

# Case Report

## Étude de cas

### SPONTANEOUS COMMON ILIAC VEIN RUPTURE: A CASE REPORT

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A 68-year-old woman, admitted because of acute lower quadrant abdominal pain but no history of trauma, underwent laparotomy for a suspected ruptured aortic aneurysm. Exploration revealed a 20-mm longitudinal tear in the left iliac vein. The vein was repaired primarily. Her postoperative course was complicated by deep vein thrombosis. Spontaneous rupture of the iliac vein without trauma is rare, but occurs predominantly in healthy white women between the ages of 40 and 80 years. Various causative mechanisms have been described: inflammation of the vessel wall secondary to thrombophlebitis, proximal obstruction of the iliac vein and spontaneous rupture without obstruction or thrombosis. In many cases an increase in intra-abdominal pressure is noted.

Une femme de 68 ans admise à cause d'une douleur abdominale aiguë au quadrant inférieur mais qui n'avait pas d'antécédents de traumatisme a subi une laparotomie parce qu'on soupçonnait une rupture d'un anévrisme de l'aorte. L'exploration a révélé un déchirement longitudinal de 20 mm de la veine iliaque gauche. La veine a été réparée sur-le-champ. Une thrombose veineuse profonde a compliqué l'évolution postopératoire. La rupture spontanée de la veine iliaque sans traumatisme est rare, mais elle se produit surtout chez les femmes blanches en bonne santé, entre 40 et 80 ans. On a décrit diverses causes : inflammation de la paroi du vaisseau consécutive à une thrombophlébite, obstruction proximale de la veine iliaque et rupture spontanée sans obstruction ou thrombose. Dans nombre de cas, on constate une élévation de la pression intra-abdominale.

Spontaneous rupture of the iliac vein is rare, especially when trauma is not involved. This report describes the case of a woman who had a tear of the left iliac vein without associated trauma.

#### CASE REPORT

A 68-year-old woman was admitted with acute left lower quadrant abdominal pain that appeared suddenly while bowling. The pain was sharp, stabbing in nature and without radia-

tion. On the way to the hospital the patient was noted to be hypotensive and diaphoretic with cool extremities.

The patient was an obese, white woman in moderate distress as a result of pain. She was coherent, responsive to verbal commands and gave a brief history of anti-inflammatory use for osteoarthritis. There was no other significant history. She was reluctant to remain on her back as this aggravated her discomfort. She required a bolus of intravenous fluid to elevate her blood pressure from 80 mm Hg to

100 mm Hg. There were no abnormal findings on physical examination, which included cardiovascular, abdominal and rectal examinations.

The preliminary laboratory results are presented in Table I. Radiographs of the chest, abdomen and pelvis were inconclusive, and urgent abdominal ultrasonography was non-diagnostic, due mainly to her obesity.

After the appropriate consent and cross-matching of packed red cells, she underwent laparotomy. A midline incision, extending from the xiphoid to

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the symphysis, allowed access to the peritoneum. A large retroperitoneal hematoma extending from the infrarenal aorta to the left iliac fossa was evacuated and was thought to be secondary to a ruptured abdominal aortic aneurysm. Proximal aortic control was obtained at the infrarenal aorta.

The aorta was examined from the renal arteries to the bifurcation with no sign of rupture. Subsequent to irrigation of this area a persistent ooze of dark blood was noted to arise from behind the aorta at the bifurcation. Gentle exploration in this area revealed a clot, which upon removal resulted in brisk venous bleeding.

Further exploration revealed a 20-mm longitudinal tear in the left common iliac vein. There was no obvious inflammatory process or foreign body injury. A primary repair was completed with a purse-string suture of 3-0 Prolene. No other injury could be found.

The postoperative course was complicated by deep venous thrombosis (DVT) apparent on the sixth day and demonstrated by computed tomography (CT) to extend from the knee to the pelvis in the iliofemoral venous system. CT of the abdomen documented

free intra-abdominal blood. She subsequently underwent placement of a Greenfield filter and was discharged home 13 days postoperatively.

## DISCUSSION

Spontaneous rupture of the iliac vein without a history of trauma is relatively rare. A review of the literature revealed only 14 documented cases.<sup>1-13</sup> All of the cases, including the one reported here, indicate a predominance of this type of injury among white women between 41 and 83 years of age, who were relatively healthy, with quite diverse predisposing factors (Table II).

The *left* common iliac vein appears to be most often affected since only 2 of the reported cases involved the right iliac vein.<sup>1,6</sup> The injury usually affects the anterior surface, with the size of rupture ranging from 8 to 40 mm. The most common presenting symptoms were an acute onset of severe lower abdominal pain with hypotension and a tender nonpulsatile lower abdominal mass.

In all but 2 cases<sup>4,13</sup> the patient underwent laparotomy for a suspected ruptured abdominal aortic aneurysm on the day of admission. Examination of the retroperitoneal area usually reveals a large hematoma without injury to the aorta. Further exploration of

**Table I**

### Preliminary Laboratory Results

| Test                             | Result |
|----------------------------------|--------|
| Leukocyte count, $\times 10^9/L$ | 10.2   |
| Hemoglobin, g/L                  | 138    |
| Hematocrit                       | 0.399  |
| Platelet count, $\times 10^9/L$  | 378    |
| Serum electrolytes, mmol/L       |        |
| Sodium                           | 141    |
| Potassium                        | 3.9    |
| Chloride                         | 113    |
| Urea, mmol/L                     | 8.0    |
| Creatinine, $\mu\text{mol/L}$    | 120    |
| Prothrombin time, s              | 13.6   |
| Partial thromboplastin time, s   | 19.7   |

**Table II**

### Summary of Reported Cases of Spontaneous Iliac Vein Rupture Without Trauma

| Report   | Age, yr/sex | Injury site                             | Predisposing factor     |
|--|-------------|---|-------------------------|
| Hoosne, Nahas and Vasconcelos, 1961 <sup>1</sup>   | 48/F        | Right external iliac                    | Phlebitis               |
| Herezeg et al, 1967 <sup>2</sup>                   | 41/F        | Left common iliac                       | 24 d post partum        |
| Herrin et al, 1975 <sup>3</sup>                    | 67/F        | Left                                    | Fall 3 d before         |
| Brown, Sanchez and Mannix, 1977 <sup>4</sup>       | 75/F        | Left common iliac — anterior            | Fall 1 d before         |
| McDonald, Vorpahl and Caskey, 1980 <sup>5</sup>    | 46/F        | Left common iliac — anterior            | Thrombophlebitis, 20 yr |
| Elliott and Ware, 1982 <sup>6</sup>                | 72/F        | Right external iliac — anterior, medial | Bending over            |
| Noszczyk and Orzeszko, 1983 <sup>7</sup>           | 48/M        | Left external iliac — posterior         | Pneumonia, coughing     |
| Stock and Gunn, 1986 <sup>8</sup>                  | 79/F        | Left                                    | Vein compression        |
| Forsburg, Bark and Lindholmer, 1988 <sup>9</sup>   | 83/F        | Left external iliac — posterior         | Sigmoiditis/diarrhea    |
| Forsburg, Bark and Lindholmer, 1988 <sup>9</sup>   | 74/F        | Left external iliac — medial            | Defecation              |
| Copeland, Saw and Monk, 1989 <sup>10</sup>         | 63/F        | Left common iliac — anterior, medial    | Hypertension            |
| Hill et al, 1990 <sup>11</sup>                     | 52/F        | Left common iliac — anterior            | Defecation              |
| Van Damme, Hartstein and Limet, 1993 <sup>12</sup> | 63/M        | Left common iliac — anterior, medial    | Defecation              |
| Yamada et al, 1995 <sup>13</sup>                   | 66/F        | Left external iliac                     | Vein compression        |
| Present case                                       | 68/F        | Left common iliac — anterior, medial    | Bending over            |

the venous system reveals a fresh clot, which upon removal displays the apparent injury. A primary repair was completed in all but 2 cases<sup>1,5</sup> in which the vein was ligated instead.

Various theories have been proposed for the etiology of the rupture. They include inflammation of the vessel wall secondary to thrombophlebitis,<sup>1,2,4,9,10</sup> proximal obstruction of the iliac vein caused by compression between the common iliac artery and the sacral promontory,<sup>8,13</sup> and spontaneous rupture without obstruction or thrombosis.<sup>11</sup> In the majority of cases there had been an increase in intra-abdominal pressure associated with coughing,<sup>7</sup> defecation,<sup>9,11,12</sup> delivery,<sup>2</sup> or bending.<sup>6,7</sup> As reported in this case the women experienced symptoms suddenly while bowling, an activity that requires lifting and bending.

It is important to note that whatever the etiology, prompt resuscitation and emergency surgical management are essential in the treatment of this life-threatening condition. Pri-

mary repair with postoperative anticoagulation given prophylactically appears to decrease the risk of postoperative DVT.

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