The case report (with video) by Smerieri et al. (1) of Surgical Endoscopy, concerning the laparoscopic surgical treatment of a hepatic mucinous cystic neoplasm (MCN-H), it lends itself to numerous interesting reflections. The first thought goes to the difficult laparoscopic procedure performed for a large and recurrent mucinous cystic neoplasm (MCN) that highlights the high degree of laparoscopic skills reached by the authors. The most important technical aspects of this surgical procedure that should be stressed are the use of the inflow control by Pringle maneuver that allowed the removal of the neoplasm with contained blood loss despite its large size and the cavitron ultrasonic surgical aspirator (CUSA) that allowed to accurately identify the internal liver anatomy distorted by the voluminous neoplasia. These are two essential technical conditions for safe laparoscopic liver surgery (LLS). It is worth mentioning that a previous laparotomy is not a contraindication to a laparoscopic approach which should be attempted in selected cases. LLS has had a low rate of adoption and a slow but progressive development and has reached, in very few and specific centers in the hands of very highly specialized surgeons, a great potential for treatment of liver diseases with undoubted and proven advantages (2,3). A large number of publications, although these are non-randomized and retrospective studies, have highlighted the benefits of minimally invasive LLS compared with open liver resection, including less pain, decreased mortality rates, reduced length of hospital stay, reduced blood loss, comparable oncologic outcomes and better cosmetic results (4,5). The hope is that LLS will be available to more patients in the future and the liver surgeons will continue their efforts to improve the quality of evidence in association with enhanced training and improvements in the technology applied to LLS to facilitate wider adoption by hepatobiliary surgery centers.

Regarding the MCN of the liver, the World Health Organization (WHO) has distinguished two entities of mucin-producing bile duct tumors: MCN-H and mucin-producing intraductal papillary neoplasm of the bile duct (M-IPNB) (6). MCN-H, a rare tumor with a reported incidence of <5% of all cystic liver tumors, and has no communication with the bile ducts (5). Several authors have reported improved prognosis with complete resection of MCN-H (7,8).

Furthermore, it must be stressed the fact that preoperative diagnosis is very difficult and often confuses the MCN with other hepatic cystic lesions, which, however, provide for other surgical treatments. Echinococcus cyst, hepatocellular carcinoma with necrosis or cyst metastases have to be addressed as differential diagnoses. In the face of a cystic lesion which does not have radiological features typical of simple hepatic cysts or of parasitic cysts, it is necessary to have a high rate of clinical suspicion and radical surgery must be pursued to avoid sub-optimal treatments. The presence of an intra-hepatic cystic lesion, with internal chambers and septa, in a middle-aged woman located in
the left lobe easily directs the suspicion of a MCN-H (9). In this situation the treatment is always surgical even if the cystic lesion is small and asymptomatic and the surgical approach is nowadays laparoscopic and therefore entrusted to centers and surgeons who have this high rate of technical experience. The removal of the cyst must be complete to avoid unavoidable local recurrences and can be achieved with anatomical and non-anatomical formal hepatic resections or, better, it can be more simply enucleated with a hepatic surgery (1,10,11). In the latter case, the fundamental technical aspect is that the cyst is enucleated intact without microperforations of its wall with liquid leakage and even less incompletely resected leaving small cystic wall portions in contact with the cut surface of the liver.

The case in particular immediately highlights the fact that mucinous neoplasms, locally malignant and that never metastasize outside the liver, if they are treated in an incomplete form tend to relapse locally and universally. It should also be pointed out that MCN of the liver are very rare and the rate of experience for a correct radiological classification and subsequent appropriate surgical management may not be present even in hepatic surgery centers with extensive experience.

Moreover, benign liver lesions are commonly observed in young females. It has been reported that females <40 years of age constituted 80% of patients with benign liver tumors and the cosmetics results are important concerns for females after surgery (12). These aspects taken together are a reason to consider LLS for benign hepatic tumors or low-grade potential liver malignancy. The number of laparoscopic liver resections (LLR) being performed has been increasing, together with improvements in surgical techniques and surgical instruments. The second International Consensus Conference on LLS held in 2014 indicated that laparoscopic approaches have demonstrated superiority in selected patients compared with open procedures, particularly for minor liver resections (13). The third International Consensus Conference on LLS held in 2017 (14) reported that operative trends for benign disease is increasing and has lower intraoperative blood loss, frequency of complications, postoperative analgesic requirements, time to oral intake and shorter hospital stay without considering the cosmetic advantages which are obvious.

To date there is no doubt that benign liver tumors are a good indication for LLS. This is also supported by the Southampton Guidelines (14) which affirm with a good level of evidence that the LLS when performed by experienced laparoscopic liver surgeons offers significant benefits and should be considered standard practice for such lesions. Moreover, this indication can be reasonably extended also to MCN-H which being low-grade malignancy may be removed by LLS providing a good prognosis.

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Footnote
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