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Robotic Completion Radical Cholecystectomy with Fluorescence Guidance

Andrew D. Newton, MD, Timothy E. Newhook, MD, Naruhiko Ikoma, MD, MS, Michael G. White, MD, MSc, Ching-Wei D. Tzeng, MD, Yun Shin Chun, MD, Thomas A. Aloia, MD, MHCM, Jean-Nicolas Vauthey, MD, and Hop S. Tran Cao, MD

Department of Surgical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX

ABSTRACT The application of minimally invasive surgery (MIS) techniques in the treatment of hepatobiliary malignancies offers advantages of shorter length of stay, quicker functional recovery, and decreased need for post-operative opioids. However, MIS completion radical cholecystectomy for incidentally diagnosed gallbladder cancer can be challenging due to a reoperative field and lack of tactile feedback. This video demonstrates the utility of the robotic platform and highlights the ways in which it assists surgeons in overcoming these limitations. These include (1) versatile wristed instruments and excellent visualization that facilitate a thorough regional lymphadenectomy; and (2) built-in fluorescence imaging technology that can be used with intravenous indocyanine green (ICG) to confirm porta hepatis anatomy in a reoperative field. ICG pharmacokinetics enable fluorescence

angiography 15–20 s after ICG injection and fluorescence cholangiography 15–20 min after ICG injection as the dye accumulates in the biliary system. Systematic and intentional application of these techniques allows for the safe performance of robotic completion radical cholecystectomy following sound oncologic principles, with excellent perioperative outcomes.

DISCLOSURES Andrew D. Newton, Timothy E. Newhook, Naruhiko Ikoma, Michael G. White, Ching-Wei D. Tzeng, Yun Shin Chun, Thomas A. Aloia, Jean-Nicolas Vauthey, and Hop S. Tran Cao have no conflicts of interest to disclose.

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H. S. Tran Cao, MD

e-mail: HSTran@mdanderson.org