Deep Venous Thrombosis Associated with a Large Leiomyomatous Uterus

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A 47-year-old woman with marked anemia had suffered from deep venous thrombosis of left leg for 1 day. History taking revealed a large amount of vaginal bleeding for 10 days. Sonography revealed a uterine myoma and pelvic cyst. Treatment was initiated with enoxaparin. After total hysterectomy and right salpingo-oophorectomy, Doppler studies revealed restoration of patency in the left femoral vein. Complete clinical examination failed to identify any other prothrombotic condition. These results suggest that a large uterine myoma compressed veins in the pelvis, and the resulting impaired blood flow caused deep venous thrombosis of the lower extremities.

Key words: deep venous thrombosis, leiomyoma, uterine myoma

Introduction

In the classic triad of Virchow, stasis of blood flow, disruption of the vascular endothelium and hypercoagulability of blood have all been recognized as risks for developing deep venous thrombosis (DVT). Those patients with heart failure, malignant disease, pregnancy, long-term bed rest, bone fractures, surgical procedures, long-haul air travel, obesity and use of oral contraceptives have also shown associations with DVT (1-3). Below we describe a woman whose large uterine myoma was the sole identified risk factor for the development of DVT. This patient was successfully treated with anticoagulation therapy and total hysterectomy. No relapse has been observed after a 3-month follow-up.

Case Report

A 47 year-old, mentally handicapped woman, gravida 8, para 3, abortion 5, presented to the emergency department with painful disability and marked swelling of the left leg present for 1 day. She was also noted with menorrhagia for 10 days. Her height was 150 cm, weight 48 kg. On admission, her pulse rate was regular at 109 beats per minute, the blood pressure was 120/90 mmHg, and the respiratory rate was 22 breaths per minute. No family history of coagulopathy or systemic disease was found. The operation history was cesarean section once. This patient was a nonsmoker and denied alcohol, illicit drugs or oral contraceptive use.

Physical examination revealed the left calf and thigh were firm and tender on palpation. The color and capillary refill were normal. There was a Homans’ sign present in the left leg. Bimanual pelvic examination revealed a tender, enlarged, lobulated uterus with the fundus level at the umbilicus. There was no sign of peritoneal irritation. Ultrasound examination later revealed
a uterus 13.5 cm in length partially compressing the left pelvic vein, and also a right ovarian cyst. Radiographs of the chest revealed a normal cardiomeediastinal silhouette. Lower extremity and pelvic Doppler studies demonstrated thrombosis in the left iliac and femoral veins. Contrasted abdominal and pelvic computed tomography (CT) was consistent with the physical examination, and ultrasound findings, and demonstrated the close proximity of the enlarged uterus to the pelvic veins (Figs. 1 & 2). Pertinent negative CT findings included the absence of hydronephrosis or hydroureter. Cervix was found to be smooth under specular examination. Bilateral adnexa were found soft and free of adhesion. Laboratory findings were hemoglobin level 5.8 g/dL with indices indicating iron deficiency anemia, mean corpuscular volume 66.3, prothrombin time 12 seconds and partial thromboplastin time 24.8 seconds. The D-dimer levels were 12, 120 μg/L. The tumor markers were all within normal limits. As a result, the possibility of pelvic malignancy was ruled out before further treatment.

Enoxaparin treatment, 40 mg/d subcutaneously, was initiated in the emergency department and 4 U of packed red blood cells were transfused due to anemia. After 2 days of treatment, there was little improvement in the leg edema or pain control. Then we decided to treat the patient surgically and removed the leiomyomata compressing the vein. On the next day, the patient underwent a total abdominal hysterectomy and right salpingooophorectomy without complications. Enoxaparin was restarted in 12 hours after surgery.

During surgery, no intraperitoneal abnormalities were observed other than a marked enlarged uterus and right side ovarian cyst. The enlarged uterus was found compressing directly to the psoas muscle. Since the patient is thin and short, the abdominal and pelvic cavity is narrow and short of adipose tissue in the retroperitoneal space. This results a direct compression of the iliac vessels by the enlarged uterus. The left pelvic veins seemed dilated and congested. The gastrocolic omentum, cecum, ascending colon and pelvic organs were adhered to the tumor. Gross pathological inspection
revealed a 590 g uterus with 2 intramural tumors. The right ovary shows a multilocular cystic mass with mucoid content. Histological examination of the intramural tumors revealed a picture of leiomyoma and simple mucinous adenoma. The patient was discharged on hospital day 8 after an uncomplicated postoperative course. On follow-up, her lower extremity edema and pelvic pain had diminished considerably. Doppler studies performed 2 weeks later demonstrated completely opened femoral and iliac veins with thickened walls but no signs of compression or thrombosis. She was continued on oral Coumadin with regular monitoring to keep her international normalized ratio (INR) between 2.0 and 3.0 for 3 months.

Discussion

Many cases of intraperitoneal organ compression by uterine myoma have been reported. The size, location and orientation of a uterine myoma determine the presence and degree of symptoms. Hydroureter and hydronephrosis are well-documented examples\(^4\). Mesenteric vein thrombosis, acute intestinal gangrene and cases of acute abdomen have also been reported\(^5\). Large tumors cause pelvic venous congestion with edema of the lower extremities and constipation. The spectrum of clinical presentation has ranged from ovarian vein thrombosis to pulmonary vein thrombosis. Many previous reports of uterine myoma with pelvic vein thrombosis were complicated by other risk factors for thrombosis, such as high-dose norethisterone acetate\(^6\), history of venous insufficiency, lower extremity vein stripping or prior deep venous thrombotic events\(^4,7\).

Patients with deficiencies of protein C, protein S and antithrombin III are also at risk of DVT. In our patient, these coagulation risk factors were unable to be evaluated due to early initiation of anticoagulation therapy, which would have altered these test results. Since the patient had no...
previous personal and family history of thrombotic phenomena, the deficiencies of these coagulation factors are unlikely.

In our patient, the giant uterine myoma with large amount of vaginal bleeding led to severe anemia (hemoglobin 5.8 g/dL). This can be explained only by the mental handicap of the patient and the ignorance of her families. Anatomically, as well as with previously documented cases, it is logical to conclude that pelvic and/or lower extremity vein thrombosis is a potential complication of uterine myoma\(^{(8,9)}\).

In conclusion, we have reported here a rare case in which a large uterine leiomyomata may have been the sole identified risk factor of DVT without any other prothrombotic conditions.

References

巨大子宮肌瘤引發之深部靜脈栓塞

甘宗本 張 帆

一位47歲的婦女因為左腿劇烈的腫、痛而至本院求診。該婦女並有嚴重之貧血。超音波檢查診斷為左腿的深部靜脈栓塞，並有一巨大子宮肌瘤及右卵巢囊腫。患者立即接受抗凝血劑治療，並隨後接受子宮全切除手術及右側卵巢輸卵管摘取手術。子宮肌瘤是這位病患發深部靜脈栓塞的主要危險因子。

關鍵詞：深部靜脈栓塞，子宮肌瘤