Uterine suspension using I. Abdelazim sacrohysteropexy technique for treatment of uterine prolapse: Case series

Ibrahim A. Abdelazim1,2, Svetlana Shikanova3, Bakt Karimova3, Gulmira Zhurabekova4, Mukhit Sarsembayev3, Tatyana Starchenko3

1Department of Obstetrics and Gynecology, Ain Shams University, Cairo, Egypt, 2Department of Obstetrics and Gynecology, Ahmadi Hospital, Kuwait Oil Company, Ahmadi, Kuwait, Departments of 3Obstetrics and Gynecology No. 1 and 4Normal and Topographical Anatomy, Marat Ospanov, West Kazakhstan State Medical University, Aktobe, Kazakhstan

Abstract

Surgical treatment of uterine prolapse in women who wishes to preserve her uterus remains a major surgical challenge. This case series describes a new surgical technique for uterine suspension in women who wish to preserve their uteri, using the Mersilene tape as an artificial uterosacral ligament to suspend the uterus to the sacral promontory. Four women with genital prolapse (two with stage 1 uterine prolapse and two with stage 2 uterine prolapse and stage 1 vaginal walls prolapse) who requested a uterine conserving procedure were offered I. Abdelazim sacrohysteropexy technique as a new surgical option for treatment of the uterine prolapse. This surgical technique is formed of three basic steps: (1) exposure of the anterior longitudinal ligament over the sacral promontory and exposure of the uterosacral ligaments on the back of the uterine cervix; (2) fixation of the Mersilene tape as Y-shaped artificial uterosacral ligament extended from the sacral promontory to the back of the uterine cervix; and (3) closure of the incised visceral peritoneum over the artificial Y-shaped uterosacral ligament. The mean operative duration of I. Abdelazim sacrohysteropexy technique was 50.5 ± 8.4 min and the mean estimated blood loss was 480 ± 67.8 ml. No intraoperative or postoperative complications or recurrence of the uterine prolapse were recorded in the studied cases. I. Abdelazim sacrohysteropexy technique is an effective uterine suspension technique for treatment of uterine prolapse in women who wish to preserve their uteri, using the Mersilene tape as an artificial uterosacral ligament to suspend the uterus to the sacral promontory.

Keywords: I. Abdelazim, prolapse, sacrohysteropexy, technique, uterine

Introduction

The surgical treatment of uterine prolapse in women who wish to preserve their uteri remains a major surgical challenge to the pelvic floor surgeon.11 This report describes a new surgical technique (I. Abdelazim sacrohysteropexy technique) for uterine suspension to the sacral promontory in women who wish to preserve their uteri.

Cases Series

Four women with 36.25 years ±1.7 mean age, 4.75 ± 0.95 mean parity, and genital prolapse (two with stage 1 uterine prolapse and two with stage 2 uterine and stage 1 vaginal walls prolapse according to simplified pelvic organ prolapse quantification)21 were included in this report which conducted at Ahmadi Hospital, Kuwait Oil Company, Kuwait, over the last 3 years. Studied women requested a uterine-conserving procedure and offered the new surgical technique after departmental approval and preoperative anesthetic consultation. They signed a written consent explaining...
Abdelazim, et al.: Gynecological surgery for uterine prolapse

I. Abdelazim Sacrohysteropexy Technique

The procedure was performed under general anesthesia, while the patient was in supine position. After opening of the anterior abdominal wall in layers, the unique I. Abdelazim sacrohysteropexy technique is formed of three basic steps:

1. Exposure of the anterior longitudinal ligament over the sacral promontory and the uterosacral ligaments on the back of the uterine cervix: Through incision of the peritoneal covering the sacral promontory, pouch of Douglas, and the back of the uterine cervix (to reach the level of the uterosacral ligaments’ insertion) were exposed.

2. Fixation of the Mersilene tape as Y-shaped artificial uterosacral ligament extended from the sacral promontory to the back of the uterine cervix: A 5-mm Mersilene tape [Figure 1] on a 48-mm round needle was placed through the anterior longitudinal ligament covering the sacral promontory in the midline. Then, the two limbs of the Mersilene tape were sutured together using nonabsorbable silk stitches forming the apex of the Y-shaped artificial uterosacral ligament. From the end of the apex of the Y-shaped artificial uterosacral ligament, the two limbs of the Mersilene tape were left unsutured and were fixed to the back of the uterine cervix on both sides of the midline using nonabsorbable silk stitches. Finally, the Mersilene tape appeared like new, artificial Y-shaped ligament replacing the normal uterosacral ligaments where the apex of the Y was fixed at the sacral promontory and the two limbs of the Y were at the back of the uterine cervix on both sides of the midline [Figure 2].

3. Closure of the peritoneum incised in step 1 over the artificial Y-shaped uterosacral ligament: This step was to make the Y-shaped Mersilene tape completely retroperitoneal.

This surgical technique was described for the first time by the corresponding author of this article I. Abdelazim and was named as I. Abdelazim sacrohysteropexy technique because of its unique advantages: (1) anatomical support of the uterus in the midline like the natural uterosacral ligaments; (2) midline insertion of the artificial Y-shaped ligament ensures no entrapment of the pelvic colon (entrapment can occur if the Mersilene tape inserted bilaterally on both sides of the pelvic colon);[3] (3) the Mersilene tape can be easily incised and the hysterectomy can be done if required in the future;[4] and (4) the unique I. Abdelazim sacrohysteropexy technique can correct the uterine as well as stage 1 vaginal walls prolapse at the same time.

The mean duration of the unique I. Abdelazim sacrohysteropexy technique was 50.5 ± 8.4 min and the mean estimated blood loss was 480 ± 67.8 ml;[3] no intraoperative or postoperative complications were recorded in the studied cases. No recurrence of the prolapse was recorded in the studied cases after 3 years of follow-up.[2]

Discussion

Although the female genital prolapse is a common problem in gynecology, the surgically treated women for genital prolapse constitute only 11%.[4]

Previously, vaginal hysterectomy was the standard surgical treatment for the uterine prolapse.[5] Nowadays, several operations have been proposed for treatment of uterine prolapse,[1] and, currently, open[6] versus laparoscopic uterine suspension techniques to the sacral promontory using synthetic mesh have been reported.[3]

A retrospective study reported recurrence of prolapse in two women after abdominal sacrohysteropexy.[7]

Sacrospinous hysteropexy has been compared with vaginal hysterectomy and sacrospinous fixation of the vaginal vault with 75% success rate.[8]

Bradley et al. concluded that there is a higher reoperation rate after sacral hysteropexy and a higher mesh exposure rate for hysterectomy with sacral colpopexy,[9] and Krause et al. reported 12% of symptomatic prolapse during follow-up after laparoscopic hysteropexy using nonabsorbable sutures.[10]

Figure 1: Mersilene tape used in the case series

Figure 2: Diagram of the I. Abdelazim sacrohysteropexy technique
Maher et al. reported an objective success rate of 79% during follow-up after laparoscopic hysteropexy and Sracchiioli et al. reported no recurrence of prolapse after laparoscopic sacrohysteropexy.

Recently, Gutman et al. concluded that laparoscopic sacral hysteropexy and vaginal mesh hysteropexy had similar 1-year cure rates and high satisfaction. In addition, Nair et al. concluded that laparoscopic hysteropexy was associated with good anatomic cure rates (>90%) and low complications rates. Nair et al. also concluded that laparoscopic hysteropexy is a surgical alternative for women requesting surgical correction of the genital prolapse and conservation of the uterus.

One of the potential problems of using a piece of mesh is the potential difficulty of removing the uterus in the future if hysterectomy required.

Laparoscopic uterine suspension using Mersilene tape was reported by Cutner et al. without any intraoperative complications.

This report represents the case series of four women with genital prolapse who refused hysterectomy treated by I. Abdelazim sacrohysteropexy technique with their follow-up over 3 years without any intraoperative or postoperative complications or recurrence of the prolapse, and large studies are going on to confirm the advantages of the newly prescribed surgical technique.

**Conclusion**

I. Abdelazim sacrohysteropexy technique is an effective uterine suspension technique for treatment of uterine prolapse in women who wish to preserve their uteri, using the Mersilene tape as an artificial uterosacral ligament to suspend the uterus to the sacral promontery.

**Author’s contribution**

IAA is responsible for study design, surgical procedures, and submission for publication. SS is responsible for study idea, intellectual content, and update of references. BK is responsible for Microsoft editing and final revision before publication. GZ is responsible for Microsoft editing, update of references, and final revision before publication. MS and TS are responsible for intellectual content and update of references.

**Acknowledgments**

The authors are grateful to the studied women for their agreement and consent to participate in this case series (signed consent taken from the studied women).

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Cutner A, Kearney R, Vashisht A. Laparoscopic uterine sling suspension: A new technique of uterine suspension in women desiring surgical management of uterine prolapse with uterine conservation. BJOG 2007;114:1159-62.

2. Swift S, Morris S, McKinney V, Freeman R, Petri E, Scotti RJ, et al. Validation of a simplified technique for using the POPQ pelvic organ prolapse classification system. Int Urogynecol J Pelvic Floor Dysfunct 2006;17:615-20.

3. Yehia AH, Koleib MH, Abdelazim IA, Attik A. Tranexamic acid reduces blood loss during and after cesarean section: A double blinded, randomized, controlled trial. Asian Pac J Reprod 2014;3:53-6.

4. Olsen AL, Smith VJ, Bergstrom JO, Colling JC, Clark AL. Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence. Obstet Gynecol 1997;89:501-6.

5. Diwan A, Rardin CR, Strohsnitter WC, Weld A, Rosenblatt P, Kohli N. Laparoscopic uterosacral ligament uterine suspension compared with vaginal hysterectomy with vaginal vault suspension for uterovaginal prolapse. Int Urogynecol J Pelvic Floor Dysfunct 2006;17:79-83.

6. Leroy E, Stanton SL. Sacrohysteropexy with synthetic mesh for the management of uterovaginal prolapse. BJOG 2001;108:629-33.

7. Barranger E, Fritel X, Pigne A. Abdominal sacrohysteropexy in young women with uterovaginal prolapse: Long-term follow-up. Am J Obstet Gynecol 2003;189:1245-50.

8. Maher CF, Cary MP, Slack MC, Murray CJ, Milligan M, Schluter P. Uterine preservation or hysterectomy at sacrospinous colpopexy for uterovaginal prolapse? Int Urogynecol J Pelvic Floor Dysfunct 2001;12:381-4.

9. Bradley S, Gutman RE, Richter LA. Hysteropexy: An option for the repair of pelvic organ prolapse. Curr Urol Rep 2018;19:15.

10. Krause HG, Goh JT, Sloane K, Higgs P, Carey MP. Laparoscopic sacral suture hysteropexy for uterine prolapse. Int Urogynecol J Pelvic Floor Dysfunct 2006;17:378-81.

11. Maher CF, Carey MP, Murray CJ. Laparoscopic suture hysteropexy for uterine prolapse. Obstet Gynecol 2001;97:1010-14.

12. Seracchiioli R, Hourcabie JA, Vianello F, Govoni F, Piojasti P, Venturoli S. Laparoscopic treatment of pelvic floor defects in women of reproductive age. J Am Assoc Gynecol Laparosc 2004;11:332-5.

13. Gutman RE, Rardin CR, Sokol EB, Matthews C, Park AJ, Iglesia CB, et al. Vaginal and laparoscopic mesh hysteropexy for uterovaginal prolapse: A parallel cohort study. Am J Obstet Gynecol 2017;216:38.e1-11.

14. Nair R, Nikolopoulos KL, Clayton LS. Clinical outcomes in women undergoing laparoscopic hysteropexy: A systematic review. Eur J Obstet Gynecol Reprod Biol 2017;208:71-80.