

# Management of a case of large uterine leiomyoma with deep vein thrombosis

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### Abstract

Deep venous thrombosis (DVT) is a potentially fatal condition. The association of this condition with uterine leiomyoma has rarely been reported in the medical literature. In this report we present a rare case of left lower limb DVT in a 30-year-old woman with a large fibroid. She is sub fertile for 8 years and had a history of heavy menstrual bleeding for 6 months. Examination revealed 20-week size abdominopelvic mass. She had developed left lower limb DVT, 3 months back and imaging investigation confirmed DVT in left femoral vein. She was on an oral anticoagulant. The patient was successfully managed with Inferior Vena Cava (IVC) filter insertion and abdominal myomectomy. Multidisciplinary involvement involving gynaecologist, haematologist, interventional radiologist and anaesthetist are crucial for successful outcome.

**Key words:** leiomyoma, deep vein thrombosis, inferior vena cava filter, abdominal myomectomy

### Introduction

Virchow's Triad, implicates three contributing factors in the formation of thrombosis: venous stasis, endothelial damage, and hypercoagulability<sup>1</sup>. Venous stasis occurs in women who have a sedentary life style or who are immobilized because of illness or surgery. Any obstruction to the flow of blood in the peripheral veins will also result in stasis. Endothelial damage may occur from trauma, such as a lower limb fracture or from excess compression of veins during travel or at surgery. A hypercoagulable state occurred by multiple

factors such as haematological conditions such as estrogen therapy, pregnancy, polycythemia, thrombocytosis, acquired thrombophilia and inherited thrombophilia<sup>2</sup>.

Leiomyomas, also known as fibroids are benign, monoclonal tumors of the smooth muscle cells in the uterus. It remains asymptomatic in most of the women or may have symptoms of abnormal uterine bleeding, abdominal distention or discomfort, pelvic pressure symptoms like increased frequency of urination and pelvic pain<sup>3</sup>.

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Women with leiomyomas are also at an increased risk of developing venous thromboembolism due to multiple different mechanisms. Menorrhagia due to fibroids, leads to low haemoglobin and reactive thrombocytosis. These are risk factors for developing venous thromboembolism (VTE)<sup>2,4</sup>. Pressure effect from large uterine fibroids, can result in venous stasis of the lower limbs, leading to venous thromboembolism.

Patients with uterine fibroid and venous thromboembolism have peculiar problems in management. The fibroids can cause the VTE or make this problem worse. Same time the treatment of thromboembolism with anticoagulants usually exacerbates the symptoms of uterine fibroids, causing more menorrhagia. Managing these patients surgically is challenging as the fact that anticoagulation must be reversed prior to surgery, difficult in preventing primary haemorrhage during the procedure and the risk of developing further VTE during this period should result in fatal pulmonary embolism.

We report a rare case of a large fibroid uterus presenting with DVT, treated with IVC filter and abdominal myomectomy.

### Case report

A 30-year-old woman got admitted with the history of heavy menstrual bleeding for 6 months duration. She is married for 8 years and having primary subfertility for 8 years. She is a known patient with Type 2 Diabetes Mellitus for 4 years with poor control and hypothyroidism for 4 years on thyroxin. She was investigated for primary subfertility and has undergone diagnostic laparoscopy and tubal patency test 3 years back. She had a regular monthly cycle, and noticed prolonged heavy bleeding for last 6 months. She is having fertility wishes. She had frequent hospital admission to local hospital and she was diagnosed to have large multiple fibroids in uterus. Where she was transfused with 3 units of blood and medically managed for fibroid uterus. She was given 6 doses of monthly GnRH analogue, one dose of Depot medroxy-progesterone acetate intra muscular injection and finally started with oral norethisterone treatment. Her symptoms did not improve with medical management. While on hospital stay at local hospital, three months prior to this admission she had developed left lower limb DVT and started an oral anticoagulant (6.5mg oral daily warfarin).

Physical examination revealed her body mass index of 22 kg/m<sup>2</sup>. She was haemodynamically stable. Her abdomen examination revealed non-tender, firm, mobile 20 weeks gravid uterus size of the abdominopelvic mass, clinically suggestive of fibroid. Her both lower extremities appeared normal without swelling or tenderness. Distal pulses were good bilaterally.

Basic blood investigations were normal, except clotting profile. Prothrombin time/international normalized ratio (PT/INR) was 2.44. Ultrasound (USS) abdomen and pelvis had shown bulky uterus with multiple fibroids along with right side hydroureter and hydronephrosis. Bilateral leg venous duplex USS had shown left side DVT, noted thrombus extended to the level of femoral vein. The thrombosed vein had partial recanalization of DVT and resolution of left popliteal vein DVT.

Patient was counselled regarding her condition and management plan. Management plan was taken with the multidisciplinary team (MDT) which concluded a Consultant Obstetrician and Gynaecologist, Consultant Haematologist, Consultant Physician, Consultant Anesthetist, and Interventional Radiologist. Her medical conditions were optimized. She was planned for uterine preserving surgery as she has fertility wishes. Warfarin was omitted 5 days prior to the surgery. Daily INR was monitored. Once the INR became less than 2, therapeutic low molecular weight heparin (LMWH) Enoxaparin was commenced. Which was omitted 12 hours prior to surgery. She was well hydrated and DVT stocking was given during surgery and post operatively. The patient was shifted to interventional radiology department for placement of the temporary IVC filter to prevent pulmonary embolism 3 days prior to surgery when INR was less than 1.6.

Uterus was enlarged to 20-weeks gravid uterus size and two anterior intramural fibroids were noted. Myomectomy was performed under general anesthesia. Intra operative period was uneventful with estimated blood loss of 400ml. LMWH Enoxaparin was started on the first post-operative day, 12 hours after surgery in the absence of bleeding. The patient was given 1-unit packed cell during the postoperative period and advised to wear DVT stockings over her legs. Warfarin was bridged with LMWH. The post-operative period was uneventful. INR was 2.5 before discharge and the patient was advised to continue warfarin. IVC filter was removed on postoperative day 14. She was followed up in haematology and gynaecology clinic. INR was maintained between 2-3. Warfarin was

planned to tail of in 6 months' time by the Haematology Team. Her heavy menstrual bleeding has been settled, in case if she gets heavy bleeding after correcting INR, we planned to treat her medically with norethisterone.

## Discussion

The coincidental findings of deep vein thrombosis in cases of large uterine fibroids are rare. Large uterine fibroids are potential causes of lower extremity venous stasis which is more common in left side<sup>6</sup>. Management of uterine leiomyoma depends on several factors such as clinical presentations, number of fibroids, location of fibroids, associated complications, medical fitness of patients, effect on quality of life and fertility wishes<sup>3</sup>. Accordingly, management options varied as conservative, medical, minimally invasive options or open surgical. Management of the large leiomyoma complicated with DVT has same factors governing management. Treatment depends on individual patient needs and risk factors.

In the present case, large fibroid uterus could be the reason for development of left leg DVT due to the mass effect contributed for venous stasis. As she has primary subfertility for 8 years we decided to go for uterine preserving surgery. Proper management of anticoagulation is important in these cases. Placement of an IVC filter prevents life-threatening saddle pulmonary embolism before, during or after surgery, and allows discontinuation of anticoagulation in the peri-operative period so that surgery can be undertaken safely<sup>7</sup>.

## Conclusion

DVT by the compression of IVC and pelvic veins is a rare complication of large leiomyoma of the uterus. This case highlights the challenges associated with management of a rare case of venous thromboembolism associated with large uterine fibroids and the early multidisciplinary involvement involving Gynaecologist, Haematologist, Interventional Radiologist and Anaesthetist is crucial for a better outcome.

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