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CASE REPORT

An acute abdominal syndrome reveals a postoperative ilio-iliac arteriovenous fistula: about one case

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Abstract
Introduction Postoperative ilio-iliac arteriovenous fistula is an unusual but known complication after lumbar surgery.
Case report We report the case of a 74-year-old patient consulted at the emergency department for intense acute abdominal syndrome revealing a post-operative common ilio-iliac arteriovenous fistula 5 years after a lumbosacral arthrodesis L3–S1. The patient was treated with an endovascular arterial stent-graft with immediate vascular and clinical results.
Conclusion Arteriovenous fistula is a possible etiology of acute abdominal syndrome in patients with lumbar or abdominopelvic surgery history.

Keywords Lumbar surgery · Surgery complication · Arteriovenous fistula · Acute abdominal pain

Introduction

Acute abdominal syndromes are one of the first causes of computed tomography (CT) scan requests by emergency physicians. Etiologies are different depending on the age of the patient. The most frequents causes are: cholecystitis, appendicitis, diverticulitis, acute pancreatitis, occlusions or peritonitis. We report the case of a patient consulting for acute abdominal syndrome, which revealed a post-operative common ilio-iliac arteriovenous fistula (IIAVF).

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Case report

A 74-year-old patient consulted the emergency department for intense abdominal pain and vomiting increasing since 2 days. He had a moderate obesity (BMI: 33 kg/m^2), and medical history of: deep venous thrombosis 15 years ago, appendectomy during adolescence and a lumbosacral arthrodesis L3–S1, 5 years ago because of lumbar arthritis. He had no daily treatment.

The intensity of pain led to practice a triple-phase abdominal CT-scan immediately, looking for a mesenteric ischemia. In non-injected phase, no usual abdominal cause of the pain was found. Abnormalities were important pelvic vessels dilatation near the right S1 arthrodesis screw. In the arterial time, the right iliac vein and peri-bladder veins had the same density as the iliac arteries (Fig. 1). The two iliac vessels were closely situated near the right S1 arthrodesis screw (Fig. 2) and the common iliac vein was expanded just under it with many bilateral pelvic varicoses (Fig. 3).

The patient had no heart failure symptoms, which is the typical presentation, furthermore all the clinical, biological and bacteriological assessments were normal.

The hypothesis of a post-operative common ilio-iliac arteriovenous fistula was confirmed 2 days later with a real angio-scanner with a 2 ml/kg Iomeron 400® injection at a rate of 4 ml/min. The patient was also transferred in cardiac surgery and treated with an endovascular arterial stent-graft with immediate vascular, clinical and imaging results (Figs. 4, 5).

Discussion

Vascular complication is an unusual but known complication after lumbar surgery. The incidence seems to be

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Fig. 1 Axial TDM in arterial time showing pelvic varicose

Fig. 2 Sagittal TDM showing the right S1 arthrodesis screw

about 0.05 and 0.1 % [1, 2] in patient with lumbar disk surgery.

Ilio-iliac arteriovenous fistula is most of the time due to a iatrogenic injury like lumbar disk surgery [3], laminectomy [2] appendectomy [4] or cholecystectomy [5]. It can appear after a traumatic abdominal injury [6] or it can also appear spontaneously, because of an iliac artery anevrysm [7] for example.

The right common iliac artery is injured in most cases [2].

Fig. 3 3D view of the Ilio-iliac arterioveinous fistula

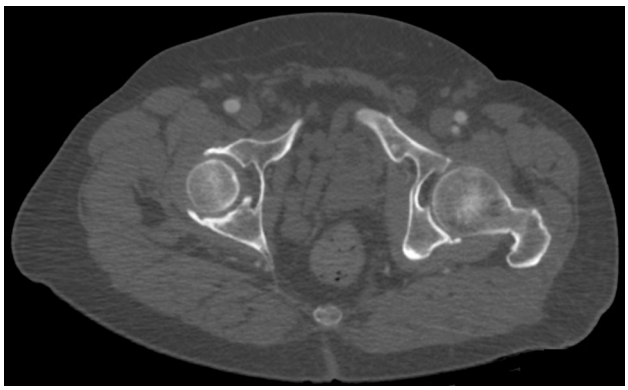

Fig. 4 Postopérative Axial TDM in arterial time

Discovery can be fortuitous, or induced by an abdominal vascular murmur [2], heart failure, dyspnea, palpitations [6], acute abdominal syndromes [5], or leg oedema [8].

In iatrogenic causes, time between surgery and diagnosis of the IIAVF goes from 1 to 15 years.

The most common way to make a definitive diagnosis is the arteriography but CT-scan is increasingly used [9].

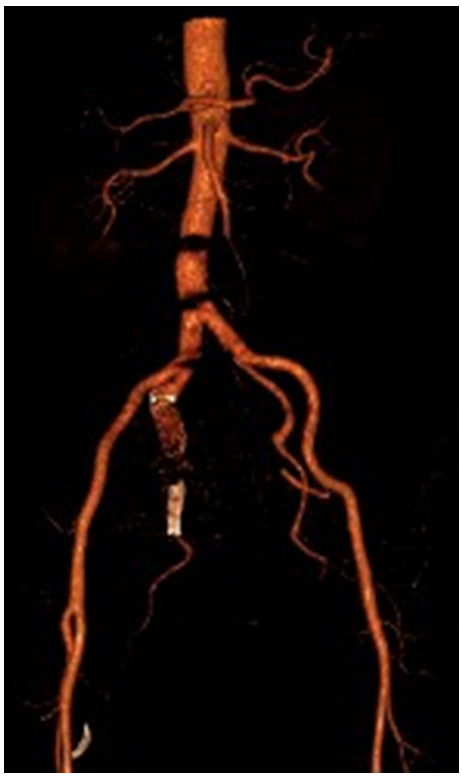

Fig. 5 Postoperative 3D view

Treatment can be laparoscopic suture [4], embolisation [8], endovascular arterial stent graft [10] or associated therapy. Results of treatments are usually immediate but there are some cases of recurrence.

In conclusion, Arteriovenous fistula must be known as a possible differential diagnosis of acute abdominal syndrome especially in patients with lumbar or abdominopelvic surgery history. Symptoms are not specific and treatments have very good and immediate results.

Conflict of interest The authors declare no conflict of interest.

References

1. Szolar DH et al (1996) Vascular complications in lumbar disk surgery: report of four cases. Neuroradiology 38:521–525
2. Duque AC, Merlo I, Janeiro MJ, Madeira EN, Pinto-Ribeiro R (1991) Postlaminectomy arteriovenous fistula: the Brazilian experience. J Cardiovasc Surg (Torino) 32:783–786
3. Lecocq C, Lemaitre J, Wery D, Lebrun E (2011) Iliac arteriovenous fistula as a complication of lumbar disc surgery. Rev Médicale Brux 32:43–45
4. Kuehnl A, Zimmermann A, Pongratz J, Eckstein H (2010) Young girl presenting with heart failure 5 years after laparoscopic appendectomy. Case report of an ilio-iliac AV fistula. Eur J Vasc Endovasc Surg Off J Eur Soc Vasc Surg 40:107–109
5. Karigiannis M et al (2005) Delayed presentation of ilio-iliac arteriovenous fistula following laparoscopic cholecystectomy treated with percutaneous graft-covered stent placement. J Laparoendosc Adv Surg Tech A 15:411–414
6. Bozzani A, Lovotti M, Odero A (2012) Posttraumatic internal iliac arteriovenous fistula. Vasc Endovasc Surg 46:499–500
7. Vandereyken F et al (2012) Spontaneous ilio-iliac arteriovenous fistula due to an iliac artery aneurysm: a case-report. Acta Chir Belg 112:164–166
8. Natali J et al (1984) Arteriovenous fistulae of the internal iliac vessels. J Cardiovasc Surg (Torino) 25:165–172
9. Goto T, Enmoto T, Akimoto K (2009) Diagnosis of an ilio-iliac arteriovenous fistula by multidetector row computed tomography and surgical repair. Interact CardioVasc Thorac Surg 8:387–389
10. O'Brien GC et al (2011) Hybrid management of a spontaneous ilio-iliac arteriovenous fistula: a case report. J Med Case Rep 5:401