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Case Report

Successful removal of 34 fibroids in uterus-preserving myomectomy: a case report

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ABSTRACT

When uterine preservation is of the essence, myomectomy is the preferred standard of surgical care for removal of myomas, the commonest tumors of the female genital tract. This case report describes the evaluation and treatment of a 42-year-old female with a multi-fibroid uterus, who desired uterine preservation in order to conceive. Diagnostic hystero-laparoscopy with myomectomy resulted in the removal of 34 leiomyomas of varying sizes from different locations within the uterus. Our case study is of particular importance as it emphasizes that effective removal of even a large number of multiple fibroids is attainable in rural, low-resource settings by strict adherence to the established myomectomy protocol and the achievement of as bloodless an operative field as possible using various available techniques.

Keywords: Myoma, Myomectomy, Hystero-laparoscopy, Fibroid

INTRODUCTION

Estimated to present in 20% to 50% of females, myomas or fibroids are the commonest tumors found in the female genital tract, and known to occur with increased frequency during the later reproductive years.^{1,2} Although fibroids have unknown etiology, they have been hypothesized to occur due to aberrations associated with ovarian activation, genetic characteristics, prenatal hormone exposure, or growth factors.³⁻⁵

Hysterectomy is the established gold standard intervention for uterine fibroids, while myomectomy is preferred in females who desire uterine preservation. In recent times, more minimally invasive techniques have been developed and propagated. While striving to preserve fertility in females of child-bearing age, intervention can be challenging in the presence of multiple large fibroids, especially in cases where hysterectomy would be

considered the safer approach. In such cases, open myomectomy remains the safest and most effective option, even with the availability of new surgical and non-surgical techniques, the main reason being that it has been shown to be associated with increased pregnancy rates in these females.^{6,7}

This case report describes the evaluation and treatment of such a 42-year-old female with a multi-fibroid uterus, who desired uterine preservation in order to conceive.

CASE REPORT

A 42-year-old nulliparous married female presented in the emergency department in our rural hospital setting with complaints of severe pain in abdomen since several months, heavy menstrual bleeding, and increased urinary frequency. She reported a history of a spontaneous abortion two years ago. Since then, she had been receiving

infertility treatment at another hospital and trying to conceive with no success. Additionally, she reported having undergone an open myomectomy at an outside hospital ten years ago wherefrom the surgical notes indicated that two fundal fibroids of about 3×2 cm and 2×2 cm respectively had been removed. She was investigated further with ultrasound (USG) and MRI and subsequently diagnosed with multiple uterine fibroids. The patient was keen on saving her uterus at any cost in order to be able to bear a child. The patient was counseled and posted for diagnostic hystero-laparoscopy with myomectomy.



Figure 1: Uterus studded with multiple fibroids.

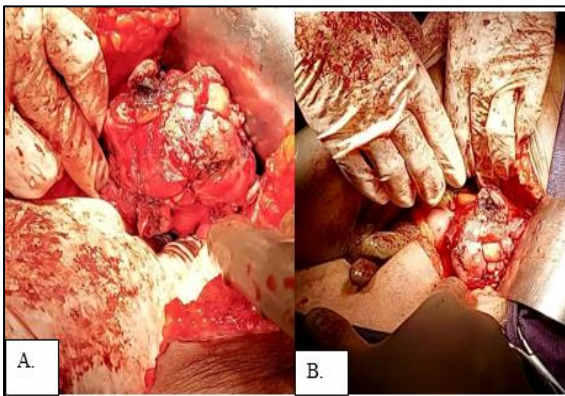


Figure 2: Post-myomectomy uterine reconstruction.

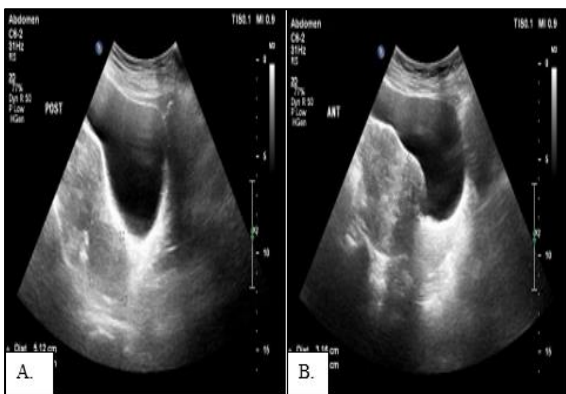


Figure 3: USG image showing multiple uterine fibroids.

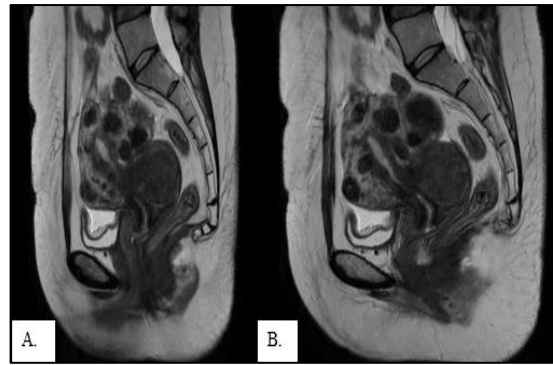


Figure 4: Sagittal MRI images from a T2 weighted sequence showing multiple uterine fibroids.



Figure 5: In all 34 fibroids were removed.

On examination, her vital signs were found to be within normal limits. The uterus was around a 14 to 16-weeks size and her abdomen was found to be mildly tender. A full blood count was performed which showed hemoglobin of 12.2 with a mean corpuscular volume of 73 fL. Her renal function was normal. A pelvic ultrasound revealed a uterus enlarged to a 14 to 16-weeks size due to multiple fibroids. Her MRI imaging showed multiple fibroids- the larger posterior wall intramural fibroids measured 17×21×18 mm and 18×17×17 mm; the larger anterior wall intramural fibroids measured 17×20×20 mm and 14 x 11 mm; the larger fundal intramural fibroids measured 15×12 mm and 14×17 mm; the larger posterior wall subserosal fibroid measured 32×35×40 mm; the larger anterior wall subserosal fibroid measured 20×25×27 mm; the larger fundal subserosal fibroid measured 13×18×16 mm; a submucosal fibroid measured 11×7 mm; a large posterior wall cervical fibroid measured 47×54×44 mm; the two larger right broad ligament fibroids measured 38×36×41 mm and 10×8 mm. No malignant or aggressive findings were reported.

The patient was started on tranexamic acid and Provera to manage her bleeding while awaiting surgery. To investigate her fertility, labs were performed to check her anti-Mullerian hormone, follicle stimulating hormone, and luteinizing hormone levels, which were all found to be within normal parameters. With informed consent, the

patient elected to undergo a myomectomy with acknowledgment of the risk of needing an emergency hysterectomy intraoperatively.

A diagnostic hystero-laparoscopy was performed, which confirmed bilateral patent tubes with normal uterine cavity. Bilateral ovaries were normal. Her sigmoid colon was found to be severely adhered to the previous myomectomy scar. The entire uterus was studded with numerous variable-sized fibroids. In view of the extensive bowel adhesions and extraordinary number of uterine fibroids requiring extensive uterine reconstruction, a decision was taken to perform an open myomectomy. A midline laparotomy was made and extended above the umbilicus owing to the large size of the uterus. Sigmoid adhesiolysis was performed and a total of 34 fibroids of various sizes were removed. Uterine reconstruction was performed at every myomectomy site in two layers using the baseball suturing technique employing Vicryl 1-0 suturing material.

Estimated blood loss from the procedure was approximately 1 liter. The patient's hemoglobin measured at 8.9 g/l post-operatively, not requiring any post-operative transfusion. The patient had an uneventful recovery and was discharged home on day four post-operatively. Histopathology of the retrieved myoma tissue showed benign leiomyomas with no atypical features. The patient was reassessed in the clinic six weeks after her surgery. She reported one period post-operatively and described it as normal. She was advised against conceiving for a period of six months.

DISCUSSION

Uterine fibroids, usually arising from the smooth muscle cells of the myometrium, are benign monoclonal tumors with considerable extracellular matrix comprising collagen, fibronectin, and proteoglycan.^{8,9} Each fibroid is believed to arise from a single muscle cell.⁹ An estimated 3.2–7.6% of new gynecological cases are diagnosed as uterine fibroids.¹⁰ Approximately 70% of hysterectomies report a finding of uterine fibroids.⁸

Cytogenetic and genetic studies suggest that these fibroids are a result of somatic myometrial mutations involving anomalous presentation of chromosomes 6, 7, 12 and 14 in various permutations across patients.^{8,9} Additionally, ovarian steroids, abnormal uterine vasculature, and angiogenic factors are known to be closely associated with fibroid growth as fibroids have a rich blood supply.^{8,9} Higher than normal estrogen levels attributed to high consumption of red meat has been correlated in literature with the increasing the likelihood of developing uterine fibroids by 1.7 times the normal rate of incidence.¹¹ Established risk factors for uterine fibroids include but are not limited to African American race, nulliparity, obesity, hereditary factors, polycystic ovarian syndrome, diabetes, and hypertension.^{9,11} The risk factors identifiable in the patient in this case report include a family history of

uterine fibroids in a first-degree relative, nulliparity, and being of reproductive age.

As an increasing number of women delay childbearing for various reasons, there is an uptick in the number and frequency of conservative procedures to preserve reproductive potential, especially in the case of uterine fibroids.^{12,13} However, in 1 to 4% of such cases, myomectomy may be extremely challenging due to the location, size, or number of myoma, or in some cases, the skill and experience of the operating surgeon, thereby necessitating hysterectomy.^{12,14,15} This much feared complication is devastating for the patient and anxiety-inducing for the attending gynecologist, particularly when the surgery is meant to improve and preserve the patient's fertility.^{12,13} Therefore, it is pertinent that the patient be informed of the probability of intraoperative findings leading to an emergent situation which would compel the surgeon to perform a hysterectomy instead of the planned myomectomy in the patient's best interests.

In the procedure described in this case report, we were faced with the challenge of multiple uterine fibroids in various locations. One of the key measures to deal with this challenge was to effectively decrease blood flow to the uterus through the use of measures such as a uterine tourniquet and vasopressin. Tourniquets are safe and inexpensive and can be of great benefit when large or multiple intramural fibroids must be removed. Although there do exist several published case reports regarding multiple fibroid removals through open myomectomies, most of those cases have been performed in urban tertiary care centers and most frequently on much younger patients between the ages of 18 to 35 years.¹⁶⁻²⁰

Our case report is of particular importance as it attempts to demonstrate that even fibroids as large in number as 34 can be efficiently removed by adhering to meticulous surgical steps in low resource, rural settings while effectively preserving the uterus, thus allowing females in advanced reproductive age groups to still have hope for successful conception and child-bearing.

CONCLUSION

In conclusion, effective removal of multiple fibroids is attainable by strict adherence to the established myomectomy protocol and the achievement of as bloodless an operative field as possible using various available techniques.

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Ethical approval: Not required

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