Total Laparoscopic Management of Fallopian Tube Prolapse

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Abstract
Background: Fallopian tube prolapse is an infrequent complication of hysterectomy. Surgical management has been described by vaginal, abdominal, and combined approaches. More recently, laparoscopic management has been advocated generally in combination with vaginal surgery or in cases in which an initial vaginal operation was unsuccessful.

Case: We report our totally laparoscopic technique for initial management of this condition in a 32-year-old woman who presented with lower abdominal cramping pain, vaginal spotting, and dyspareunia 1 year after vaginal hysterectomy. A diagnosis of tubo-vaginal prolapse was made based on physical examination and ultrasound. An outpatient laparoscopic salpingooophorectomy was performed with laparoscopic closure of the vaginal defect. The patient had full resolution of her symptoms.

Conclusion: This case suggests that laparoscopic surgery can be used successfully for initial management of tubovaginal prolapse after hysterectomy without the need for a combined vaginal approach.

Key Words: fallopian tube prolapse, hysterectomy, laparoscopy

Case Report

Fallopian tube prolapse complicating hysterectomy is a well-described entity with over 100 cases reported in the world literature. Surgical management, consisting of excision of all or part of the tube with repair of the vaginal opening, has been described by vaginal, abdominal, and combined approaches. More recently, laparoscopic management has been advocated, generally in combination with vaginal surgery, or in cases in which an initial vaginal operation was unsuccessful. We carried out a PubMed English language search from 1966 through 2004 using the search terms “fallopian tube prolapse,” “tubo-vaginal prolapse,” “tubo-vaginal fistula,” and “hysterectomy complications.” In reviewing the cases managed by laparoscopy, we found none in which repair of the vagina was completed by intraabdominal laparoscopic suture. We suggest that using this technique provides a satisfactory initial alternative to previously reported methods and detail a case in which this approach proved to be both straightforward and successful.

CASE REPORT

A 32-year-old woman presented to our service with intermittent lower abdominal cramping pain, vaginal spotting, and dyspareunia. Her problems had started 1 year previously when she underwent vaginal hysterectomy at another institution for symptomatic uterine fibroids. Her tubes and ovaries were not removed. The only abnormalities noted on physical examination were a 2-cm erythematous friable mass at the center of the vaginal apex and tenderness over the left adnexa (Fig. 1A). Vaginal sonogram identified normal ovaries with a dilated left tube terminating at the vaginal apex, consistent with a diagnosis of tubovaginal prolapse.

At laparoscopy, the left fallopian tube prolapse into the vaginal cuff was confirmed with chronic inflammatory changes of the tube and ovary. The right adnexa appeared normal. Pelvic adhesions were taken down sharply. The left round ligament was divided with electrocautery and the leaves of the broad ligament were separated, opening the pelvic sidewall. The left ureter was identified. A window was created below the infundibulopelvic ligament, the left tube and ovary were mobilized, and the left infundibulopelvic ligament was divided with an endoscopic vascular linear stapling device.
vice. The bladder was identified, the vaginal cuff was opened, and the end of the fallopian tube released. The vaginal cuff opening was then closed with a figure-of-8 polyglactin 910 suture. The left tube and ovary were placed in an endoscopic retrieval bag and extracted through the umbilical port. The bladder was drained during the procedure but could have been filled if assistance was needed in identifying the vesicovaginal space; in addition, a Betadine-soaked sponge in a sponge holder was placed as a vaginal stent to help visualize the cuff. Pathology revealed chronic salpingitis with focal acute inflammation and tuboovarian adhesions. There was no gross or microscopic evidence of oophoritis. The patient is currently asymptomatic with resolution of all her preoperative complaints.

**DISCUSSION**

The definitive diagnosis of fallopian tube prolapse requires histologic confirmation; however, Muntz et al\(^3\) found that results were often erroneous, and the biopsy may be painful and hemorrhagic. In the literature, there is no discussion of the need for echographic or tomodensitometric examination to help in the diagnosis; however, imaging studies have been reported in 2 cases and proved helpful in both.\(^1\)\(^5\) In our patient, the sonographic findings were so strongly supportive of the clinical diagnosis that we felt that biopsy was not indicated. Clearly, in cases in which doubt exists, and when the results would affect management, a biopsy is essential.

On reviewing the literature, we identified 12 cases in which laparoscopic surgery was used.\(^1\)\(^–\)\(^8\) Nine of these detailed a combined vaginal–laparoscopic approach as the initial surgery. In 2 cases, because of continued pain after initial vaginal operations, laparoscopic salpingectomy was successfully performed; in one of these the vagina was already healed, and in the other, a 2-mm defect in the cuff was left to close secondarily.\(^2\)\(^,\)\(^3\) In the remaining case report, no details were provided other than the statement that the de novo complete salpingectomy was carried out laparoscopically.\(^4\) Because of the high rate of posthysterectomy, infectious and hemorrhagic complications associated with later development of fallopian tube prolapse, Piacenza and Salsano\(^4\) warned that one should expect a high incidence of pelvic adhesions at the time of corrective surgery. It was their opinion that the laparoscopic technique permitted easier dissection and hemostasis. Successful surgery depends greatly on the ability to perform adhesiolysis and visualize the tube and tubovaginal junction.\(^2\) This is particularly true when the initial hysterectomy was performed through laparotomy. When fallopian tube prolapse follows vaginal hysterectomy, as is most commonly the case, adhesions are usually limited to the involved tube and ovary and are easier to take down. Pelvic adhesions consequent to hysterectomy frequently distort normal anatomy. The added complication of tubovaginal prolapse may further alter normal relationships, although no characteristic alterations in this context have been described. The structures at highest risk for dis-
tortion, and therefore injury, include the bladder, ureters, and sigmoid colon. To avoid such injury, at laparoscopy, the bladder and bowel should be freed from the scar of the vaginal cuff and the ureter visualized in the usual fashion as described in our operative note. If severe pelvic adhesions prevent adequate laparoscopic visualization and mobilization of the tube, conversion to laparotomy should be performed. As advised by others and encountered in our case, the ovary should be removed if it is involved in the inflammatory process. Hernandez and Howard advocate a vaginal excision as the initial attempt, because this has been widely performed with good results, the exception being women in whom pelvic pain and dyspareunia are major symptoms, in which case they recommend a combined vaginal–laparoscopic approach as the initial operation. We do not claim that the totally laparoscopic technique is superior to the combined procedure; however, in the absence of comparative studies, because the surgery can be completed through a single route, we feel that there is no need for a combined operation. Piacenza and Salsano also foresee a broad application of the laparoscopic approach. Given the laparoscopic findings, a vaginal approach would have been feasible for our patient but would have probably been much more difficult.

REFERENCES