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Accessory wandering spleen: Report of a case of laparoscopic approach in an asymptomatic patient

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ABSTRACT

INTRODUCTION: Accessory wandering spleen is a rare but dangerous condition. Abnormalities of the ligamentous apparatus of an accessory spleen may evolve into torsion of its vascular axis, which can lead to a splenic infarct making surgery necessary. Patients are often asymptomatic and the diagnosis can be accidental. An early diagnosis and a correct treatment are fundamental.

PRESENTATION OF CASE: In this case report a young woman underwent laparoscopic surgery after an incidental finding at a Pelvic Ultrasound of an accessory wandering spleen.

DISCUSSION: In literature are reported cases of asymptomatic patients with an accessory wandering spleen treated with a conservative approach. However, a torsion or infarct of the accessory wandering spleen leads to emergency surgery. The presence of an independent vascular axis of the accessory spleen reduces the risk of postoperative complications (e.g. thrombocytosis) and the administration of low molecular weight heparin should prevent the risk of portal thrombosis.

CONCLUSION: We suggest performing surgery with a laparoscopic approach in patients with accessory wandering spleen, though asymptomatic, because of the risk of serious complications in case of accessory spleen torsion.

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1. Introduction

Wandering spleen is a rare condition (<0.5%^{1–4}), more frequent in women of 20–40 years^{5,6} or in children less than 10 years old,^{1,3,5} characterized by an hypermobility of the spleen, caused by an elongation or a defect of its suspensory ligaments. It can be caused by congenital defects in dorsal mesogastrium development or by acquired defects, such abdominal wall laxity or hormonal status in pregnancy,^{3,4,7} as described in the distribution of incidence.

An accessory spleen is present in 10% of the population and it is characterized by the presence of one or more additional splenic masses, developed in initial phases of fetal life in one of the peritoneal sheets. These masses have an average diameter of 1 cm and are localized frequently near the splenic hilum and the pancreatic tail.^{4,8,9} This condition is distinguished from “polysplenia” – a rare anomaly in which the normal spleen is replaced with two or more smaller spleens.

A wandering spleen is at risk of torsion: a chronic abdominal tenderness can be due to a splenic congestion for a difficult venous drainage, while a dangerous-but less frequent-splenic infarct with

an acute and intensive pain is caused by an acute torsion. In case of torsion and a spontaneous derotation the patient may refer an intermittent pain. The problem is that often patients are asymptomatic or report a slight abdominal pain. An early diagnosis and a correct treatment are fundamental.⁶

For all we know, this is the first case reported in literature in which these two conditions are associated in an asymptomatic patient who underwent laparoscopic surgery. In their work Vural et al.,¹⁰ do not specify which surgical approach was performed, instead Bekheit et al.,¹¹ reported the laparoscopic management of a wandering spleen in a patient with polysplenia and Kaniklides et al.,⁶ reported a case of an accessory wandering spleen in a patient with short pancreas. Besides, most of the works are radiological case reports, lacking data on the management of the patients. Absent in literature are data on emergency surgery and its outcome. The aim of this work is to describe how we proceeded and which devices we performed in order to assist with our experience other colleagues in managing similar case.

2. Presentation of case

A 17 years old woman came to our attention after an incidental finding at a Pelvic Ultrasound – performed for other reasons – of a pelvic solid neof ormation, well vascularized, 4.5 cm in diameter,

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Fig. 1. The wandering accessory spleen.

near the left ovary. The patient was asymptomatic, without any comorbidity; she assumed only the oral contraceptive pill. The hematochemical parameters were within range.

A Pelvic and Inferior Abdomen Magnetic Resonance (MR) scan with contrast medium (Gadobenate Dimeglumine) revealed a left paramedian mass, independent from uterus and ovary, with vascular independent structures. At MR-Angiography this mass had a vascular peduncle from splenic vessels (Fig. 1).

We used 3 trocars, 2 of 5 mm, one umbilical and the other in the right iliac fossa, and one of 10 mm positioned in the sovrapubic region. The patient was set in Trendelenburg position in order to facilitate the access to the pelvic accessory wandering spleen. We identified an accessory wandering spleen of 6 cm × 5 cm, localized in the pelvic cavity. The abdominal exploration was negative for other findings. We isolated the vascular peduncle near the splenic axis and then we cut it with *Ligasure* after its ligation with *Emolock*. The accessory spleen was removed with *Endobag* through the sovrapubic trocar, after its morcellation. The duration of the anesthesia was 123 min, that of the surgery 70 min.

The patient was dismissed on the following day in good general conditions with the indication to continue the therapy with low molecular weight heparin (LMWH) for 20 days. The hematochemical parameters were within range. The histological examination of the surgical specimen confirmed the diagnosis of accessory spleen with hyperplasia of the red pulp.

3. Discussion

The development of the spleen starts during the 5th week of gestation with the condensation of mesenchymal cells between the sheets of the dorsal mesogastrium. During the fetal development (8th week) the rotation of the stomach and the growth of the dorsal mesogastrium cause the shift of the spleen in the left hypochondrium. From the fusion of the dorsal mesogastrium with the posterior peritoneum originates the splenorenal ligament; the gastrosplenic ligament is instead the part of the dorsal mesentery between the spleen and the stomach.⁴ An incomplete development of the ligamentous splenic apparatus can lead to a wandering spleen.^{12,13}

The condition of accessory spleen is different from the condition of polysplenia – a complex congenital syndrome characterized also by cardiovascular and visceral abnormalities with a partial visceral eterotaxia and a concomitant levoisomerism. In patients with polysplenia the splenic mass is divided into a variable number of masses (from 2 to 6) of equal dimensions, which together reach the volume of a normal spleen.⁴

The management of this young patient with an asymptomatic but potentially dangerous condition required immediate decisions, based on a balance between risk and benefit. We decided to perform surgery on this patient because of the potential risks resulting from a torsion or infarct of the accessory wandering spleen. The presence of an independent vascular axis of the accessory spleen reduced the risk of postoperative complications (e.g. thrombocytosis). There were no other abnormalities frequently associated with polysplenia. In literature are reported cases of asymptomatic patients with an accessory wandering spleen treated with a conservative approach.¹⁴

The patient was treated with LMWH for 3 weeks after surgery as portal thrombosis prophylaxis, known complication of splenectomy.¹⁵ It is difficult to quantify the incidence of this complication because a lot of patients may not show any symptoms and a Doppler Ultrasound is not a routinary exam after surgery in asymptomatic patients.

The higher risk of splenic and portal vein thrombosis in laparoscopic splenectomy was due to 3 factors: (I) pneumoperitoneum → decreased portal vein flow → stasis → thrombosis); (II) the use of endoscopic stapler to ligate the splenic hilar vessels lead to a reduction of circulation around the ligated area and this enhance the venous stasis induced by the pneumoperitoneum; (III) anti-Trendelenburg position of the patient also reduce the venous return¹⁶ (our patient was set in Trendelenburg position).

4. Conclusion

We suggest performing surgery in patients with accessory wandering spleen, though asymptomatic, because of the risk of serious complications in case of accessory spleen torsion. The laparoscopic approach minimizes the discomfort for the patient and the

administration of LMWH should prevent the risk of portal thrombosis.

Conflict of interest statement

Dr. Alessandro Perin and other co-authors have no conflict of interest.

Ethical approval

Ethical Approval was not necessary in this case report.

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In this case report there are no sponsors.

Author contributions

Dr. Alessandro Perin was involved in case report concept, data collection, data interpretation and writing the paper. Dr. Roberto Cola was involved in case report concept and manuscript revision. Dr. Franco Favretti: was responsible of final approval of the version to be submitted.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

References

1. Buehner M, Baker MS. The wandering spleen. Collective review. *Surg Gyne Obst* 1992;**175**:373–87.
2. Allen KB, Andrews G. Pediatric wandering spleen – the case for splenectomy: review of 35 reported cases in literature. *J Ped Surg* 1989;**24**:432–5.
3. Qasi SA, Mirza SM, Muhammad AA, Al Arrawi MH, Al-Suhaibani YA. Wandering spleen. *Saudi J Gastroenterol* 2004;**10**:1–7.
4. Gayer G, Zissin R, Apter S, Atar E, Portnoy O, Itzhak Y. CT findings in congenital anomalies of the spleen. *Br J Radiol* 2001;**74**:767–72.
5. Desai DC, Hebra A, Davidoff AM, Schnauffer L. Wandering spleen: a challenging diagnosis. *Southern J Med* 1997;**90**:439–43.
6. Kaniklides C, Wester T, Olsen L. Accessory wandering spleen associated with short pancreas. *Acta Radiol* 1999;**40**:104–6.
7. Satydas T, Nasir N, Bradpiece HA. Wandering spleen: case report and literature review. *J R Coll Surg Edinb* 2002;**47**:512–4.
8. Moore KL, Persaud TVN. The digestive system. In: Moore KL, Persaud TVN, editors. *The developing human, clinically oriented embryology*. 6th ed. Philadelphia, PA: WB Saunders Co.; 1998. p. 271–302.
9. Moore KL, Dalley AF. Abdomen. In: Moore KL, Dalley AF, editors. *Clinically oriented anatomy*. 4th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 1999. p. 175–350.
10. Vural M, Kacar S, Koşar U, Altin L. Symptomatic wandering accessory spleen in the pelvis: sonographic findings. *J Clin Ultrasound* 1999;**27**:534–6.
11. Bekheit M, Katri KM, Ezzat T. Wandering hemi-spleen: laparoscopic management of wandering spleen in a case of polysplenia. *Int J Surg Case Rep* 2012;**3**:51–4.
12. Robinson AP. Wandering spleen: case report and review. *Mt Sinai J Med* 1988;**55**:344–428.
13. Woodward DA. Torsion of the spleen. *Am J Surg* 1967;**114**:953–5.
14. Erden A, Karaalp Ozcan H, Cumhuri T. Wandering accessory spleen. *Surg Radiol Anat* 1995;**17**:89–91.
15. Pietrabissa A, Moretto C, Antonelli G, Morelli L, Marciano E, Mosca F. Thrombosis in the portal venous system after elective laparoscopic splenectomy. *Surg Endosc* 2004;**18**:1140–3.
16. Ikeda M, Sekimoto M, Takiguchi S, Kubota M, Ikenaga M, Yamamoto H, et al. High incidence of thrombosis of the portal venous system after laparoscopic splenectomy. A prospective study with contrast-enhanced CT scan. *Ann Surg* 2005;**241**(2):208–16.

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