

# Management dilemma of multiple submucous fibroids in “virgo intacta”

## Abstract

Nulliparity and advanced age are dependent risk factors of uterine fibroids in the reproductive life of every woman. Fertility-sparing treatment options remain the mainstay of management where there is fertility desire.

We present a case report of a 42-year-old Virgo intacta who had abnormal uterine bleeding due to multiple submucous fibroids. An open myomectomy was performed and she made good recovery. Combined oral contraceptive pills were commenced immediately after the operation and continued for 3 months. She had regular periodic bleeding of low volume, flow and duration. Thereafter, subsequent monthly follow-ups were uneventful as a normal regular menstrual cycle was restored.

There were management challenges as she was Virgo intacta at 42 years of age. Measures to avoid intrauterine synechiae were limited and combined oral contraceptive was used with good outcome.

**Keywords:** uterine fibroid, virgo intacta, woman, fertility

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## Introduction

Uterine fibroid is a common benign tumour of the uterus in the reproductive age. The prevalence of uterine fibroids is much higher in blacks compared to the white race.<sup>1,2</sup> Occurring in 70-80% of women by or before the onset of menopause, uterine fibroids are the most common benign gynecological neoplasms.<sup>3,4</sup> They originate from smooth muscle cells of the uterine wall and are more common in African women.<sup>5,6</sup>

While the exact cause of fibroids is not known, studies show that their development and growth are strongly linked to the female hormones, estrogen and progesterone. In women that are exposed to these hormones for longer periods, e.g. nulliparous women, the risk of developing fibroids is higher. As a 42-year-old virgin African woman, our case study had a constellation of factors that greatly increased her risk of developing fibroids.<sup>7</sup> Therefore, nulliparity and advanced age are dependent risk factors of uterine fibroids.

The symptoms of heavy menstrual bleeding and pressure effect could be debilitating, more so when various classifications of fibroids including submucous types are present in one person. In patients with symptomatic fibroids, the approaches to management include expectant management, surgical management, and medical management. The approach to management should be tailored to each individual patient and should be chosen based on factors such as the patient's age, nearness to menopause, fertility desire, and the type, number and size of fibroid.<sup>8</sup>

Treatment options include myomectomy (open or laparoscopic), uterine artery embolization (UAE), high-intensity focused ultrasound (HIFU), and hysterectomy (when there is no fertility desire). Because there is a risk of fibroids re-occurring after myomectomy, hysterectomy is considered the definitive treatment for uterine fibroids.<sup>9</sup> However, this option is reserved for women who have completed their families and have no future fertility desire.

Medical management to reduce the size and symptoms may be implored but fertility may be affected negatively with little or no changes on the fibroids. After the removal of submucous fibroids,

the endometrial architectural derangement may be so profound that measures to avoid intrauterine synechiae may be essential. A Virgo intacta at advanced maternal age who insists on keeping her virginity may present a peculiar challenge in their management to restore endometrial integrity.

## Case report

We present a 42-year-old nulliparous businesswoman who presented to our gynaecology clinic with a history of lower abdominal pain and inter-menstrual bleeding for two months and a three-week history of whitish vaginal discharge. The bleeding occurred six days after her usual five days of menstrual flow and lasted for 2 weeks. The blood was bright red with clots. She used at least three rags a day to contain the bleeding and they were well-soaked with blood. The bleeding was associated with easy fatigability and palpitations. The lower abdominal pain was gradual in onset, intermittent, colicky in nature, radiated to the lower back and severe enough to affect her daily activities.

After symptoms started, she used one cycle of COC which was given to her at a pharmacy near her home. The bleeding stopped then reoccurred a month later, upon which she presented at a clinic where she was told that there is an abnormal mass felt in her abdomen and then referred to our gynaecology clinic for further evaluation and management.

She attained menarche at the age of 15 and had a regular monthly cycle with five days of moderate flow before the onset of symptoms. She was Virgo intacta.

She was diagnosed with chronic hypertension some years back but could not specify exactly how long ago. She had not been on regular medication. Her mother and two maternal aunts have chronic hypertension. She has no other known personal or family history of chronic illness.

She was a single businesswoman who lived in a family home with her mother and other relatives.

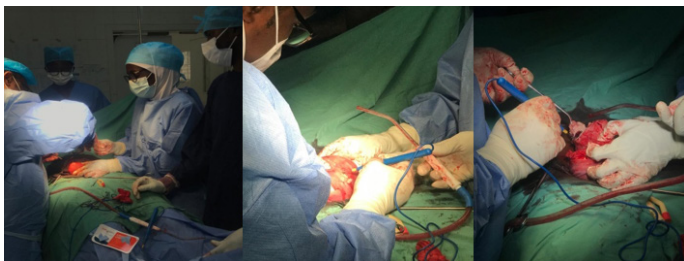
She had normal findings on general examination as well as on examination of the respiratory, cardiovascular, and nervous systems.

On abdominal examination, the abdomen was full, soft, and moved with respiration. There was no tenderness, no palpable mass, and no organomegaly.

On vaginal examination, the hymen was intact and there were whitish discharges seen at the introitus.

Hemoglobin was 13.6g/dl. The USS showed an enlarged and distorted uterus with multiple heterogeneous echogenic masses, the largest of which measured 3.16x3.23cm. There was also moderate dilation of the left kidney calyces with the kidney measuring 10.4x4.6cm. No ureteric stone was seen. The impression was dilated calyceal moderate obstructive uropathy with multiple submucous fibroids.

A diagnosis of obstructive uropathy with submucous fibroids in a chronic hypertensive was then made. She was counseled on her condition and on the management options and then booked for an open abdominal myomectomy (Figure 1).



**Figure 1** Open abdominal myomectomy.

She was put on oral mefenamic acid, tranexamic acid, and hematinics while awaiting surgery.

Intraoperative findings were multiple uterine fibroids (four intramural and four submucosal the largest of which measured 2x3cm) with normal fallopian tubes, ovaries, and bladder. The endometrium was breached and repaired during the surgery.

Her clinical condition and vitals were stable postoperatively. Her postoperative hemoglobin was 10.3g/dl. She was discharged home on the 3rd postoperative day on Flagyl, Augmentin, and Nifedipine and combined oral contraceptives (microgynon). On her first follow-up visit two weeks after discharge, she had no complaints and the surgical site was clean, dry, and healing.

On her second visit four weeks later, she reported that she had had withdrawal bleeding for six days. She was stable and the surgical site was well healed.

On her third visit a month later, she complained of painful urination. Urinalysis showed leukocytes of 1+ and positive nitrites. She was put on oral nitrofurantoin and the microgynon was continued.

On her fourth visit two weeks later, the urinary symptoms had resolved. On her fifth visit a month later (14 weeks postoperatively), the microgynon was discontinued.

She was discharged from the clinic 20 weeks post-surgery. At the time, she was seeing her menstrual period regularly with six days of light bleeding.

## Discussion

Our subject was Virgo intacta and had hopes of having a child of her own in the future, despite the likely difficulties. In a patient (such

as ours) who has future fertility desire, conservative interventions such as myomectomy, uterine artery embolization and HIFU remain standard surgical options as they are fertility preserving and perhaps enhancing. The radiological interventions such as UAE and HIFU may not be readily available in many settings including ours because of cost and expertise. Therefore she was offered myomectomy.

There are various approaches by which a myomectomy can be performed. These include laparotomy, laparoscopy, and hysteroscopy. The use of hysteroscopy is limited to the removal of submucosal fibroids. Laparotomy and laparoscopy, on the other hand, can be used in the treatment of various types of fibroids. As such, laparoscopy and laparotomy were the two options available and offered to our patient. However, due to financial constraints, she opted for a laparotomy or open abdominal myomectomy.

Regardless of the approach to surgery, myomectomies lead to uterine trauma which can cause a condition called Asherman's syndrome. Asherman's syndrome is a condition in which there is the formation of uterine synechiae or intrauterine adhesions. These are abnormal fibrous bands that connect tissue surfaces in abnormal locations.<sup>10,11</sup>

In the management of fibroids in a woman who insists on preserving her fertility, the preservation of the function of the uterus must be considered to be as essential as the removal of the tumor(s) and relief of symptoms.

Uterine synechiae can lead to problems such as menstrual cycle disorders, infertility, recurrent miscarriages and pregnancy complications.<sup>12</sup> As such, the prevention of this complication in a woman with fertility desire who is undergoing a myomectomy is crucial to the overall success of the management. This is especially true in our case where an open abdominal approach was used because the risk of adhesion formation is thought to be higher with laparotomies than with other surgical approaches.<sup>13,14</sup>

Furthermore, in our case, the endometrium was breached during the myomectomy. Studies have found that, while synechiae can occur in the absence of endometrial opening, the risk is higher when the endometrium is breached.<sup>15,16</sup> As such, the prevention of synechiae formation was crucial to our management of this patient. However, the fact that she was Virgo intacta posed unique challenges.

There are several agents used for the prevention of uterine synechiae. These agents, referred to as anti-adhesion agents, can be pharmacological or non-pharmacological.

Non-pharmacological anti-adhesion agents are used to keep injured tissues away from each other during the period of tissue healing as it is believed that adhesions form when injured surfaces come into contact with each other. They can be categorized as barrier and fluid agents.

At present, hyaluronic acid gel is a fluid agent that is widely used in the primary prevention of adhesion after hysteroscopic adhesiolysis. However, its efficacy is still under debate.<sup>17-19</sup> Recently a metanalysis to systematically evaluate the efficacy of hyaluronic acid gel in preventing the recurrence of intrauterine adhesion after hysteroscopic adhesiolysis was conducted.<sup>20</sup> The conclusion was that, hyaluronic acid gel could reduce the recurrence rate of intrauterine adhesion, but had no significant effect on the postoperative pregnancy rate. The use of novel degradable polymeric film (DPF) to prevent intra-uterine adhesions (IUAs) after hysteroscopic surgery has been suggested by some colleagues working elsewhere<sup>21</sup> as no IUA was seen at 6 weeks post-surgery. However, more studies are needed as the sample size was small.

Barrier agents include Interceed® (an oxidized regenerated cellulose membrane that can be placed over sutures and damaged peritoneal surfaces) which is not commonly used in post intrauterine surgeries, urinary catheters and intrauterine devices. The use of urinary catheters and intrauterine devices are well established. While there is no non-pharmacological agent that totally prevents adhesion formation, several studies have shown significant reduction of adhesion formation with the use of barrier agents.<sup>22,23</sup>

There are several pharmacological agents with various mechanisms of action that have been explored in literature. Despite their strong theoretical basis and the fact that some of these agents have been tested with positive results in animal models, there is currently no pharmacological anti-adhesion agent that has been proven to be highly effective in humans. Although some of them may be used for various reasons post-surgery, not particularly for prevention of adhesions.

Some of the pharmacological anti-adhesion agents that have been studied include heparin, steroids, gonadotropin-releasing hormone (GnRH) agonists, recombinant plasminogen activator (PA), and estrogen and progesterone. It is believed that heparin works by preventing fibrin blood clot formation which serves as a base for adhesion formation and steroids work by reducing peritoneal inflammation which stimulates adhesion formation.<sup>24</sup> GnRH agonists and PA are believed to work by increasing fibrinolytic activity in peritoneal fluid to inhibit adhesion formation.<sup>25,26</sup> The cyclical use of estrogen and progesterone postoperatively is believed to stimulate the endometrium and cause re-epithelialization of scarred surfaces.<sup>27</sup>

In our setting, several anti-adhesion agents are not accessible to patients because of resource constraints. The options currently available for the prevention of intrauterine synechiae are Foley catheter insertion, intrauterine device insertion and combined oral contraceptive pills.

Because our patient was Virgo intacta and wanted to remain so for reasons best known to her, the insertion of a Foley catheter or intrauterine device via the vagina were not viable options. As such, the only option available was the use of combined oral contraceptive pills. She used the pills for 14 weeks postoperatively and continued to have a regular monthly cycle with light bleeding.

## Conclusion

Our study indicates that, in resource-constrained settings, the use of estrogen and progesterone started immediately after surgery for the prevention of intrauterine synechiae may be a viable option with good outcome in patients who are Virgo intacta.

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## Conflicts of interest

There is no competing interests between the authors.

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