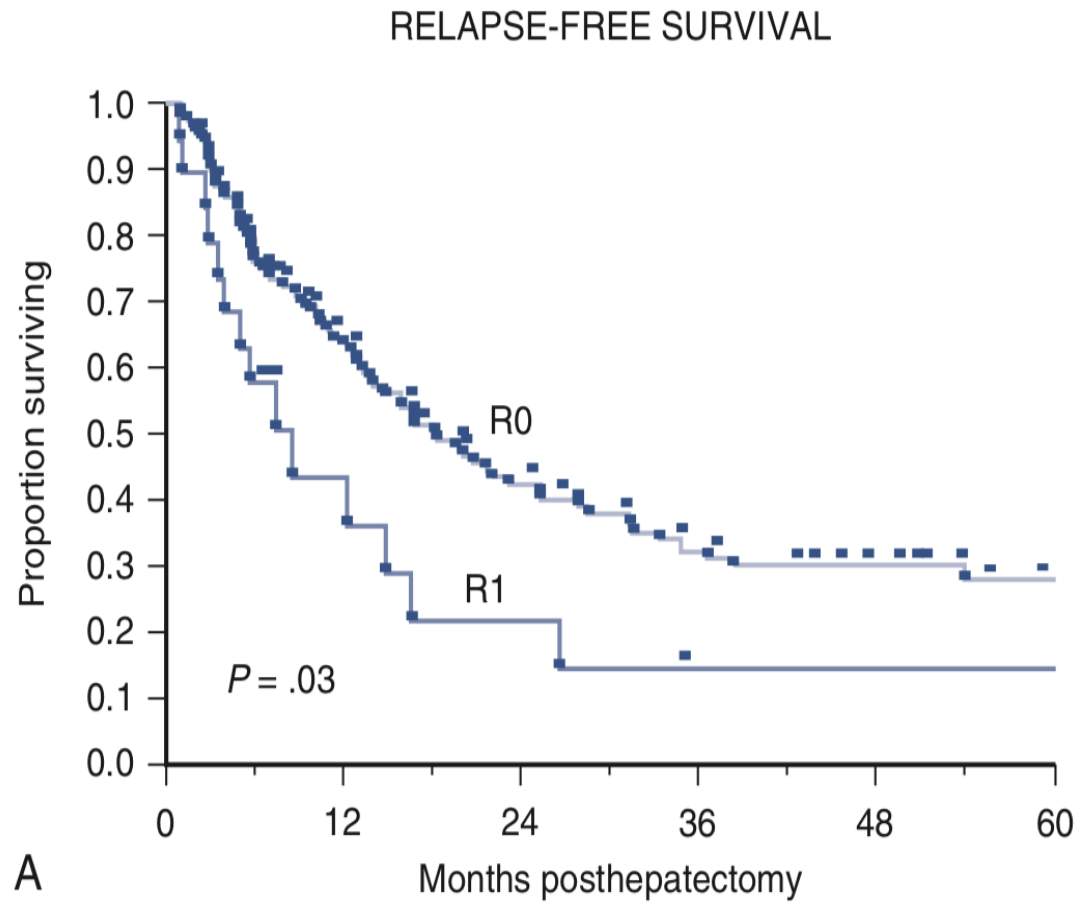


FIGURE 94.1. Survival after resection of hepatic metastases stratified according to margin status (R0, $n = 116$; R1, $n = 19$; R2, $n = 6$). **A**, Relapse-free survival (patients with R2 resection were excluded for relapse-free survival). **B**, Cancer-specific survival. (From Weitz J, et al: *Partial hepatectomy for metastases from noncolorectal, nonneuroendocrine carcinoma*. Ann Surg 241(2):269-276, 2004.)

TABLE 94.3 Results of Liver Resection for Metastatic Breast Cancer*

Reference	No. Patients	Median Survival (mo) [†]	Adverse Prognostic Factors	Comments
Sadot et al, 2016	69	50	Node involvement of primary tumor Multiple liver metastases	No extrahepatic disease; case control comparison to medically treated patients; resection and ablation patients combined
Bacalbasa et al, 2014	52	32	Estrogen/progesterone receptor status Node involvement of primary tumor Multiple liver metastases	Inclusion criteria: no extrahepatic disease
Hoffmann et al, 2010	41	34	Positive resection margin Disease-free interval <12 mo	Median overall survival, 58 months
Caralt et al, 2008	12	36	Disease-free interval <24 mo	Seven patients experienced hepatic recurrence
Vlastos et al, 2004	31	63	None	Inclusion criteria: no extrahepatic disease
Elias et al, 2003	54	34	Negative receptor status (odds ratio, 3.5)	Inclusion criteria: no extrahepatic disease, no disease progression on chemotherapy
Pocard et al, 2000	49	42	Short disease-free interval; node-positive primary	Inclusion criteria: good performance status, objective response on chemotherapy, 1-3 liver metastases
Selzner et al, 2000	17	27	Short disease-free interval	6041 patients with breast cancer treated during study interval
Yoshimoto et al, 2000	25	34	None	67% of patients experienced recurrence in the liver

*Only series including >10 patients are presented.

[†]Overall survival.

TABLE 94.4 Results of Liver Resection for Metastatic Gastric Cancer*

Reference	No. Patients	Median Survival [†]	Adverse Prognostic Factors	Comments
Schildberg et al, 2012	31	5-year survival, 13%	Synchronous liver metastases R1 and R2 resection	
Takemura et al, 2012	64	34 months	Serosal invasion of the primary tumor, large hepatic tumor (>5 cm),	32 patients received synchronous gastrectomy and hepatectomy; 32 patients underwent metachronous hepatectomy
Garancini et al, 2012	21	11 months, 5-year survival rate 19%	Positive resection margin; >1 liver metastasis; no fibrous pseudocapsule	Three 5-year survivors; 68% of patients developed liver recurrence of metastasis
Ambiru et al, 2001	40	2-year survival, 27%	Synchronous metastases	Six 5-year survivors; 72% of patients developed liver recurrence
Fujii et al, 2001	12	16.3 months	Disease-free interval <12 months; metastases > 5 cm	—

*Only series including >10 patients are presented.

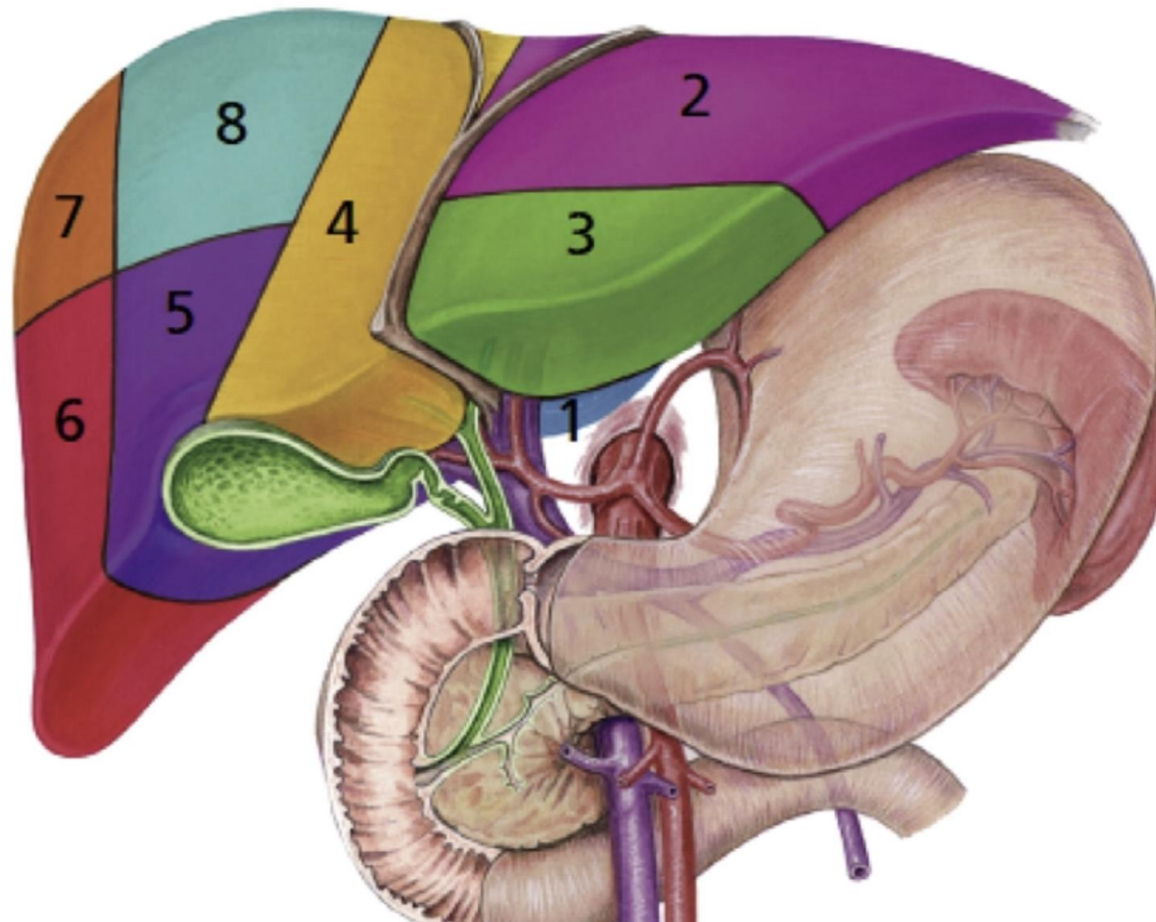
[†]Overall survival.

Child-Pugh scoring system

Parameter	Points Assigned		
	1	2	3
Albumin (g/litre)	>35	25–35	<25
Bilirubin (μM)	<34	34–50	>50
International normalized ratio	<1.7	1.7–2.2	>2.2
Ascites	None	Controlled	Refractory
Encephalopathy ^a	Grade 0	Grade 1–2 or medical control	Grade 3–4 or refractory
Class A	5–6 points	Well compensated	
Class B	7–9 points	Significant functional impairment	
Class C	10–15 points	Decompensated	

^a West Haven criteria for encephalopathy

Grade 0	Normal
Grade 1	Behavioural change, minimal loss of awareness
Grade 2	Inappropriate behaviour, gross disorientation, drowsiness
Grade 3	Semi-stupor, marked confusion, incoherent speech
Grade 4	Coma



Left Lateral

Sectionectomy = 2 3

Left

Hemihepatectomy = 1 2 3 4

Left Trisectionectomy = 1 2 3 4 5 8

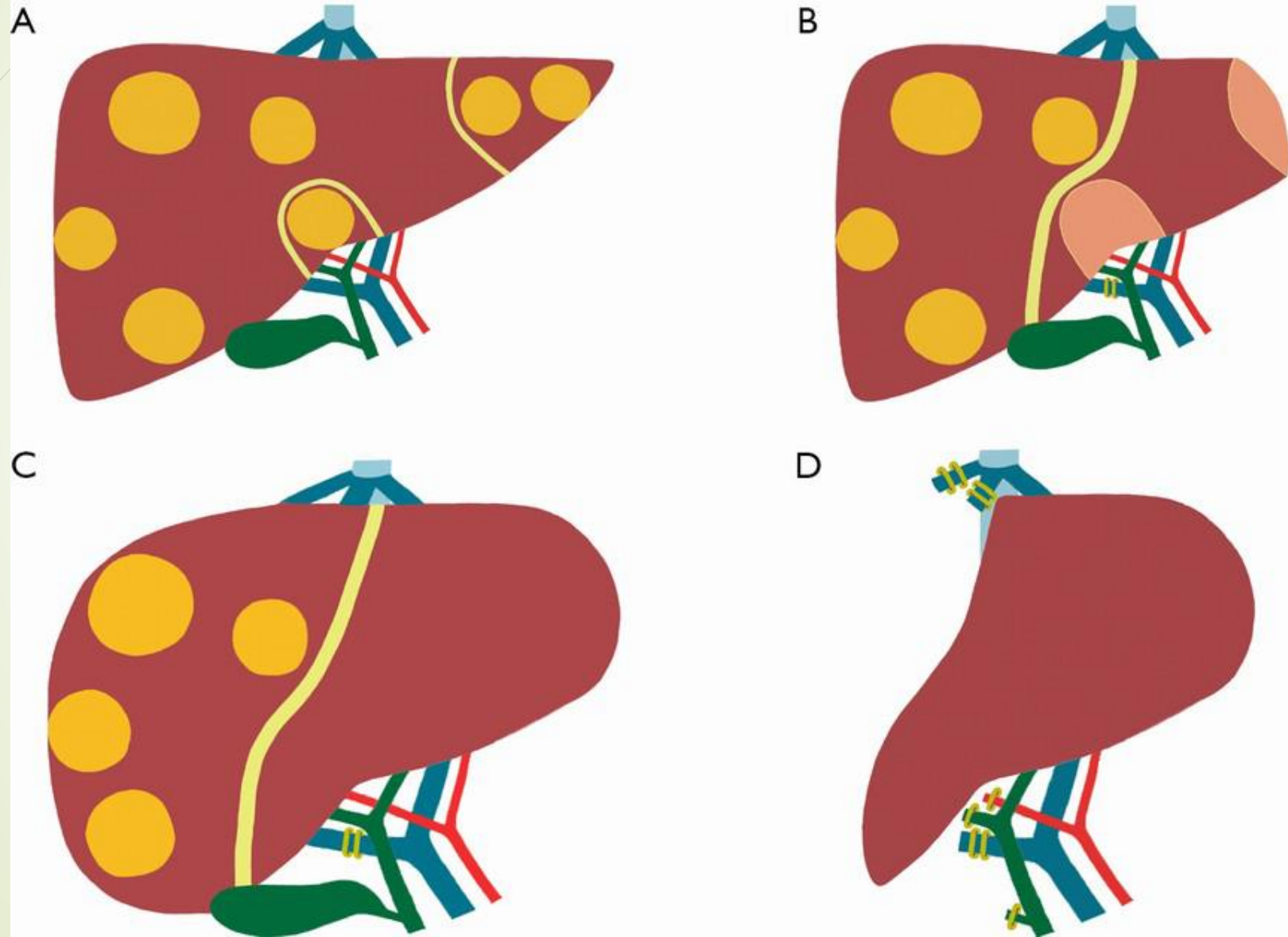
Right Hemihepatectomy

= 5 6 7 8

Right Trisectionectomy

= 4 5 6 7 8

ALPPS



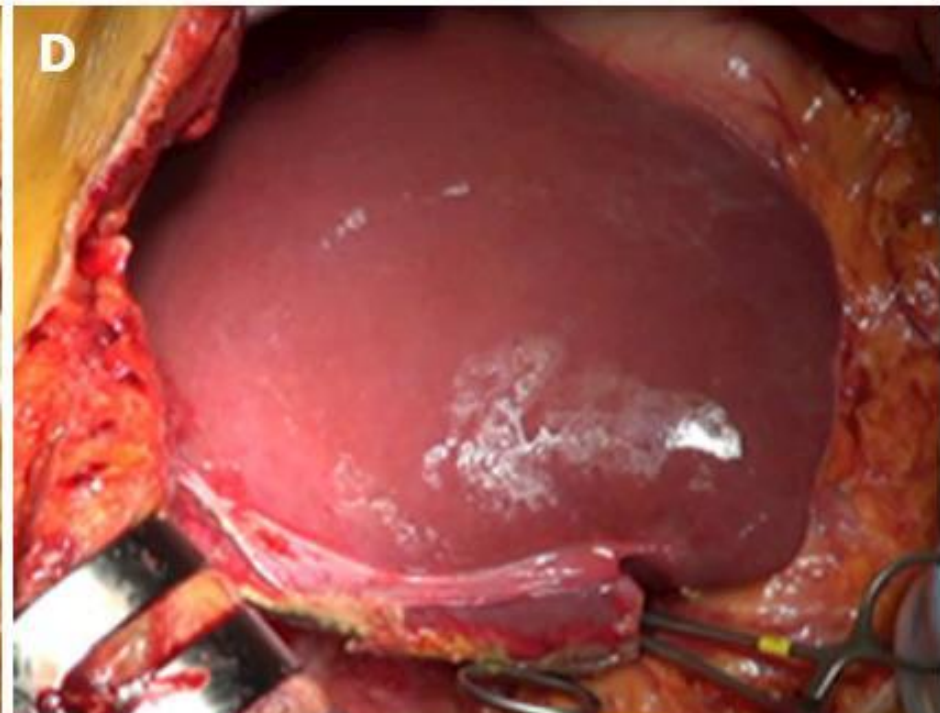
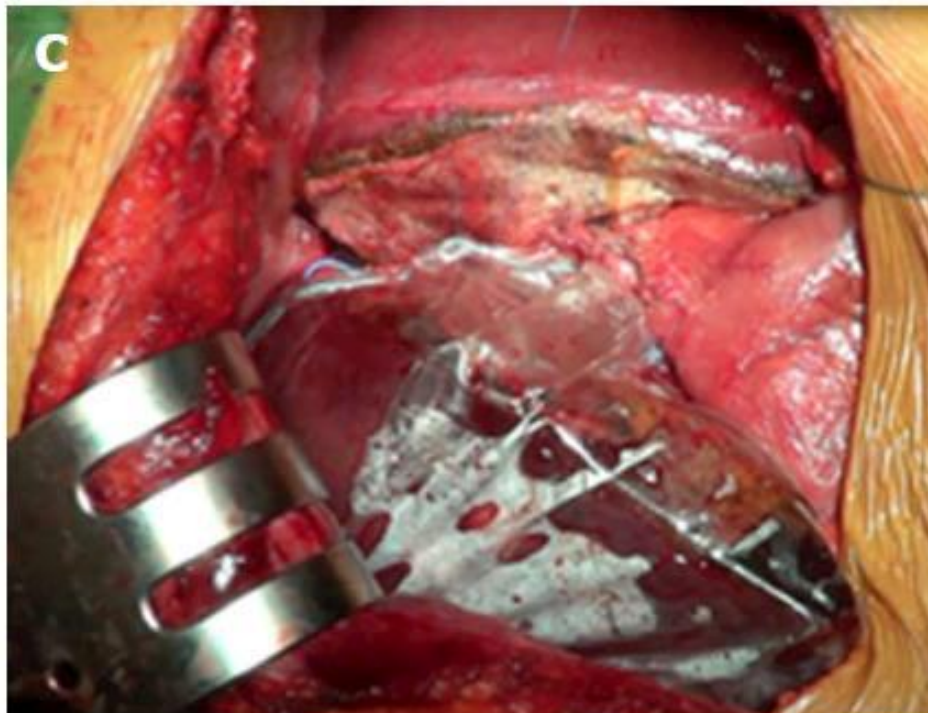
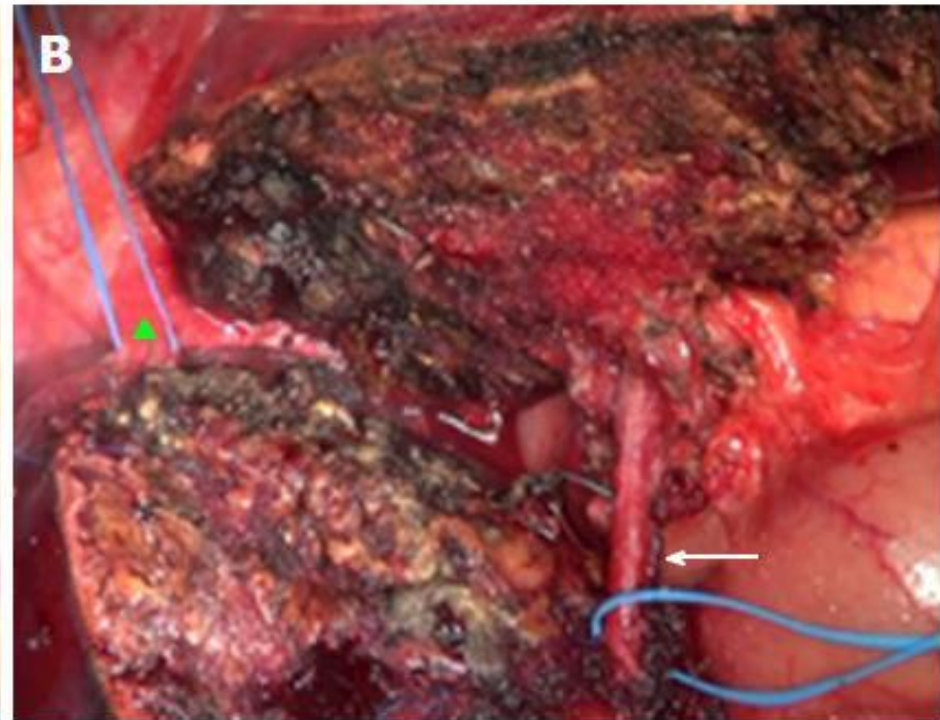
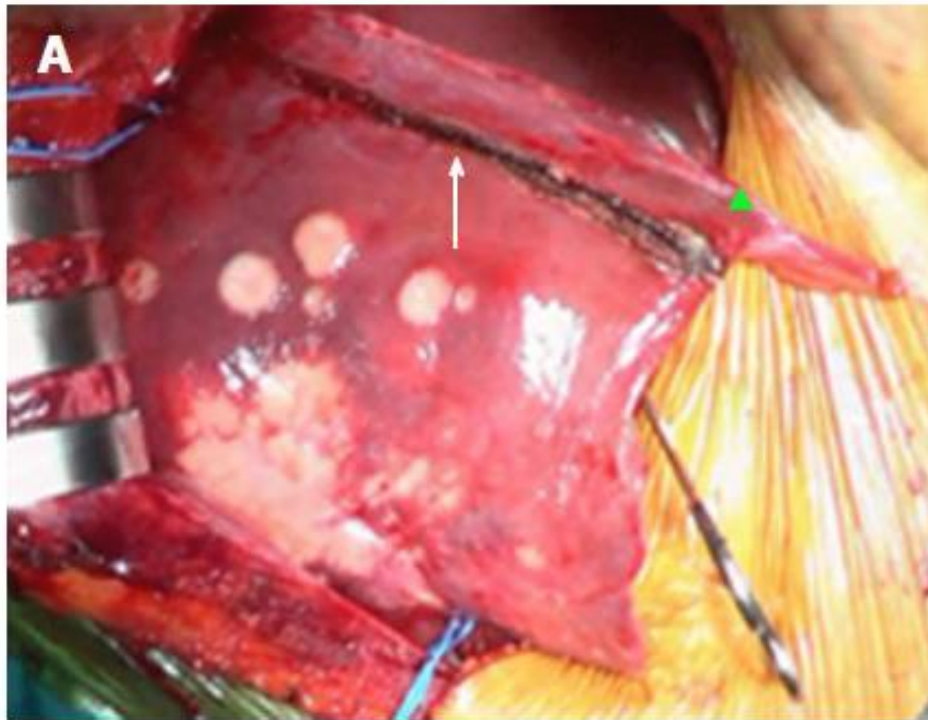




Figure 2 Multimodal aspects of enhanced recovery. CHO, carbohydrate; NGT, nasogastric tube; NSAID, non-steroidal anti-inflammatory drug; PONV, postoperative nausea and vomiting.

CONCLUSION

Hepatic resection for metastatic NCNN tumors is safe and is associated with a favorable outcome in highly selected patients. Primary tumor type and disease-free interval seem to be valid selection parameters. Because hepatic resection is often the only modality offering a potential cure, it should be considered in some patients with metastases from NCNN tumors.

References are available at expertconsult.com.