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From single-port access to laparoendoscopic single-site cholecystectomy

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Dear Sir,

We read with interest the report of Langwieler et al. [1] on single-port access (SPA) cholecystectomy. The authors describe their experience with SPA cholecystectomy (14 cases) using the newly available multiport trocar (ASC Triport, Advanced Surgical Concepts, Bray, Ireland) and semiflexible endoscope (Olympus, Hamburg, Germany) with excellent results. We comment on some issues raised by this report, especially the use of a multiport approach and instrumentation, perception of the transvaginal route, and the importance of intraoperative cholangiography.

Whereas Langwieler and colleagues describe their results using the multiport trocar, ASC Triport, we confirm their report on the important technique of SPA or laparoendoscopic single-site surgery (LESS) in terms of this adjunct's feasibility and safety.

To date, we have completed a series of 34 LESS cholecystectomies, with a median follow-up period of 8 months. We have reported our preliminary experience using two parallel umbilical ports (10 and 5 mm) with a sling suture for exposition [2]. The last 16 cases, performed using the multiport trocar, were associated with a decrease in operative time and a subjective sense of improved feasibility and security. Moreover, the use of a single multiport trocar instead of a multiple 5-mm trocar in the umbilical incision avoided port conflict.

Another advantage of the ASC TriPort, not mentioned in the report, is that it may serve as a wound protector for extraction of the gallbladder at the end of the procedure with the removal of the valve part of the port. This may influence the cost of LESS cholecystectomy, which has not favored this approach over standard laparoscopy.

Due to the limited space with only a single port, the hands of the operator and assistant may disable each other, as noted by the authors. For this reason, we agree that the use of instruments differing in length may in part solve this issue. However, the use of a semiflexible or curved instruments could improve this issue and probably will represent the solution to this problem in the future.

The rate of decline in the vaginal approach to cholecystectomy reported by Langwieler and colleagues confirms a previous European report. As noted by Slim et al. [3] in a French survey, the transvaginal approach for cholecystectomy is not favored by women, with 94% refusing it. This refusal is retrieved in a survey we conducted in Switzerland, in which 86% favored transumbilical SPA cholecystectomy, with 9% choosing standard laparoscopy and 5% opting for natural orifice translumenal endoscopic surgery (NOTES) [4, 5].

It should be noted that the transvaginal approach necessitates a culdotomy, implicating avoidance of intercourse for a nonnegligible period. This delay varies from 15 days to 6 weeks depending on the transvaginal NOTES protocol [6–8]. The sexual abstinence recommended by gynecologists is 3–4 weeks [9–11]. With regard to this issue, transumbilical SPA laparoscopy may be advantageous because no sexual abstinence is needed, and the return to normal social life is quicker, especially for the young sexually active woman. Furthermore, whereas the transvaginal approach can be offered only to women, transumbilical SPA may be offered to all patients. This is of importance because the cosmetic issue applies not only to female patients [12, 13].

Recently, the possible higher rates for umbilical seroma and incisional hernia after transumbilical LESS have been

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discussed among experts and opponents to LESS. In our series, which admittedly has had only a short follow-up time (8 months), no umbilical complications (seroma or incisional hernia) have been recorded at this writing. This may be due at least in part to the use of a single fascial incision, which is closed during conventional laparoscopy. The avoidance of multiple fascial perforations using multiple parallel umbilical trocars, as described by some teams, creates great traction forces on the fascial layers, weakening them [14].

It seems that Langwieler et al. [1] did not routinely perform intraoperative cholangiography in their series. We believe that intraoperative cholangiography should be performed, or at least attempted, in all LESS cholecystectomies to exclude the potential for a biliary tract lesion [2]. This is important because the risk of such a lesion may be higher with this new approach, as noted by Connor [15] in History Should Not Be Allowed to Repeat, referring to the increase in biliary tract complication and morbidity at the introduction of laparoscopic cholecystectomy [2, 15].

In conclusion, recent instrument and multiport trocar developments are improving the feasibility and probably the safety of transumbilical laparoendoscopic single-site LESS cholecystectomy, which offers excellent cosmetic results and shorter postoperative recovery than the transvaginal approach, especially in terms of sexuality. The low rate for acceptance of the transvaginal route in Western countries should influence us to pursue the development of LESS cholecystectomy and to conduct randomized trials comparing the potential advantage and risk balance of this approach with those of standard multiport laparoscopic cholecystectomy.

References

1. Langwieler T, Nimmesgern T, Back M (2009) Single-port access in laparoscopic cholecystectomy. Surg Endosc. March 5, [Epub ahead of print]
2. Bucher P, Pugin F, Buchs N, Ostermann S, Charara F, Morel P (2008) Single-port-access laparoscopic cholecystectomy (with video). World J Surg. December 30, [Epub ahead of print]
3. Slim K, Launay-Savary M (2008) NOTES: the debates continues. Surg Endosc. July 12, [Epub ahead of print]
4. Bucher P, Ostermann S, Pugin F, Morel P (2009) E-NOTES appendectomy versus transvaginal appendectomy: similar cosmetic results but shorter complete recovery? Surg Endosc 23:916
5. Bucher P, Pugin F, Morel P, Hagen M (2008) Scarless surgery: myth or reality through NOTES? Rev Med Suisse 4:1550–1552
6. Palanivelu C, Rajan P, Ranqarajan M, Parthasarathi R, Senthilnathan P, Praveenraj P (2008) Transumbilical flexible endoscopic cholecystectomy in humans: first feasibility study using hybrid technique. Endoscopy 40:231–248
7. Zorron R, Maggioni L, Pombo L, Oliveira A, Carvalho G, Filgueiras M (2008) NOTES transvaginal cholecystectomy: preliminary clinical application. Surg Endosc 22:542–547
8. Zornig C, Mofid H, Emmermann A, Alm M, Von Waldenfels H, Felixmüller C (2008) Scarless cholecystectomy with combined transvaginal and transumbilical approach in a series of 20 patients. Surg Endosc. April 9, [Epub ahead of print]
9. Palmer R (1984) Why the laparoscopic route for tubal sterilization? Contracept Fertil Sex 12:931–933
10. Amias A (1975) Sexual life after gynaecological operation—II. Br Med J 21:680–681
11. Newton J, Mc Cormack J (1990) Female sterilization: a review of methods, morbidity, failure rates, and medicolegal aspects. Contemp Rev Obstet Gynaecol 2:176–182
12. Varadarajulu S, Tamhane A, Drelichman E (2008) Patient perception of natural orifice translumenal endoscopic surgery as a technique for cholecystectomy. Gastrointest Endosc 67:854–860
13. Ng W (2006) Optimal cosmetic results without increased operative risk. Surg Endosc 20:1332–1333
14. Tacchino R, Greco F, Matera D (2008) Single-incision laparoscopic cholecystectomy: surgery without a visible scar. Surg Endosc. September 25, [Epub ahead of print]
15. Connor S (2009) Single-port access cholecystectomy: history should not be allowed to repeat. World J Surg. March 6, [Epub ahead of print]