ASO AUTHOR REFLECTIONS

ASO Author Reflections: Middle Hepatic Vein Anatomy for Safe Dissemination of Laparoscopic Segment 8 Resection

Satoshi Ogiso, MD, PhD, FACS, and Satoru Seo, MD, PhD

Division of Hepato-Biliary-Pancreatic Surgery and Transplantation, Department of Surgery, Graduate School of Medicine, Kyoto University, Kyoto, Japan

PAST

Segment 8 resection achieves both radical and parenchyma-sparing resection for primary and metastatic liver lesions located within segment 8, although the procedure is technically demanding, especially by laparoscopy.¹ During the procedure, identification of the segment 8 Glissonean pedicle (G8) is most difficult because G8 is completely within the parenchyma, and no landmarks are available on the liver surface to locate it. No standard technique has been established for laparoscopic segment 8 resection, which prevents the dissemination of the procedure.

PRESENT

The transfissural Glissonean approach is currently a major technique in laparoscopic segment 8 resection in literature.² An additional technique to use the terminal branch of the middle hepatic vein as a guide to identify G8 within the parenchyma is reported to make the procedure more reliable and reproducible.³ In the report, a constant proximity of the right anterior Glissonean pedicle to the middle hepatic vein and its terminal branch to segment 5⁴ was emphasized.

FUTURE

A few expert centers have reported other techniques for laparoscopic liver resection, including extrahepatic Glissonean approach⁵ and ultrasound-guided staining approach,⁶ although these seem to be more demanding with limited applicability. Further studies are warranted to accumulate data and compare the reproducibility and safety of those techniques. Reunderstanding of the liver anatomy in the laparoscopic caudal view is also important to further disseminate the difficult laparoscopic liver resection.

REFERENCES

1. Ogiso S, Conrad C, Araki K, et al. Laparoscopic transabdominal with transdiaphragmatic access improves resection of difficult posterosuperior liver lesions. *Ann Surg*. 2015;262:358-65.
2. Ome Y, Honda G, Doi M, et al. Laparoscopic anatomic liver resection of segment 8 using intrahepatic Glissonean approach. *J Am Coll Surg*. 2020;230:e13-e20.
3. Ogiso S, Seo S, Ishii T, et al. Middle hepatic vein branch-guided approach for laparoscopic resection of liver segment 8 is simple, reliable, and reproducible. *Ann Surg Oncol*. 2020. <https://doi.org/10.1245/s10434-020-08652-x>.
4. Ogiso S, Okuno M, Shindoh J, et al. Conceptual framework of middle hepatic vein anatomy as a roadmap for safe right hepatectomy. *HPB (Oxford)*. 2019;21:43-50.
5. Berardi G, Wakabayashi G, Igarashi K, et al. Full laparoscopic anatomical segment 8 resection for hepatocellular carcinoma using the Glissonian approach with indocyanine green dye fluorescence. *Ann Surg Oncol*. 2019;26:2577-2578.
6. Aoki T, Koizumi T, Mansour DA, et al. Ultrasound-guided preoperative positive percutaneous indocyanine green fluorescence staining for laparoscopic anatomical liver resection. *J Am Coll Surg*. 2020;230:e7-e12.