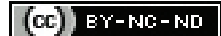


Successful Removal of 147 Fibroids from the Uterus via Abdominal Myomectomy: A Case Report

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ABSTRACT

Uterine fibroids are a common gynaecological condition that can sometimes be large and multiple, significantly impacting the affected woman's quality of life. Managing multiple fibroids in women who want to preserve their fertility can be complex, as myomectomy is more challenging compared to hysterectomy. A 30-year-old woman was admitted with complaints of heavy menstrual bleeding, severe anaemia, and an abdominal mass equivalent to a 36-week gravid uterus. Ultrasound followed by Magnetic Resonance Imaging (MRI) revealed multiple fibroids. Since she strongly desired to preserve her fertility, an abdominal myomectomy was planned. The present case highlights the removal of 147 fibroids from the patient, along with a discussion on the challenges faced during surgery and the postoperative period. The authors emphasises that such cases require a highly multidisciplinary approach and should be performed in institutions with adequate blood banks and intensive care support.

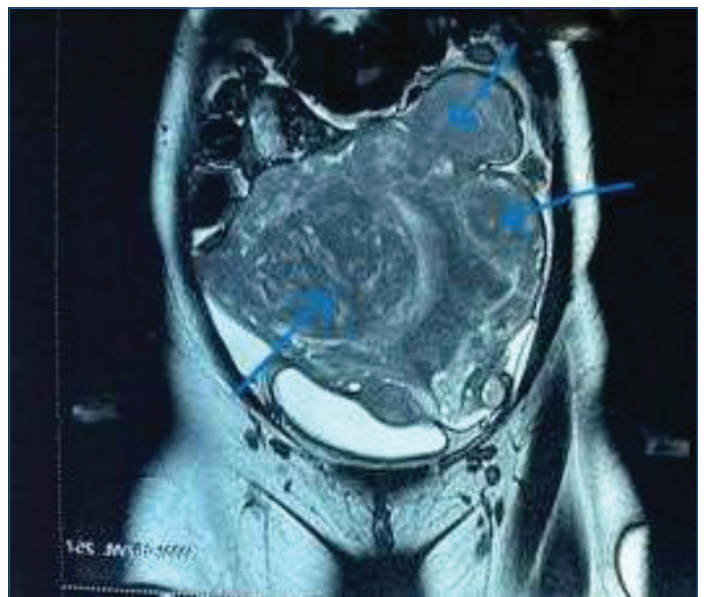
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CASE REPORT

A 30-year-old female presented at the outpatient department with heavy menstrual bleeding that had been worsening over the past six months. She also complained of extreme fatigue, weakness, palpitations, and had an abdominal mass corresponding to a 36-week gravid uterus. According to her medical history, she was diagnosed with a fibroid uterus during her first pregnancy 10 years ago, after which she underwent a laparoscopic myomectomy in 2016. She had one child who is now 10 years old, and she strongly desired to preserve her fertility. The laparoscopic myomectomy performed six years ago provided relief from her symptoms for a year, but then she started experiencing heavy menstrual bleeding again. The patient tried treatment with Gonadotropin hormone-releasing Hormone (GnRH) analogues and ulipristal acetate, but these methods failed to alleviate her symptoms or reduce the size of her fibroids.

Additionally, during the Coronavirus Disease 2019 (COVID-19) pandemic in 2020-2021, the patient was unable to follow-up on her treatment and instead relied on local herbs to manage her symptoms. The untreated heavy menstrual bleeding for two years resulted in severe anaemia. She received a blood transfusion at a local hospital and was eventually brought to the institution with a Haemoglobin (Hb) level of 2.9 gm/dL, accompanied by extreme fatigue and palpitations. On examination, the patient exhibited severe anaemia, poor nutritional status, and had an abdominopelvic mass that was mobile, firm, non tender, and had irregular contours, almost touching the xiphisternum. Ultrasound revealed multiple uterine fibroids, with the largest one measuring 10×8 cm. Distortion of the endometrial cavity was also observed. MRI of the patient revealed multiple well-defined lesions appearing iso to hypointense on long TR images, originating from the anterior and posterior wall and fundus of the uterus, located intramurally and subserosally, and causing compression of the endometrium [Table/Fig-1].

Due to the presence of multiple fibroids confirmed clinically and via imaging, the patient was advised to undergo a hysterectomy as a safer management option. However, since the patient was keen on preserving her fertility, she opted for a myomectomy after providing informed consent. The informed consent process included discussing

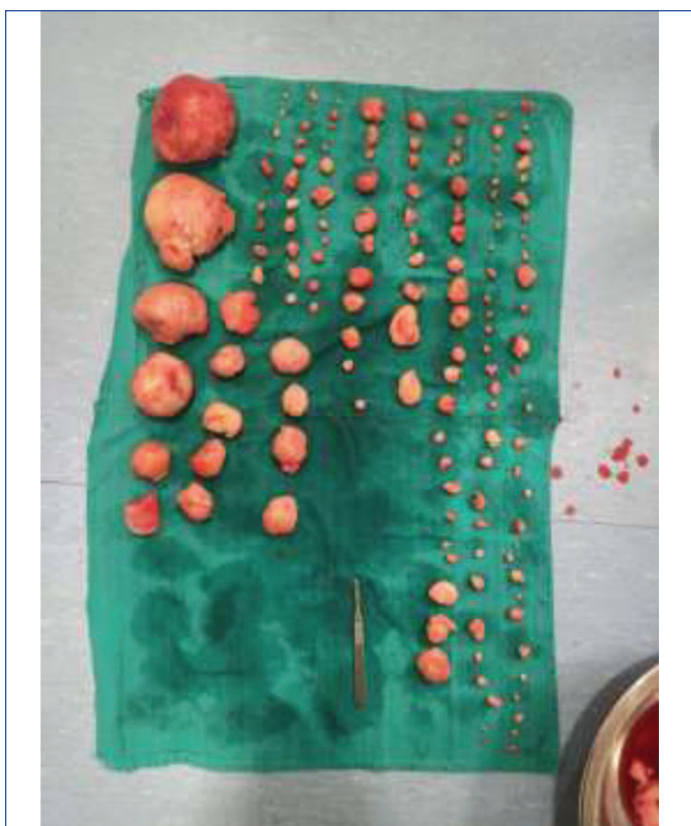


[Table/Fig-1]: MRI image in sagittal section showing multiple fibroids.

the high possibility of requiring multiple blood transfusions, the potential need for an intraoperative hysterectomy, the risk of injury to surrounding organs such as the urinary bladder, ureter, and fallopian tube, as well as the possibility of fibroid recurrence and counselling regarding future reproductive outcomes, such as uterine rupture. Before the surgery, the patient needed a transfusion of eight units of Packed Red Blood Cells (PRBC) to increase her Haemoglobin (Hb) level to 10.5 g/dL. Additionally, 4 units of PRBC, 4 units of Fresh Frozen Plasma (FFP), and 4 units of platelets were reserved in anticipation of significant blood loss during the surgery.

The surgery was performed under general anaesthesia with a midline vertical incision, which had to be extended above the umbilicus for adequate exposure. Upon entering the abdomen, multiple fibroids were observed, distorting the shape of the uterus, with the largest measuring approximately 8×5 cm on the fundus. After assessing the feasibility of a myomectomy and inspecting and palpating the fibroids, the procedure commenced. It was decided

not to administer diluted vasopressin (20 Units in 200 mL normal saline) all at once, but rather to inject it in succession around the fibroids just before enucleation. Special care was taken to avoid injury to the fallopian tube. As the enucleation of the fibroids proceeded, the endometrial cavity was opened, as several fibroids had submucosal components. The surgical challenges included complete identification of the fibroids, obliteration of the uterine dead space, achieving haemostasis, and reconstructing the uterus after the removal of 147 fibroids [Table/Fig-2]. The surgery lasted for three hours, with an average blood loss of approximately 2.5 litres. During the procedure, the patient required five units of Packed Red Blood Cells (PRBC), five units of Fresh Frozen Plasma (FFP), and five units of platelets. Due to the substantial blood loss, the patient was transferred to the Intensive Care Unit (ICU) and received vasopressor support while being intubated. Extubation took place the following day, and vasopressor support was gradually discontinued 12 hours after the surgery. The patient was initiated on high-dose antibiotics (Piperacillin-tazobactam) and closely monitored for urine output. Deep Venous Thrombosis (DVT) prophylaxis was administered to the patient through anti-DVT stockings immediately after the surgery and via injection of low molecular weight heparin 24 hours later. The patient recovered well from the surgical stress and was transferred from the ICU to the ward on day 3 post-surgery. Histopathological examination revealed multiple leiomyomas. A follow-up appointment after one month demonstrated significant improvement in the patient's symptoms and quality of life.



[Table/Fig-2]: Fibroids removed via abdominal myomectomy.

DISCUSSION

Uterine fibroids, or leiomyomas, are benign smooth muscle tumours that arise from cells of the uterine myometrium. They are a common gynaecological condition, affecting up to 80% of premenopausal women [1]. While many women with fibroids are asymptomatic, those with symptoms often experience heavy menstrual bleeding, abdominal pain, increased abdominal girth, urinary frequency, constipation, recurrent miscarriages, dyspareunia, and sometimes subfertility [2].

Fibroids are a significant health problem among women aged 15-54 years, accounting for 29% of gynaecologic hospitalisations [3].

Additionally, fibroids account for 40%-60% of all hysterectomies and 30% of hysterectomies among young women aged 18-44 years [4]. Several factors have been associated with an increased risk of developing uterine fibroids. Ethnicity appears to be a significant risk factor, with individuals of black race having a higher incidence of fibroids [1]. Other risk factors, such as nulliparity, obesity, polycystic ovary syndrome, diabetes, and hypertension, also contribute to fibroid prevalence [5]. Notably, multiple cutaneous and uterine leiomyomatoses have been linked to the fumarate hydratase gene, which codes for a mitochondrial enzyme. Furthermore, cytogenetic abnormalities, particularly deletions of chromosome 7, have been observed in a substantial proportion of fibroid specimens [5].

Uterine-sparing surgery is generally recommended as a treatment for multiple fibroids in women of reproductive age to preserve fertility. In those desiring fertility, myomectomy is typically recommended over Uterine Artery Embolisation (UAE). This is because UAE is associated with a higher rate of re-intervention, a higher likelihood of intrauterine adhesions, and a general lack of evidence regarding fertility and pregnancy outcomes [6,7]. UAE may also sometimes lead to inadvertent embolisation of ovarian vessels, causing a decrease in ovarian reserve and compromising reproductive function [8]. However, in women of childbearing age who wish to preserve their fertility, management can be difficult in patients presenting with multiple large fibroids, particularly if a hysterectomy would be the safer and more cautious approach.

The present case report highlights the challenging case of the removal of 147 fibroids from a woman who wanted to preserve her fertility, emphasising the intraoperative and postoperative difficulties faced. Similarly, case reports in the literature discussing the removal of multiple fibroids have focused on the importance of meticulous surgical steps and the significance of decreasing blood flow to the uterus using a tourniquet and vasopressin [9,10]. Additionally, having an accurate understanding of the location of fibroids is necessary for meticulous preoperative planning. Research has shown that MRI has superior sensitivity and minimal measurement discrepancies [11].

CONCLUSION(S)

The present case highlights that myomectomy in such high-risk cases can be complex and requires multidisciplinary support, including a significant need for blood products and intensive care. Such cases should only be attempted in institutions where such support is available, as timely intervention can save the patient's life. In the postoperative period, with the background of haemorrhage, higher antibiotics should be administered to prevent sepsis, DVT prophylaxis must be ensured, and urine output should be closely monitored. It is also important to counsel the patient about the risks involved in such cases, especially when a safer alternative surgery, such as hysterectomy, is available. Additionally, one cannot ignore the effect that the COVID-19 pandemic had on this patient, as she went untreated for two years, leading to severe anaemia and the need for such a complex surgery due to the rapid growth of the fibroids.

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