Interstitial pregnancy: cornuostomy or wedge resection?

Ling-Yu Jiang[a,b], Peng-Hui Wang[a,b,c,d,*]

[a]Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, Taipei, Taiwan, ROC; [b]Department of Obstetrics and Gynecology, National Yang-Ming University, Taipei, Taiwan, ROC; [c]Institute of Clinical Medicine, National Yang-Ming University, Taipei, Taiwan, ROC; [d]Department of Medical Research, China Medical University Hospital, Taichung, Taiwan, ROC

Ectopic pregnancy, defined as a pregnancy that occurs outside the normal uterine cavity, for example, such as the tubal, interstitial, cornual, cervical, cesarean scar, ovarian, or abdominal location, is one of the most common emergencies and a potential life-threatening situation occurring in women during the reproductive age.[1,2] Incidence of ectopic pregnancy has been reported to be progressively increased in the recent decades, and the chief reasons may be partly explained by increased use of assisted reproductive technologies, increase in cesarean section rates worldwide, and sequelae of pelvic inflammatory diseases.[3–5] It is vital to patient safety by timely diagnosis, which includes a high level of suspicion along with expertise in ultrasound and prompt management either by medical treatment in the early stages, surgical management, or even combination.[3,6] All are frequently used in the modern clinical practice with great successful rates.[7] With a significant improvement of technology and instruments, minimal invasive surgery, including laparoscopy and/or hysteroscopy is considered as a treatment of choice when the patients with various kinds of gynecological diseases such as benign ovarian disease, uterine fibroid, endometriosis, and ectopic pregnancy need surgical treatment, since evidence supports its effectiveness and rapid recovery.[8] We are glad to learn that Dr. Lin group have used the laparoscopic surgery in the management of women with interstitial pregnancy, which has been published in the February issue of the *Journal of Chinese Medical Association*.[9] The authors compared the outcomes of these patients who were treated with difference procedures, including 14 patients who underwent laparoscopic cornuostomy and the remaining 26 patients who underwent laparoscopic wedge resection.[9] The results showed that women treated with laparoscopic cornuostomy not only had a shorter operating time but also a better future pregnancy outcome than women treated with laparoscopic wedge resection did.[9] Therefore, the authors recommended that the use of laparoscopic cornuostomy might be a better surgical approach in the management of women with interstitial pregnancy.[9] We congratulated the success of this publication. Some items of the current article should be discussed.

First, the terms such as "interstitial" and "cornual" pregnancy are frequently used synonymously.[10] The item of "angular" pregnancy is also described and sometimes it is confusing. In fact, the diagnosis of this type of ectopic pregnancy (interstitial, cornual, and angular) might be based on their operative appearance, relying on the gross external appearance of the uterus during the laparoscopic examination, which is believed as a gold-standard diagnostic tool for ectopic pregnancy.[10] However, although laparoscopy is considered as a minimal invasive procedure, it is still invasive when compared with image examination or hysteroscopic approach. In 1992, there were three criteria of the ultrasound proposed to make a diagnosis of interstitial pregnancy with sensitivity of 40% and specificity of 88% to 93%: (1) an empty uterine cavity; (2) a chorionic sac found separated (>1 cm) from the lateral edge of the uterine cavity; and (3) a thin (<5 mm) myometrial layer surrounding the chorionic sac.[10] In 1993, modification of the above-mentioned criteria described the "interstitial line sign" with the sensitivity rate of 80% and specificity rate of 98%, which showed an echogenic line in the cornual region of the uterus bordering the midportion of the gestational sac, though to represent the interstitial portion of the Fallopian tube in small lesion and the endometrium in bigger lesion.[2,10,11] The current study was conducted to review all interstitial pregnancy cases confirmed by the laparoscopic–pathological examination.[9] There is no doubt about the confirmation of diagnosis of interstitial pregnancy, but the authors still used the term of laparoscopic "cornuostomy" in the management of women with "interstitial" pregnancy, suggesting that synonymous use of "interstitial" or "cornual" pregnancy is acceptable.

Second, the management of interstitial pregnancy should pay much attention, based on a 2-fold increase of mortality compared with other tubal ectopic pregnancy, because this type of ectopic pregnancy often involves the damage of the uterine vessels, resulting in heavy bleeding especially for those women with ruptured interstitial pregnancy.[10] Medical treatment, especially the use of methotrexate (most commonly given by intramuscular route) or image- or laparoscopy-guided percutaneous or direct administration of methotrexate, potassium chloride, or etoposide into the ectopic gestational sac has been well-documented for the treatment of interstitial pregnancy,[10,12] and the successful medical management of the early interstitial pregnancy is always based on the early diagnosis.[13] Besides medical treatment, the least invasive interventions can be considered as the current standard of care.

Third, the issue about the use of which type of surgery to be performed is interesting. Based on the findings, including

*Address correspondence: Dr. Peng-Hui Wang, Department of Obstetrics and Gynecology, Taipei Veterans General Hospital, 201, Section 2, Shi-Pai Road, Taipei 112, Taiwan, ROC. E-mail addresses: phwang@vghtpe.gov.tw or pongpongwang@gmail.com (P.-H. Wang).

Conflicts of interest: The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article.

Journal of Chinese Medical Association. (2019) 82: 167-168.

Received January 14, 2019; accepted January 15, 2019.

doi: 10.1097/JCMA.0000000000000072.

shorter operating time and higher subsequent pregnancy probability of the patients,[8] the authors favored the use of laparoscopic cornuostomy in place of the laparoscopic wedge resection in the management of the patients with interstitial pregnancy. In fact, Dr. Liao's group has attempted to evaluate the postoperative outcome of women with interstitial pregnancy who underwent cornual wedge resection and found that the incidence of subsequent uterine rupture and dehiscence was high (30%) in those patients who achieved subsequent pregnancy, raising a question—which is the better choice of both techniques laparoscopic cornual resection and laparoscopic cornuotomy employed in the management of women with interstitial pregnancy, as both are acceptable for interstitial pregnancy.[14] Dr. Lee's group from Korea compared the clinical efficacy and safety of the above-mentioned procedures and 75 patients were included.[15] The results showed that both procedures were acceptable because of the similar complication rate and similar incidence of persistent interstitial pregnancy. This study also showed the less operative time in the laparoscopic cornuotomy group compared with that in the laparoscopic wedge resection group.[15] However, evidence is still not strong to support the suggestion that the use of laparoscopic cornuotomy might be a better choice in the management of women with interstitial pregnancy than laparoscopic wedge resection is. We are happy to say that Dr. Chen's study might improve our knowledge and help us to make a decision to select the better approach in the management of women with interstitial pregnancy, especially for those women who have a strong desire to attempt to get future pregnancy. Of course, more evidence is welcome to confirm this suggestion.

ACKNOWLEDGMENTS

This study is partly supported by grants from the Ministry of Science and Technology, Executive Yuan (MOST 106-2314-B-075-061-MY3), and Taipei Veterans General Hospital (V106D23-001-MY2-1; V107C-136; and V107A-022).

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