

Immediate Repair of an Iatrogenic Uterine Transection During Myomectomy and Patient Follow-Up: A Case Report

Olga Triantafyllidou¹, Konstantinos Stavridis^{1*}, Stavroula Lila Kastora² and Nikolaos Vlahos¹

¹2nd Department of Obstetrics and Gynaecology, Aretaieion Hospital, University of Athens, Attica, Greece

²Department of Reproductive Health, University College London, London, England, United Kingdom

***Corresponding Author:** Konstantinos Stavridis, 2nd Department of Obstetrics and Gynaecology, Aretaieion Hospital, University of Athens, Attica, Greece.

Received: October 01, 2023; **Published:** October 17, 2023

Abstract

Background: Myomectomies are frequent, fertility preserving operations that aim to remove fibroids. Amongst rare intraoperative complications reported in literature, we may find iatrogenic uterine transection because of large fibroma, challenging excision.

Case Presentation: In this report, we present an iatrogenic complete uterine transection in nulliparous woman throughout a myomectomy that was immediately recognized and repaired, patient follow up as well as review of the literature.

Conclusion: Till present, very few uterine transections have been reported and none of which occurring during a myomectomy. Fertility conservation must be considered in almost every gynecological procedure in women of reproductive age.

Keywords: *Complication; Fertility; Myomectomy; Uterine Transection; Cervix Separation*

Introduction

Myomectomies are frequent operations that aim to remove fibroids and alleviate the patient's symptoms, while preserving fertility. Most common intraoperative complications of myomectomies are bleeding and myometrial hematoma [1]. However, occasionally rare complications may lead to unplanned hysterectomy even in nulliparous women. Indeed, when the fibroma is quite enlarged and its margins cannot be well-defined, the surgery might be proven quite challenging. In this report, we present an iatrogenic complete uterine transection in a nulliparous woman throughout a myomectomy that was immediately recognized and repaired, patient follow up as well as review of the literature. Until today, very few uterine transections have been reported and limited information regarding proper management is available. Fertility conservation must be considered in almost every gynecological procedure in women of reproductive age.

Case Presentation

A 36-year-old nulliparous woman presented to our clinic with a feeling of fullness in the lower abdomen, as well as urinary bladder irritability. She had a history of two previous myomectomies. During gynecological examination there was a large mass with a smooth surface extending from the suprapubic region up to the level of the umbilicus. A transvaginal ultrasound and a Magnetic Resonance Imaging (MRI) confirmed our findings and revealed a large myoma of 14 cm in size, which seemed to highly separated the myometrium with its pseudocapsule, resulting in unclear margins. To relieve the patient's symptoms, we decided to perform a laparotomy for the

excision of the myoma. Intraoperatively, we discovered a 16 cm large mass strongly attached to the intestine, both the fallopian tubes and the ovaries. The myoma has grown distending inside the myometrium, creating a pseudocapsule which could not be clearly distinguished from the underlying myometrium. The adhesions resulted from the two previous myomectomies further impeded us to distinguish its margins. During adhesiolysis, the intestine was separated from the fallopian tubes, the ovaries, and the myoma. While performing the myomectomy, a complete uterine corpus separation from the cervix occurred. To delimit the cervical canal and maintain its patency, we placed a Foley catheter into the cervix via the external cervical os (Figure 1). The uterine corpus was reattached to the cervix with circumferentially placed intermittent sutures around the Foley catheter and the balloon was filled with 2 ml of normal saline to hold the catheter inside the uterine cavity. Firstly, six sutures (vicryl 3.0) were placed into the endometrium, following by intramural sutures to the myometrium (vicryl 0). Finally, 6 superficial sutures were placed to accomplish the reconstruction. After skin closing, a vaginal examination revealed no further bleeding. The patient was given estradiol valerate 2 mg three times per day for 20 days to promote the regrowth of endometrium and minimize the possibility of postoperative Asherman's syndrome. The Foley catheter was removed after 2 weeks.



Figure 1: Nelaton catheter in cervical canal after excision of body of the uterus.

This extremely rare and severe iatrogenic complication of myomectomy was immediately recognized and repaired and the myoma was completely excluded (Figure 2). Two months following the procedure, the menstrual cycle of the woman was normal, and transvaginal ultrasound revealed normal size of the uterus with endometrial thickness of 8 mm (day 10 of the cycle). Two years after the surgery no further symptoms have been reported. Despite our advice to undergo a follow-up hysteroscopy, the patient does not wish to undergo any further operation.

Discussion

The present study indicates that iatrogenic uterine corpus transection can occur as a serious iatrogenic complication of myomectomy. This seems to be very unusual as it has not been reported in the literature to date. Most cases describing a complete uterine separation



Figure 2: Large myoma 16 cm after removal.

from the cervix occurred following fractures or trauma [2-7]. Smith., *et al.* report a case of a 21-year-old patient sustained a complete uterine avulsion after multiple severe pelvic structures resulted from a car accident. Subtotal hysterectomy was performed [6]. Kesterson., *et al.* report a 15-year-old patient presented with secondary amenorrhea resulting from crushing trauma. Imaging revealed a complete transection of the uterine corpus from the cervix. Circumferentially placed sutures were placed to reattach the uterus to the cervix and normal menstruation resumed 6 weeks later [3]. Similarly, Donner., *et al.* describe a case of an 18-year-old patient presented with primary amenorrhea resulting from pelvic fractures. Following the operation, menstruation occurred after 2 months. At the age of 32, the patient delivered a baby with caesarian section [2]. Murphy., *et al.* report a case of a 22-year-old patient presented with primary amenorrhea resulting again from trauma. After complete anastomosis of the uterus to the cervix, menstruation occurred after 2 months. In 2018, a case of post traumatic cervico-isthmic disjunction and complete repair on a 36-year-old woman is reported, diagnosed in the context of unexplained infertility. Unfortunately, menstruation did not resume after surgery [5]. Recently, Mankus., *et al.* reported a case of an 18-year-old woman presented with pelvic fractures and bladder rupture. In surgery, a complete transection of the uterine corpus was identified, and circumferential repair was made, according to the above cases. Similarly, to our case, a Foley catheter was placed to access the cervical canal and maintain its patency [4].

Most of the women described in the above cases, achieved menstruation maintenance and some of them were also able to deliver a baby. Uterine transection can occur after a trauma or, as we point, as an iatrogenic complication of myomectomy. The margins between the pseudocapsule and the myometrium could not be well-defined and, therefore, the transection has occurred during the excision. Due to the size of the fibroid and the two previous procedures that resulted in such adhesions, the fibroid together with its pseudocapsule was not adequately peeled off. Despite first been hooked to distinguish the capsule from the tumor, as described by Acién., *et al.* [8] the separation from the underlying myometrium was inappropriate, possibly due to the previous adhesions. As shown in figure 2, there is possibly myometrium and perimetrium left surrounding the exceeded myoma, which may explain why the transection occurred. Nevertheless, as this is an iatrogenic complication, we are here highlighting the importance of quickly recognizing the uterine separation from the cervix

and immediately placing a Foley catheter into the cervical canal to delimit the margins of the cervix and cervical canal. In our case, it was challenging to recognize the boundaries of the cervix and the fibroid, and our goal was to maintain the patency of the entire endometrial cavity and continuity with the cervical canal. Our second concern was to maintain the woman's fertility and restore menstruation as well as to avoid the development of Asherman's syndrome. The catheter served two purposes: to maintain the continuity of the uterus with the cervix and to prevent the Asherman's syndrome.

In our institution, we opted to use Foley catheter for 7 days in combination with oral estrogen valerate for 20 days followed by the addition of medroxyprogesterone acetate (MPA) or equivalent (levonorgestrel) for 10 days, after operative hysteroscopy in women of reproductive age with high risk of development of intrauterine adhesions, especially after hysteroscopic myomectomies (FIGO I-II). Similarly, oral estrogen was given in this case of open myomectomy to endorse endometrium regrowth and minimize the risk of post-operative adhesion formation.

There is a lack of definitive evidence to conclude that any treatment is effective in preventing post-operative uterine adhesion formation. The available literature has significant heterogeneity and high risk of bias, making any definitive conclusions difficult [9]. On the other hand, it is well known that estrogens promote the regrowth of endometrium [10,11], but studies which, investigated oral estrogen therapy, especially, after operative hysteroscopy, found no difference in intrauterine adhesion formation. A review and meta-analysis showed no decrease in intrauterine adhesion with estrogen therapy after operative hysteroscopy [9]. Tonguc., *et al.* published a randomized trial that did not reveal any difference in the prevalence of synechiae between four groups: 1) control group, 2) group with an intrauterine device (IUD) only, 3) group with hormone therapy only and 4) group with hormone therapy and an IUD [12].

Intracavitary use of a Foley catheter or a specifically designed balloon such as the Balloon Uterine Stent (Cook Medical, Bloomington, IN) for 7 - 10 days after surgery has almost no complications. Orhue., *et al.* compared two adjunctive treatments for intrauterine adhesions following lysis. It was found that there was statistically significant better outcome in the Foley catheter group compared with the intrauterine contraceptive device (IUCD) group [13].

Moreover, prior to surgery, it is highly recommended to identify the exact growth of the fibroid toward the myometrium, in order to identify the pseudocapsule and decapsulate it before the myomectomy. Due to the adhesions caused from the two previous surgeries, we could not discriminate the margins of the fibroid and the extent of myometrium separation. Retrospectively, given the MRI findings, we think that an intraoperative abdominal ultrasound would help us identify the exact margins of the myoma.

Conclusion

This extremely unusual case shows that complete uterine corpus separation from the cervix can occur as a rare iatrogenic complication of myomectomy, especially when the fibroma is quite enlarged and its margins as well as the cervix cannot be clearly distinguished. Previous operations make the visibility even worse because of adhesions formation. We managed to quickly recognize the transection and reattach the uterus to the cervix with circumferentially placed sutures and a Foley catheter as a guide to delimit the cervical canal. Post-operatively, estrogen therapy enhances endometrium regrowth and could possibly, combined with the Foley catheter, prevent Asherman's syndrome. We managed to preserve the patient's menstruation and possibly the fertility, which are of paramount importance. Nonetheless, further studies are required to corroborate this.

Acknowledgements

We sincerely thank the patient for allowing us to share her story with an aim to contribute meaningfully to the medical literature.

Conflict of Interest

The authors report no conflicts of interest.

Bibliography

1. Tanos V., *et al.* "Prevention and Management of Complications in Laparoscopic Myomectomy". *BioMed Research International* (2018): 8250952.
2. Donner GG., *et al.* "Primary amenorrhea caused by crushing trauma of the pelvis". *American Journal of Obstetrics and Gynecology* 183.2 (2000): 500-501.
3. Kesterson J., *et al.* "Secondary amenorrhea resulting from traumatic separation of the cervix from the uterine corpus". *Obstetrics and Gynecology* 110.2-2 (2007): 528-530.
4. Mankus E., *et al.* "Immediate Repair of a Complete Uterine Transection After Motor Vehicle Collision". *Obstetrics and Gynecology* 136.5 (2020): 950-952.
5. Murphy D and Bonnar J. "An unusual case of traumatic primary amenorrhoea". *BJOG: An International Journal of Obstetrics and Gynaecology* 100.8 (1993): 784-785.
6. Smith RJ. "Avulsion of the nongravid uterus due to pelvic fracture". *Southern Medical Journal* 82.1 (1989): 70-73.
7. Vignolle J., *et al.* "About a case of traumatic separation of the cervix from the uterine corpus, diagnosed in a context of infertility". *Journal of Gynecology Obstetrics and Human Reproduction* 7.6 (2018): 257-260.
8. Ación P and Quereda F. "Abdominal myomectomy: results of a simple operative technique". *Fertility and Sterility* 65.1 (1996): 41-51.
9. Healy MW., *et al.* "Intrauterine adhesion prevention after hysteroscopy: a systematic review and meta-analysis". *American Journal of Obstetrics and Gynecology* 215.3 (2016): 267-275.
10. March CM. "Management of Asherman's syndrome". *Reproductive BioMedicine Online* 23.1 (2011): 63-76.
11. Yu D., *et al.* "Asherman syndrome--one century later". *Fertility and Sterility* 89.4 (2008): 759-779.
12. Tonguc EA., *et al.* "Intrauterine device or estrogen treatment after hysteroscopic uterine septum resection". *International Journal of Gynecology and Obstetrics* 109.3 (2010): 226-229.
13. Orhue AA., *et al.* "A comparison of two adjunctive treatments for intrauterine adhesions following lysis". *International Journal of Gynecology and Obstetrics* 82.1 (2003): 49-56.

Volume 12 Issue 11 November 2023

©All rights reserved by Konstantinos Stavridis., *et al.*