



# Robotic Extended Right Hepatectomy for Colorectal Liver Metastasis

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## ABSTRACT

**Background.** Advantages of minimally invasive compared with open hepatobiliary surgery include quicker functional recovery, decreased postoperative length of stay, and decreased postoperative opioid use. As more complex operations are approached in minimally invasive fashion, it is imperative to maintain safety and excellent oncologic outcomes.

**Methods.** In this video, we demonstrate the key principles in performing a safe robotic extended right hepatectomy for colorectal liver metastasis following sound oncologic principles.

**Results.** Key preoperative considerations include (1) early referral to a hepatobiliary surgeon, (2) careful review of cross-sectional imaging to identify the relationship of tumors to major vasculature and any aberrant vascular anatomy, and (3) liver volumetry for every right hepatectomy to determine the need for future liver remnant volume augmentation. Key intraoperative techniques include (1) liberal use of ultrasound before and during transection to determine the relationship of major vasculature to tumor to preserve liver parenchyma without compromising tumor margins, (2) external retraction with vessel loops placed on either side of the transection line as

stay sutures to facilitate parenchymal transection, and (3) a crush clamp technique to safely identify and control crossing vessels while dividing liver parenchyma.

**Conclusions.** With proper preoperative planning and intraoperative use of these techniques, the benefits of a minimally invasive approach can be achieved while maintaining excellence in surgical quality and safety.

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