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Video of the month

Robotic cholecystectomy and transcystic common bile duct exploration with augmented reality glasses and indocyanine green in a patient with a cystic duct cyst



Colecistectomía robótica y exploración transcística de la vía biliar con gafas de realidad aumentada y verde de indocianina en un paciente con un quiste del conducto cístico

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Choledocholithiasis can be treated by minimally invasive surgery in patients with gallbladder in situ.¹ The procedure can be performed by choledochotomy or through the cystic duct, as the transcystic access decreases postoperative morbidity.² Robotic access represents an excellent alternative, especially in complex cases.³⁻⁵ We present the case of a 72-year-old man diagnosed with cholelithiasis, a cystic duct cyst, and an 8-mm choledocholithiasis located in the distal common bile duct. We performed indocyanine green fluorescence-guided robotic cholecystectomy and transcystic exploration of the common bile duct. The assistant surgeon who handled the choledochoscope performed the procedure guided with augmented reality glasses. The operative time was 150 minutes, and the patient was discharged on the first postoperative day.

Conflicts of interest

The authors have no conflicts of interest to disclose.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:<https://doi.org/10.1016/j.ciresp.2022.10.012>.

REFERENCES

- Manes G, Paspatis G, Aabakken L, Anderloni A, Arvanitakis M, Ah-Soune P, et al. Endoscopic management of common bile duct stones: European Society of Gastrointestinal Endoscopy (ESGE) guideline. *Endoscopy*. 2019;51(5):472-91. <http://dx.doi.org/10.1055/a-0862-0346>. Epub 2019 Apr 3. PMID: 30943551.
- Navaratne L, Martinez Isla A. Transductal versus transcystic laparoscopic common bile duct exploration: an institutional review of over four hundred cases. *Surg Endosc*. 2021;35(1):437-48. <http://dx.doi.org/10.1007/s00464-020-07522-7>. Epub 2020 Apr 3. PMID: 32246237.

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3. Alkhamesi NA, Davies WT, Pinto RF, Schlachta CM. Robot-assisted common bile duct exploration as an option for complex choledocholithiasis. *Surg Endosc.* 2013;27(1):263–6. <http://dx.doi.org/10.1007/s00464-012-2431-0>. Epub 2012 Jul 7. PMID: 22773235.
4. Ji WB, Zhao ZM, Dong JH, Wang HG, Lu F, Lu HW. One-stage robotic-assisted laparoscopic cholecystectomy and common bile duct exploration with primary closure in 5 patients. *Surg Laparosc Endosc Percutan Tech.* 2011;21(2):123–6. <http://dx.doi.org/10.1097/SLE.0b013e31820ad553>. PMID: 21471807.
5. Lee KF, Fung A, Lok HT, Fong A, Chong C, Lai P. Robot-assisted minimally invasive procedures for complicated biliary stone disease. *Hepatobiliary Surg Nutr.* 2018;7(3):185–8. <http://dx.doi.org/10.21037/hbsn.2017.05.12>. <https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fdoi.org%2F10.21037%2Fhbsn.2017.05.12&data=05%7C01%7Ccorrections.thomson%40elsevier.com%7C729dc232ed4b4f39d3c408db24576dad%7C9274ee3f94254109a27f9fb15c10675d%7C0%7C0%7C638143730157910229%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6IklhaWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=hm%2Fdi1XBzK7Z45wLypLSIsN%2B6TZKIXMFkf7hzRSYWwQ%3D&reserved=0>.