LAPAROSCOPIC MYOMECTOMY

Ming-Shyen Yen[1,2], Kuan-Chong Chao[1,2], Peng-Hui Wang[1,2,3]*

[1]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, [2]Department of Obstetrics and Gynecology, National Yang-Ming University School of Medicine, Taipei, and [3]Department of Obstetrics and Gynecology, National Yang-Ming University Hospital, Ilan, Taiwan.

To the Editor:

Uterine leiomyomas, such as fibroids and myomas, are the most common gynecological tumors in women of a reproductive age, even though the majority of such lesions are asymptomatic [1]. However, there is no doubt that symptoms directly attributable to these benign tumors represent the most common reasons for laparotomy in non-pregnant women [2]. In past decades, hysterectomy was seen almost as a panacea for uterine leiomyomas [3]. More recently, attention has focused on the development of pharmaceutical agents and less-invasive procedures [4], which are frequently designed to retain the uterus [5]. Of these, myomectomy may be a choice for symptomatic uterine leiomyomas if fertility retention is desired [6]. The surgical mode of access usually employed in myomectomy is traditional exploratory laparotomy or a modification such as mini-laparotomy or ultra-mini laparotomy (UMLT). Laparoscopy, a combination of laparoscopy and mini-laparotomy, vaginal surgery, and hysteroscopic myomectomy have recently been presented as valid alternatives [7]. The question "What is the best way to complete myomectomy, when women need myomectomy, for symptom control and preservation of future fertility?" has long been unanswered, and there are very few head-to-head, case-controlled, or cohort studies in the literature comparing the different approaches to myomectomy [4,6–8].

In the last issue, Professor Lee and Dr Wang provided an excellent review of laparoscopic myomectomy (LM) [9]. Although the outcome after LM has been shown, the following description may provide additional information. The relationship between leiomyomas and subfertility is not clear [7]. Fertility outcome might be varied with leiomyomas in different locations and might also be affected by the treatment [10]. For example, submucosal leiomyomas may impair fertility outcomes and removal seems to confer a benefit; subserosal leiomyomas do not affect fertility outcomes and removal does not confer benefit; intramural leiomyomas appear to decrease fertility but the results of therapy are unclear [11]. Based on the review [9], the reproductive outcome after LM is absent. In addition, the risk of uterine cavity opening and the strategy to repair the uterine cavity opening are not mentioned. Readers would likely learn more from a future review if the authors would like to provide a subsequent paper addressing the LM method. Although Lee and Wang have summarized nearly all published cases of uterine rupture after LM and found that uterine rupture can occur irrespective of the type of removed fibroid (intramural or subserosal), the number of fibroids removed (single or multiple), and the postoperative interval (short-term or long-term) [9], the authors struggled to draw any definite conclusions from these cases. We completely agree with this opinion. However, it is still reasonable to suppose that uterine rupture in women after myomectomy might be related to the uterine cavity opening, inadequate repair of a uterine defect, and/or over-treatment of a uterine defect (especially by coagulation through a unipolar or bipolar coagulator, possibly resulting in more trauma to the uterus). We suppose that the risk of pregnant uterine rupture in cases of myomectomy with a uterine cavity opening might be similar to that of a classical cesarean section [12] although there is still no direct comparison between the two and we cannot provide any evidence to support this hypothesis [13]. The authors are able to complete total LM (TLM) easily [9], but the authors also agree with the concept that repair of the uterine defect is a relatively difficult task during TLM and is considered the most crucial stage of the procedure [9]. The authors

*Correspondence to: Dr Peng-Hui Wang, Department of Obstetrics and Gynecology, National Yang-Ming University, Taipei Veterans General Hospital and National Yang-Ming University Hospital, Taipei, Taiwan.
E-mail: phwang@vghtpe.gov.tw or phwang@ym.edu.tw

further emphasize that a skillful laparoscopic suturing technique is indispensable for the close reapproximation of the uterine defect and this procedure depends not only on the highly skilled suturing technique of the surgeon but also on the proficient collaboration of the surgical assistant [9]. Hence, TLM is still considered to be a relatively difficult laparoscopic procedure. To overcome the difficulty, we favor using UMLT incision, which is also mentioned by the authors (laparoscopic-assisted abdominal myomectomy) as a rescue method to repair the defect in the uterine cavity, even when we perform LM for women with symptomatic uterine leiomyomas but with a complicated uterine cavity opening. The suture with a single layer or multiple layers can be made easily using conventional techniques through the UMLT incision [14]. Myomectomy through either pure laparoscopy or laparoscopically-aided UMLT showed similar therapeutic outcomes, but UMLT may be a more acceptable surgical approach due to its technical advantages and fewer limitations [7].

Finally, the problem of whether the uterine incision and the suture created by LM is as strong as those made by conventional laparotomy is still a concern, and bleeding is also difficult to control and sometimes necessitates advancing to abdominal myomectomy by many gynecologists. Furthermore, we should accept the concept that LM is a relatively new and unfamiliar manual skill and requires lengthy training, with uteroperitoneal fistula formation and uterine dehiscence, even rupture, still possible risks after LM [4]. Less invasive and easier techniques [7] that do not compromise therapeutic outcomes and have little influence on fertility or even improve the outcome of future fertility are advantageous. When dealing with patients with symptomatic uterine myomas, all efforts should be made to provide adequate symptom control, minimize recurrence, increase fertility outcomes, and avoid potential life-threatening situations, such as uterine rupture. If the patients have been well-informed, the modern trend favoring laparoscopy in place of laparotomy in the majority of gynecological surgeries is welcome [15] since a recent publication evaluating the reproductive outcomes of a comparison of abdominal myomectomy and LM hinted that LM provides the best benefits in fertile patients with symptomatic leiomyomas [8].

Acknowledgments

This article was supported in part by grants from Taipei Veterans General Hospital (V98F-009 and V99F-014).

References

1. Cheng MH, Wang PH. Uterine myoma: A condition amendable to medical therapy? *Expert Opin Emerg Drugs* 2008;13: 119–33.
2. Practice Committee of American Society for Reproductive Medicine in collaboration with Society of Reproductive Surgeons. Myomas and reproductive function. *Fertil Steril* 2008;90:S125–30.
3. Taylor E, Gomel V. The uterus and fertility. *Fertil Steril* 2008; 89:1–26.
4. Wen KC, Sung PL, Chao KC, Lee WL, Liu WM, Wang PH. A prospective short-term evaluation of uterine leiomyomas treated by myomectomy through conventional laparotomy or ultramini-laparotomy. *Fertil Steril* 2008;90:2361–6.
5. Wang PH, Lee WL, Cheng MH, Yen MS, Chao KC, Chao HT. Use of a gonadotropin-releasing hormone agonist to manage perimenopausal women with symptomatic uterine myomas. *Taiwan J Obstet Gynecol* 2009;48:133–7.
6. Wang PH, Liu WM, Fuh JL, Chao HT, Yuan CC, Chao KC. Comparison of ultramini-laparotomy for myomectomy through midline vertical incision or modified Pfannenstiel incision—a prospective short-term follow-up. *Fertil Steril* 2009;91:1945–51.
7. Wang PH, Liu WM, Fuh JL, Chao HT, Yuan CC, Chao KC. Symptomatic myoma treated with laparoscopic uterine vessel occlusion and subsequent immediate myomectomy—which is the optimal surgical approach? *Fertil Steril* 2009; 92:762–9.
8. Palomba S, Zupi E, Falbo A, et al. A multicenter randomized, controlled study comparing laparoscopic versus minilaparotomic myomectomy: reproductive outcomes. *Fertil Steril* 2007;88:933–41.
9. Lee CL, Wang CJ. Laparoscopic myomectomy. *Taiwan J Obstet Gynecol* 2009;48:335–42.
10. Klatsky PC, Tran ND, Caughey AB, Fujimoto VY. Fibroids and reproductive outcomes: a systematic literature review from conception to delivery. *Am J Obstet Gynecol* 2008;198: 357–66.
11. Pritts EA, Parker WH, Olive DL. Fibroids and infertility: an updated systematic review of the evidence. *Fertil Steril* 2009;91:1215–23.
12. Wang PH, Su WH, Sheu BC, Liu WM. Adenomyosis and its variance: adenomyoma and female fertility. *Taiwan J Obstet Gynecol* 2009;48:232–8.
13. Wang PH, Liu WM, Fuh JL, Cheng MH, Chao HT. Comparison of surgery alone and combined surgical-medical treatment in the management of symptomatic uterine adenomyoma. *Fertil Steril* 2009;92:876–85.
14. Wen KC, Chen YJ, Sun BL, Wang PH. Comparing uterine fibroids treated by myomectomy through traditional laparotomy (LT) and two modified approaches: ultraminilaparotomy (UMLT) and laparoscopically-assisted ultraminilaparotomy (LA-UMLT). *Am J Obstet Gynecol* 2010;202: 144.e1–8.
15. Wang PH, Chen YJ, Horng HC. Is it possible to use a single ancillary trocar to finish laparoscopic cystectomy? *Taiwan J Obstet Gynecol* 2009;48:333–4.