

Severe obesity (BMI more than 35 kg/m²) with liver cancer, how should we do?

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I have no potential conflict of interest to report

Obesity and cancer

CA Cancer J Clin. 2019 Mar;69(2):88-112. doi: 10.3322/caac.21499. Epub 2018 Dec 12.

Global patterns in excess body weight and the associated cancer burden.

Sung H¹, Siegel RL², Torre LA³, Pearson-Stuttard J⁴, Islami F², Fedewa SA⁵, Goding Sauer A⁶, Shuval K⁷, Gapstur SM⁸, Jacobs EJ⁹, Giovannucci EL¹⁰, Jemal A¹¹.

⊕ Author information

USA (CA, IF=244.585)

Abstract

The prevalence of excess body weight in 1975 and 2016, the prevalence of excess weight in men and 24% in women to approximately 12% in men and 24% in women to approximately 12% from 3% to 12%, and more than double the 6-fold increase in the number of obese boys in high-income Western countries in excess body weight in almost all countries. The rise in excess body weight in almost all countries is driven by the consumption of dense, nutrient-poor foods, alongside rising rates of obesity. In 2016, 3.9% of all cancers (544,300 cases) were attributed to obesity in Western countries and in Middle Eastern countries (175,800 cases). Globally, the prevalence in low- and middle-income countries is higher than in high-income countries. There is emerging consensus on opportunities to promote an environment conducive to healthy weight. This study highlights the need for a rejuvenated focus on obesity prevention and weight management.

Med CellPress

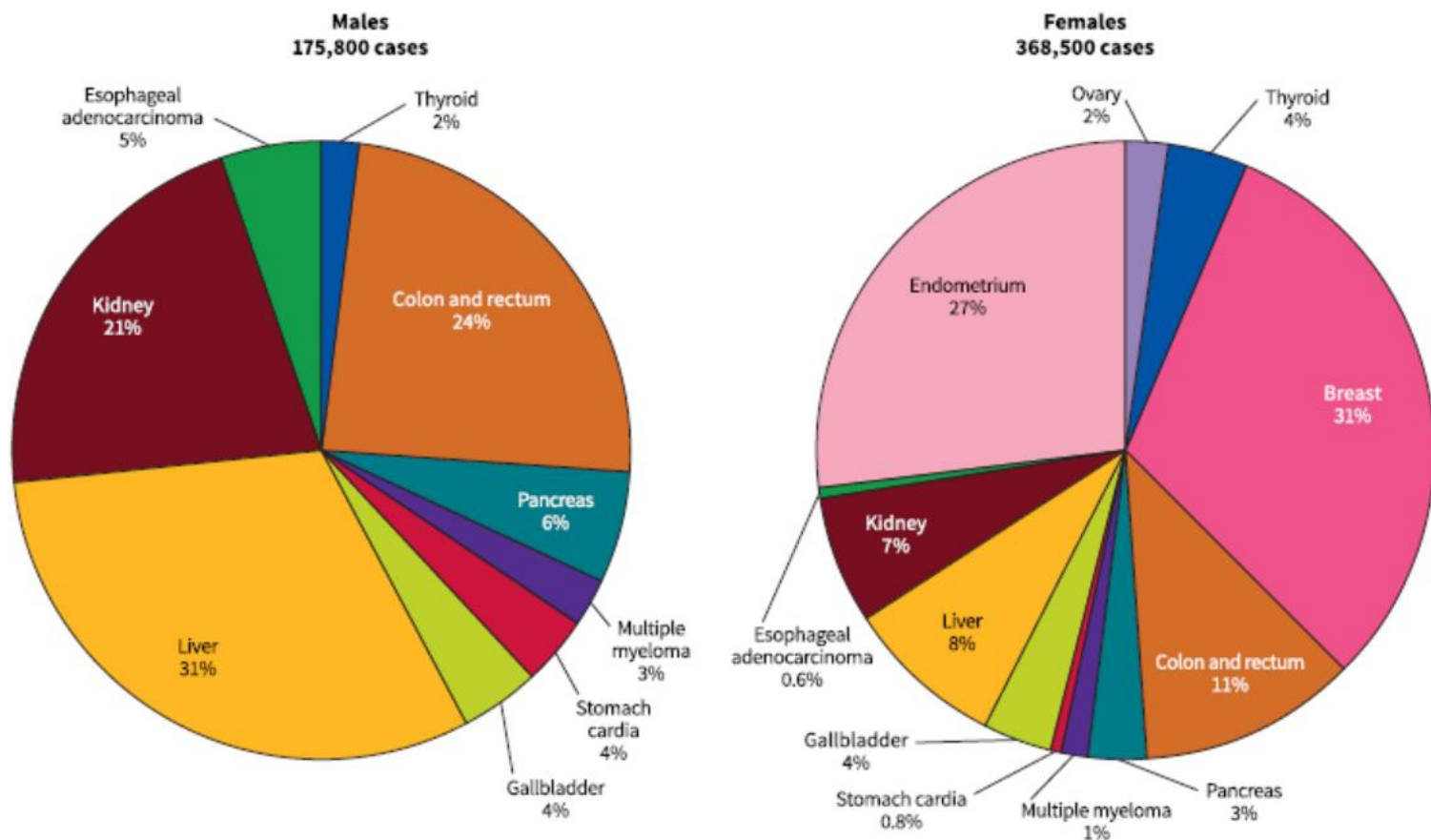
Article
Rising incidence of obesity-related cancers among younger adults in China: A population-based analysis (2007–2021)

Chang Liu,^{1,2,3,6} Ying-Chao Yuan,^{1,2,3,6} Mo-Ning Guo,⁴ Zhong Xin,^{1,2,3} Guan-Jie Chen,⁵ Nan Ding,^{1,2,3} Jian-Peng Zheng,⁴ Bai Zang,⁴ and Jin-Kui Yang^{1,2,3,7,*}

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<https://doi.org/10.1016/j.medj.2024.07.012>

Obesity is closely related to cancer

Obesity and cancer



The most common obesity-related cancers in men are liver cancer, colorectal cancer, and kidney cancer

while in women, they are breast cancer, endometrial cancer, and colorectal cancer.

FIGURE 7. Contribution of Each Cancer to Total Cancer Burden Attributable to Excess Body Weight (Body Mass Index ≥ 25 kg/m²) by Sex in 2012. Datasource: Pearson-Stuttard J, Zhou B, Kontis V, Bentham J, Gunter MJ, Ezzati M. Worldwide burden of cancer attributable to diabetes and high body-mass index: a comparative risk assessment. *Lancet Diabetes Endocrinol.* 2018;6:e6-e15.8 Adapted with permission from the authors

Obesity and liver cancer

Meta-Analysis

> Clin Mol Hepatol. 2021 Jan;27(1):157-174. doi: 10.3350/cmh.2020.0176.

Epub 2020 Nov 26.

Obesity and the risk of primary liver cancer: A systematic review and meta-analysis

Won Sohn¹, Hyun Woong Lee², Sangheun Lee³, Jin Hong Lim⁴, Min Woo Lee⁵,
Chan Hyuk Park⁶, Seung Kew Yoon⁷

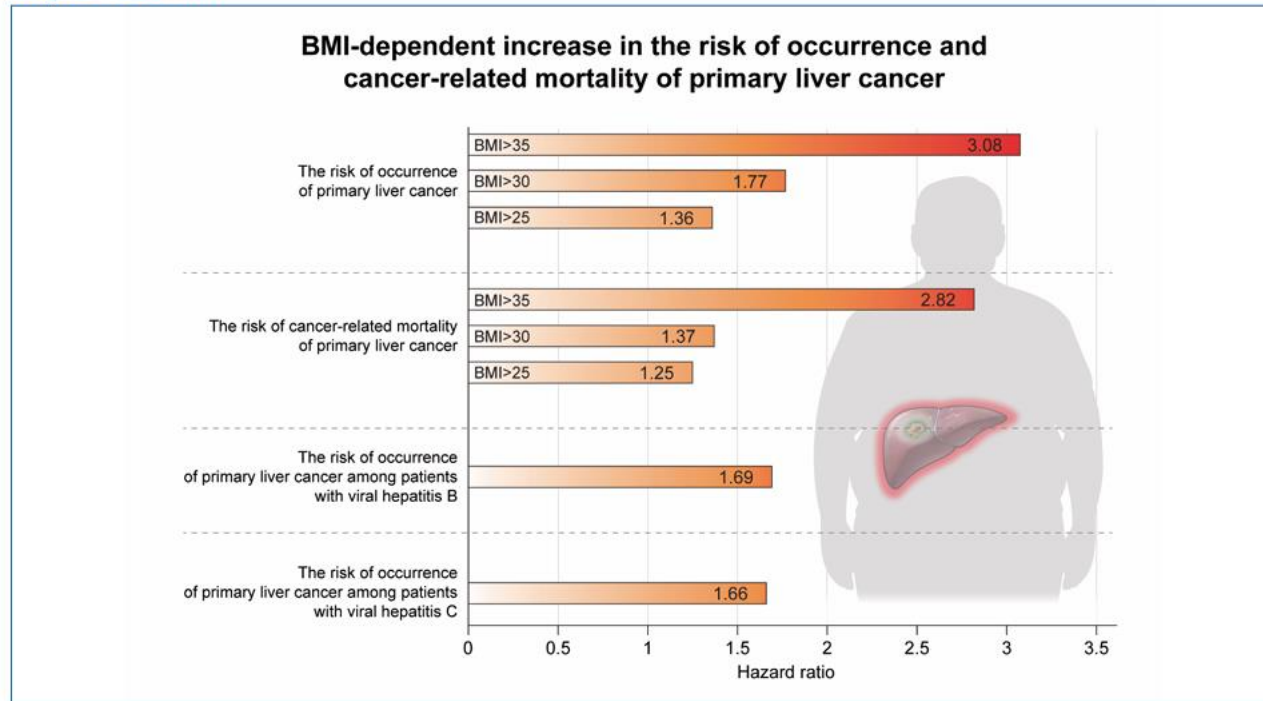
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PMID: 33238333 PMCID: [PMC7820201](#) DOI: [10.3350/cmh.2020.0176](#)

Results: A total of 28 prospective cohort studies with 8,135,906 subjects were included in the final analysis. These included 22 studies with 6,059,561 subjects for cancer occurrence and seven studies with 2,077,425 subjects for cancer-related mortality. In the meta-analysis, an increase in BMI was associated with the occurrence of primary liver cancer (HR, 1.69; 95% confidence interval, 1.50-1.90, I²=56%). A BMI-dependent increase in the risk of occurrence of primary liver cancer was reported.

Obesity and liver cancer

Graphical Abstract



An increase in BMI is associated with a higher risk of primary liver cancer and liver cancer-related mortality.

Conclusion: High BMI increases liver cancer mortality and occurrence of primary liver cancer. Obesity is an independent risk factor for the occurrence of and mortality from primary liver cancer.

**If obesity come cross with liver cancer, how
should we do?**

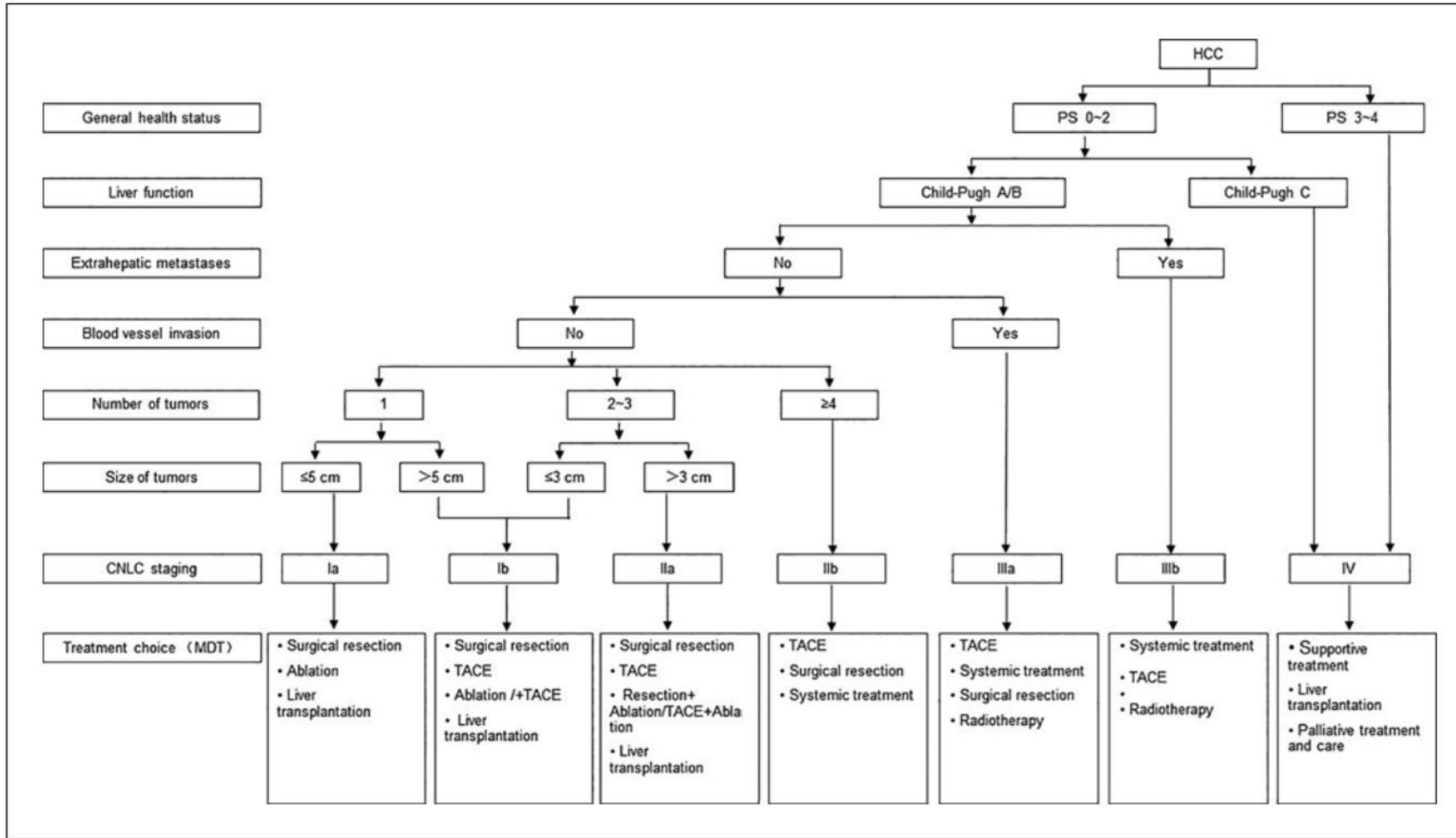
Guidelines for diagnosis and treatment of PLC

11.6 1x > Liver Cancer. 2023 Apr 5;12(5):405-444. doi: 10.1159/000530495. eCollection 2023

Guidelines for the Diagnosis and Treatment of Primary Liver Cancer (2022 Edition)

Clinical staging and treatment pathway for HCC in China

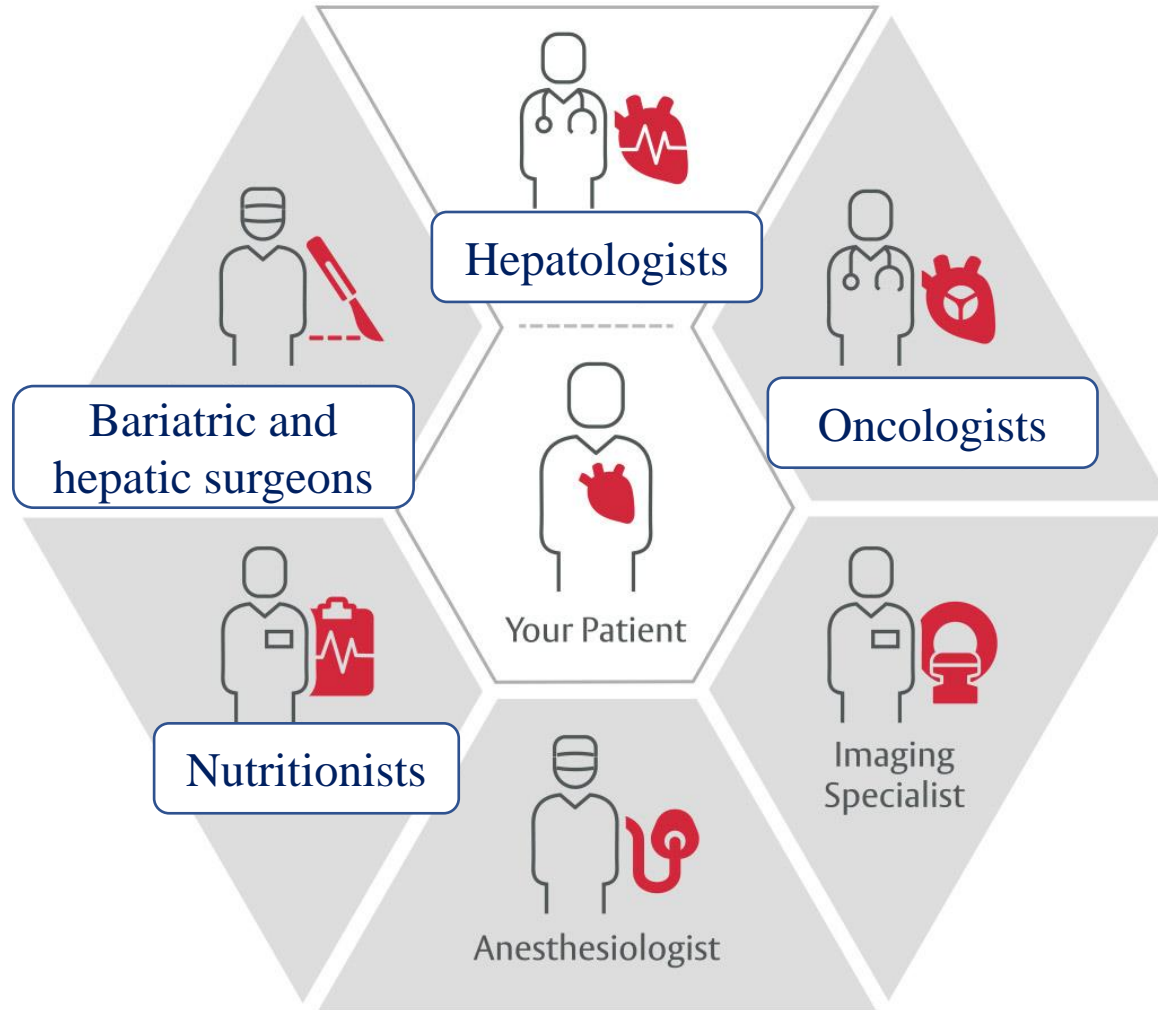
Liver cancer staging and types



If severe obesity with liver cancer, how should we do?

Managing severe obesity (BMI > 35 kg/m²) in patients with liver cancer is a complex issue that requires a multidisciplinary approach, considering both the oncological and metabolic aspects.

Multidisciplinary Assessment (MDT)



- **Team Involvement:**

Involves hepatologists, oncologists, surgeons (both bariatric and hepatic), nutritionists, and anesthesiologists.

- **Comprehensive Evaluation:**

Assess the extent of liver cancer (staging, liver function, tumor burden) and the impact of obesity (comorbidities like diabetes, cardiovascular disease, and fatty liver).

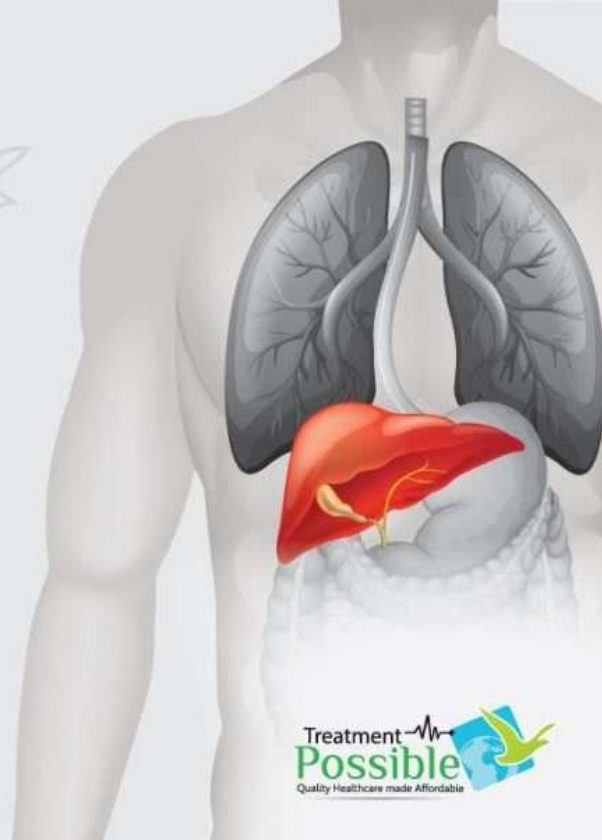
Treatment considerations

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Treatment Options for Liver Cancer

- ▷ Surgery 
- ▷ Ablation 
- ▷ Chemotherapy 
- ▷ Radiation therapy 
- ▷ Targeted therapy 
- ▷ Immunotherapy 
- ▷ Embolisation 
- ▷ Supportive (Palliative) care 

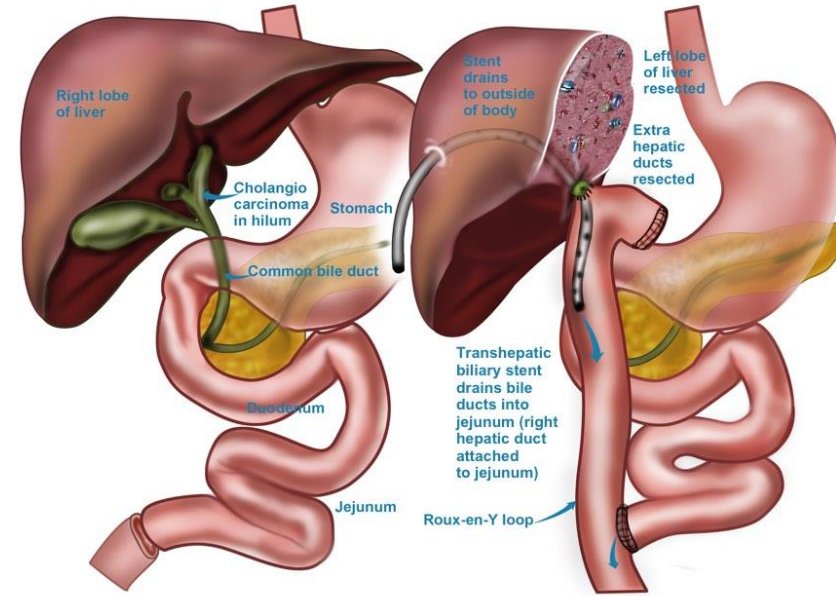
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•**Liver Cancer Treatment:** Focus on liver cancer treatment (surgery, ablation, chemotherapy, etc.), but ensure that obesity does not contraindicate or complicate these treatments.

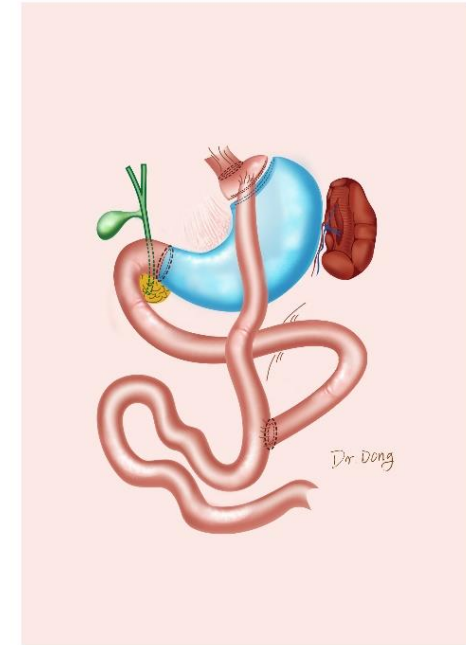
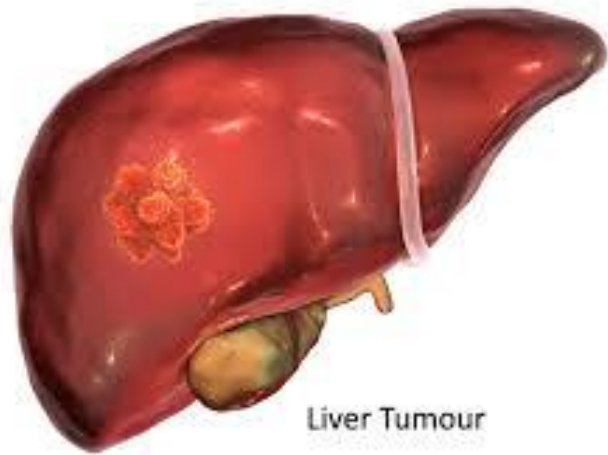
•**Weight Management:** Address obesity-related factors to optimize cancer treatment outcomes and overall patient health.

Eligibility for surgery



Determine if the patient is a candidate for liver resection surgery, considering the risks related to obesity (e.g., increased surgical risk due to fatty liver, cardiopulmonary complications).

Bariatric surgery



- Number of tumor is a single lesion or 2-3 lesions less than 3cm
- size of tumors less than 5cm
- CNLC staging is 1a

In selected cases, bariatric surgery may be considered either before or after liver cancer treatment, but this requires careful timing and coordination with cancer treatment.

Evidence of Bariatric surgery and liver cancer

Bariatric Surgery and Cancer Risk in Nonalcoholic Fatty Liver Disease-Effective Intervention for a Select Few. Editorial: **bariatric surgery** to reduce the risk of **liver cancer**-authors' reply.

Barritt AS 4th, Moon AM. [Gastroenterology](#). 2021 Jul;161(1):171-184.e10. doi: 10.1053/j.gastro.2021.03.021. Epub 2021 Mar 18.

[May;53\(10\):1157. doi: 10.1111/apt.16360.](#)
Full text available.

[Gastroenterology](#). 2021 Dec;161(6):2063-2071. doi: 10.1053/j.gastro.2021.09.031. PMID: 34089736 No abstract available

Bariatric Surgery Reduces Cancer Risk in Adults With Nonalcoholic Fatty Liver Disease and Severe Obesity

ery to reduce the risk of **liver cancer**.

Liver Cancer Reduction After Bariatric Surgery: Time to Expand Its Indication?

Pirola CJ, Sookoian S.

Ramai D, Facciorusso A. [Gastroenterology](#). 2021 Dec;161(6):2063-2071. doi: 10.1053/j.gastro.2021.09.031. PMID: 33811922 No abstract available

[Aliment Pharmacol Ther](#). 2021 Mar;53(10):1155-1156. doi: 10.1111/apt.16357.

Long-term complete remission of large hepatocellular adenoma after bariatric surgery.

Dantas ACB, Santo Filho MA, Jeismann VB, de Faria LL, Muniz RR, Rocha MS, Herman P, Santo MA.

[Obes Res Clin Pract](#). 2021 May-Jun;15(3):300-302. doi: 10.1016/j.orcp.2021.03.008. Epub 2021 Mar 23. PMID: 33766489

Bariatric Surgery and Hepatocellular Carcinoma: a Propensity Score-Matched Analysis.

Bariatric Surgery Reduces Cancer Risk in Adults With Nonalcoholic Fatty Liver Disease and Severe Obesity.

Njei B, et al. [Obes Surg](#). 2018. PMID: 30069863 **Free PMC article**.

Rustgi VK, Li Y, Gupta K, Minacapelli CD, Bhurwal A, Catalan A, et al. [Gastroenterology](#). 2021 Jul;161(1):171-184.e10. doi: 10.1053/j.gastro.2021.03.021. PMID: 33744305 **Free article**.

Systematic review with meta-analysis: bariatric surgery reduces the incidence of hepatocellular carcinoma.

Ramai D, et al. [Aliment Pharmacol Ther](#). 2021. PMID: 33721336 Review.

Bariatric Surgery and Liver Cancer in a Consortium of Academic Medical Centers.

Cite Yang B, Yang HP, Ward KK, Sahasrabudhe VV, McGlynn KA.

bariatric surgery to reduce the risk of liver cancer.
Or prevent liver cancer

Evidence of Bariatric surgery and liver cancer

2.9 3x > Obes Surg. 2016 Mar;26(3):696-700. doi: 10.1007/s11695-016-2051-1.

As shown in Table 2, admissions with a history of bariatric surgery had a 61 % lower prevalence of liver cancer compared to those without a history of bariatric surgery (PR = 0.39, 95 % CI = 0.35–0.44). The inverse association persisted within strata of sex, race, and ethnicity.

Bariatric Surgery and Liver Cancer in a Consortium of Academic Medical Centers

Table 2 Associations between hospital admissions for bariatric surgery and liver cancer diagnosis, overall and stratified by sex, race, and ethnicity (UHC database, October 2011 to April 2015)

	History of bariatric surgery	Diagnosis of liver cancer (N)	No diagnosis of liver cancer (N)	Total	Prevalence of liver cancer per 100,000 admissions	PR (95 % CI)
All	No	74,402	15,509,663	15,584,065	477.42	1.0 (ref)
	Yes	336	177,856	178,192	188.56	0.39 (0.35–0.44)
Sex						
Male	No	52,430	6,905,471	6,957,901	753.53	1.0 (ref)
	Yes	130	36,787	36,917	352.14	0.47 (0.39–0.55)
Female	No	21,971	8,603,944	8,625,915	254.71	1.0 (ref)
	Yes	206	141,068	141,274	145.82	0.57 (0.50–0.66)
Race						
White	No	44,714	10,018,249	10,062,963	444.34	1.0 (ref)
	Yes	290	128,222	128,512	225.66	0.51 (0.45–0.57)
Black	No	12,458	3,182,359	3,194,817	389.94	1.0 (ref)
	Yes	19	33,344	33,363	56.95	0.15 (0.09–0.23)
Ethnicity						
Hispanic	No	7306	1,160,231	1,167,537	625.76	1.0 (ref)
	Yes	14	8786	8800	159.09	0.25 (0.15–0.43)
Not Hispanic	No	34,968	8,059,478	8,094,446	432.00	1.0 (ref)
	Yes	190	98,610	98,800	192.31	0.45 (0.39–0.51)

CI confidence interval, PR prevalence ratio Yang B, Yang HP, Ward KK, Sahasrabudhe VV, McGlynn KA. Bariatric Surgery and Liver Cancer in a Consortium of Academic Medical Centers. Obes Surg. 2016 Mar;26(3):696-700.

Evidence of Bariatric surgery and liver cancer

Case Reports > *Obes Res Clin Pract.* 2021 May-Jun;15(3):300-302.

doi: 10.1016/j.orcp.2021.03.008. Epub 2021 Mar 23.

Long-term complete remission of large hepatocellular adenoma after bariatric surgery

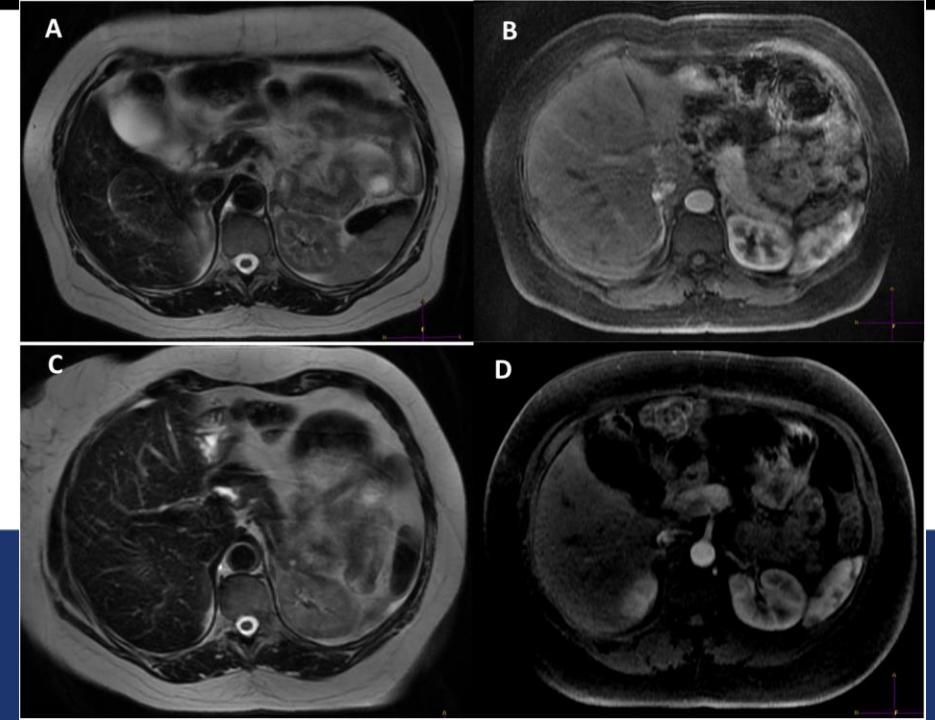
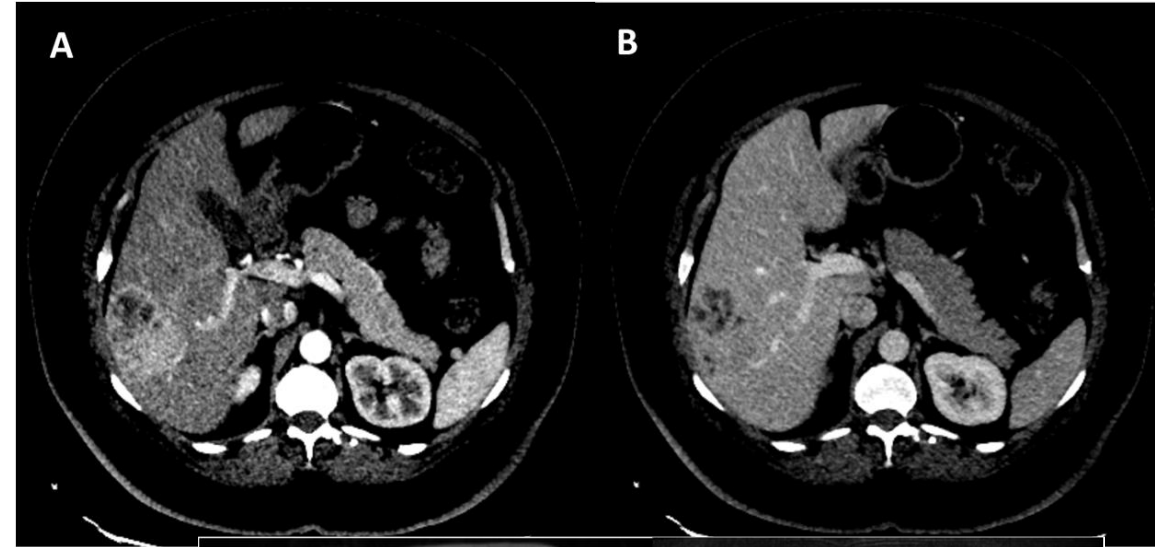
Anna Carolina Batista Dantas ¹, Marco Aurelio Santo Filho ², Vagner Birk Jeismann ³, Luisa Leitão de Faria ⁴, Renan Rosetti Muniz ⁵, Manoel de Souza Rocha ⁶, Paulo Herman ⁷, Marco Aurelio Santo ⁸

Affiliations + expand

PMID: 33766489 DOI: 10.1016/j.orcp.2021.03.008

Abstract

We report the case of an obese woman with a large hepatocellular adenoma (HCA) of 8.0 cm in diameter, followed for 5 years after Roux-en-Y Gastric Bypass, with a complete radiologic remission of the liver mass. Four other cases have been published with HCA regression after bariatric surgery, but none with long-term follow-up. As the association between obesity and HCA has been increasingly described, bariatric surgery should be considered a therapeutic option for stage 2 obese patients.



If severe obesity with liver cancer, what should we do?

What should we do?

- **Multidisciplinary assessment**
- **Diet and Exercise:** Implement a medically supervised weight loss program that includes dietary modification and physical activity tailored to the patient's condition.
- **Pharmacotherapy:** Consider weight loss medications, especially if surgery is not an option, though these should be chosen cautiously due to potential interactions with cancer treatments.
- **Regular Monitoring:** Continuous monitoring of liver function, cancer progression, and weight loss progress.
- **Adjustments:** Make necessary adjustments to the treatment plan based on the patient's response and emerging needs.
- **Psychological Support:** Provide psychological support to help the patient cope with the complexities of managing both severe obesity and liver cancer.

Acknowledgements



Shiliang Dong,
PhD student