

Spontaneous Rupture of the Left External Iliac Vein

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Recently, we have experienced a case of spontaneous rupture of the left iliac vein in a 62-year-old woman, who had been suffering from hemiparesis and chronic constipation. An urgent laparotomy was performed for massive hemoperitoneum without knowing the bleeding point, and laceration on the left external iliac vein was repaired. Spontaneous rupture of the iliac vein is extremely rare. However, it should be included in differential diagnoses of the patient with massive hemoperitoneum who have no known pathology or any evidence of blunt trauma.

Key Words: Vein rupture, iliac vein, hemoperitoneum, bleeding

INTRODUCTION

The spontaneous rupture of an iliac vein is rare and likely from major trauma or injury during pelvic surgery. Spontaneous non-traumatic rupture is even rarer, with only 18 cases reported in the literature.¹⁻³ Most cases thus have been misdiagnosed and treated inadequately.⁴ Recently, we have experienced a case of spontaneous rupture of the left iliac vein in a 62-year-old woman. We are reporting our case and the possible causes and treatment are discussed.

CASE REPORT

A 62-year-old woman with a history of cerebral hemorrhage and left side hemiparesis was re-

ferred to our emergency room because of sudden-onset lower abdominal pain and abdominal distension. On arrival, her blood pressure was 80/40 mmHg and her pulse rate was 97 beats per minute. Abdominal examination revealed a large, tender, non-pulsatile mass in the left lower quadrant. Bilateral femoral pulses were palpable and there was no leg swelling. The patient had no recent history of trauma. The patient's medical history showed that she had been treated for hypertension and chronic constipation.

Blood tests showed anemia, with a hemoglobin of 7.0 g/dl, and a hematocrit of 22.4%. Renal function was normal with a serum creatinine level of 1.1 mg/dl. Other laboratory test results were all within normal limit. An abdominopelvic CT scan revealed hematoma in the left pelvic cavity, measuring 22 × 13 × 10 cm. A calcified myoma in the uterus was also noted (Fig. 1).

Initial diagnosis was an ovarian cyst rupture with hemorrhage. A physician in the Emergency Room consulted a gynecologist who arranged an emergency laparotomy because of the severity of her condition. When the abdominal cavity was open, large hematoma and active bleeding were observed but the ovaries and the uterus were found to be normal. Because of sudden deterioration of her vital signs during the exploration, by gynecologist vascular surgery was consulted.

A longitudinal laceration, about 4 cm in length with sharp, clean edges, was found on the anterior wall of the left external iliac vein causing extrinsic compression of the femoral triangle and common iliac vessels. Venous obstruction or other etiologic factors were not detected. The external iliac vein was isolated and the laceration

Received January 9, 2003
Accepted October 4, 2003

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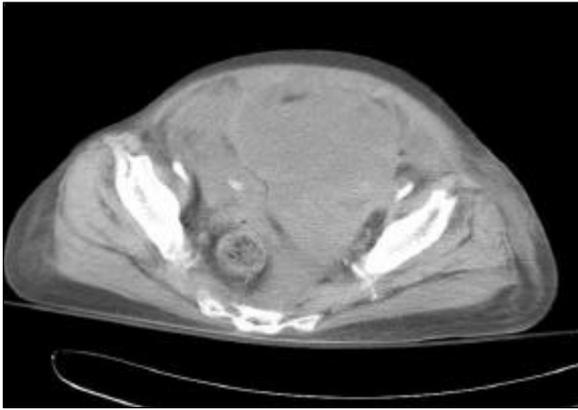


Fig. 1. CT scan of pelvis demonstrates huge mass lesion arising from left iliac fossa displacing bladder to right and calcified myoma in uterus.

was closed continuously using 4/0 Prolene sutures. No debridement was necessary. The patient recovered without complications. Prophylactic anticoagulation with low molecular weight heparin was given initially and changed to warfarin on the fifth day following operation.

DISCUSSION

The cause of the spontaneous rupture of the iliac vein is not known and the diagnosis is made when other possible causes of free peritoneal or retroperitoneal hemorrhage are excluded. One of the etiologic factors is venous hypertension that is triggered by an overlying thrombus⁵ or a Valsalva's maneuver (such as coughing, defecation, etc).^{1,4,8} One of the conditions that can increase venous pressure is constipation. However, in this patient, it was not clear that increased venous pressure from constipation had something to do with the venous rupture because she used laxatives regularly.

The first symptom of spontaneous iliac vein rupture was hypovolemic shock in almost all reported cases. Iliac vein rupture must be, therefore, considered as an emergent condition, and resuscitation and surgical management must be similar to that involving a ruptured aortic aneurysm.^{9,10} If the patient's vital signs and condition are stable, an abdominopelvic CT scan can be helpful in making the diagnosis but may not be

relied upon heavily.

The ideal treatment consists of maintaining continuity in the deep-lying venous network.¹ In most cases, repair was achieved by direct suture with or without insertion of a caval filter.¹ The vein can be ligated at both proximal and distal portion for bleeding control. A possible alternative to ligation of the vein is a bypass reconstruction.¹ It has been suggested that even temporary patency may prevent chronic venous insufficiency by allowing time for the collateral venous channels to develop.⁴ Postoperative anticoagulation⁴ along with active calf muscle exercise and wearing a compression stocking are helpful to avoid deep vein thrombosis and chronic venous insufficiency. We administered low molecular weight heparin, substituted later by warfarin, for prophylaxis of deep vein thrombosis.

Spontaneous rupture of the iliac vein is a vascular emergency that should be treated immediately to prevent death. It should be considered as one of the differential diagnoses in patients with hypovolemic shock, who have sudden-onset lower abdominal pain or leg pain. Early diagnosis, prompt resuscitation, and repair of the vein can give excellent results.

REFERENCES

1. Nicolas Gaschignard, et al. Spontaneous rupture of the left common iliac vein. *Ann Vasc Surg* 2000;14:517-8.
2. Pedley D, Nangy J, Nichol N. Spontaneous iliac vein rupture: case report and literature review. *J R Coll Edinb* 2002;47:510-1.
3. Jazayeri S, Tatou E, Cheynel N, Becker F, Brenot R, David M. A spontaneous rupture of the external iliac vein as a phlegmasia cerelea dolens with acute lower limb ischemia: case report and review of the literature. *J Vasc Surg* 2002;35:999-1002.
4. Lin BC, Chen RJ, Fang JF, Lin KE, Wong YC. Spontaneous rupture of the left iliac vein: case report and review of the literature. *J Vasc Surg* 1996;24:284-7.
5. Elliot D, Ware CC. Spontaneous rupture of the external iliac vein. *J R Soc Med* 1982;75:477-8.
6. Noszczyk W, Orzeszko W. Spontaneous rupture of the left iliac vein. *Arch Surg* 1983;118:1227.
7. Stock SE, Gunn A. Spontaneous rupture of the iliac vein. *Br J Surg* 1986;73:565.
8. Forsberg JO, Bark T, Lindholmer C. Nontraumatic rupture of the iliac vein. *Eur J Vasc Surg* 1988;2:267-8.
9. McDonald RT, Vorpahl TE, Caskey J. Spontaneous

rupture of the iliac vein. *Vasc Surg* 1980;14:330-3.
10. Yamada M, Nonaka M, Murai N, Hanada H, Aiba H,

Funami M, et al. Spontaneous rupture of the iliac vein:
report of a case. *Surg Today* 1995;25:465-7.