Bilobate wandering spleen with double torsion of the vascular pedicle. A case report

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INTRODUCTION: Wandering spleen is a rare clinical condition which is often an incidental finding. It is characterized by excessive mobility and displacement of the spleen within the abdomen; although the spleen is usually of normal size it has an elongated vascular pedicle.

CASE STUDY: We present the case of an adult woman who complaining of abdominal pain who was brought to our institution for emergency treatment. She later developed an acute abdomen due to infarction of a wandering spleen caused by double torsion of the vascular pedicle. Emergency splenectomy was performed.

RESULTS: Surgical treatment of a wandering spleen is generally conservative and consists in splenoplexy. In our case, complicated by ischemia leading to irreversible damage of the spleen, splenectomy was the solution.

DISCUSSION: The long vascular pedicle of a migrant spleen is at risk of torsion which can cause irreversible acute ischemia of the spleen. Therefore a timely diagnosis with the use of modern imaging techniques is of primary importance.

CONCLUSIONS: Early interpretation of the symptoms and computed tomography angiography can prevent the complications that result from torsion of the elongated pedicle.

KEY WORDS: Acute abdomen, Bilobate wandering spleen, Splenectomy
monly diagnosed at age 20-40, with a female/male ratio of 7 to 1. This variable incidence according to age and sex can be explained by the fact that wandering spleen can be congenital or acquired. The latter form can be primarily found in multiparous women due to hormonal changes during pregnancy which cause a laxity of the splenic ligaments.

The congenital form of wandering spleen may be due to the lack of one or more of these ligaments, or their improper position caused by an abnormal development of the dorsal mesogastrium that generates the suspensory ligaments of the spleen.

Cases of wandering spleen due to progressive splenomegaly caused by diseases such as typhoid fever, lymphoma, and especially malaria, have also been observed.

Case Report

A 49-year-old woman arrived in the emergency department with nausea and epigastric pain radiating to the back that had begun a few days earlier. The patient had a history of hypothyroidism under pharmacological treatment. She had no history of cardiovascular disease. An ectopic spleen had been incidentally detected on a CT scan performed about 2 years before. On physical examination normal bowel sounds were present in the abdomen and there was no guarding or tenderness. The patient reported normal bowel movements. Blood pressure and heart rate were normal. Respiratory examination was also normal. The patient was afebrile. The patient’s blood tests and electrocardiogram were unremarkable.

Plain abdominal x-rays only showed some small air-fluid levels in the left colic flexure.

Abdominal ultrasound showed an ectopic spleen in the left iliac fossa close to the upper standard limit in size, with minimal perisplenic fluid but no discernible alterations in structure or splenic echotexture. An emergency CT scan, without contrast, confirmed the ultrasound findings and also showed an anomalous rotation of the vascular pedicle with normal vascularity at the splenic hilum. The patient was asked to stay in the hospital for observation and further examination, but she refused. The next day she was back again complaining of diffuse abdominal pain that was most severe on the left side. Significant findings on abdominal examination were guarding and a firm mass with rounded edges palpable in the left iliac fossa and in the suprapubic region. The patient was hospitalized and emergency CT angiography was performed with a 64-slice CT scanner, with thin slices (2.5 mm) and a high flow intravenous contrast medium (120 ml bolus Ultravist followed by 30 ml of saline) ele-

![Fig. 1: A) Plain abdominal x-ray; B) Ultrasound scan with enlarged ectopic spleen with perisplenic fluid; C) CT scan confirms the ultrasound findings and shows anomalous vascular rotation.](image)

![Fig. 2: A) Axial CT scan; B) Coronal CT scan; C) Volume CT scan; D) CT with contrast: point of double torsion of the vascular pedicle.](image)
tronically controlled (3ml/sec) with double elaboration of the images captured in multiplanar reconstruction and volume rendering.

The CT (MSCT) angiography confirmed the presence of an ectopic spleen in the left iliac fossa that was dysmorphic, bilobate, increased in volume from the previous day, and which in graphic contrast phases appeared completely hypodense, because without vascularity of a dual coiling of the vascular pedicle, of the gastrosplenic and the splenorenal ligaments.

The splenic artery, which usually arises from the celiac trunk, did not become opaque after iodinated contrast media has been administered intravenously (IV). The distal segment had a tortuous course with double perpendicular axis rotation causing a complete mechanical obstruction. The patient underwent emergency laparotomy. The spleen appeared increased in size, due to hemorrhagic infarction caused by double torsion of the vascular pedicle and medial non traumatic splenic rupture. Since the spleen did not appear viable after pedicle derotation a splenectomy was performed. Histology confirmed the severe damage suffered by the parenchyma. The patient’s recovery was uneventful and she was discharged on day 8.

Conclusions

The excessive mobility of the spleen due to insufficiency or absence of ligaments normally responsible for anchoring it, may result in recurrent episodes abdominal pain until acute abdomen develops due to complete twisting of the vascular pedicle and consequent organ ischemia. MSTC examination allows a specific and complete diagnosis that ultrasound examination does not. CT findings may vary from a normal spleen, with regular pouting contrast graphic parenchyma after administration of contrast medium, to evidence of a marked structural dishomogeneity. The splenic infarcts appear as markedly hypodense areas and when they extend across most of the organ they are the main indication for splenectomy. Therefore a CT scan must be promptly performed in the case of ectopic spleen associated with recurrent abdominal pain. Ultrasound examination is however preferred for monitoring an asymptomatic ectopic spleen.

Several splenopexy techniques are available for the conservative surgical treatment of an ectopic spleen: fixation of the ligaments with sutures as well as the use of polyglycolic acid nets (Dexon mesh) and/or the creation of a peritoneal pocket in which to place the organ. Laparoscopic splenopexy is certainly to be preferred to the open approach.

We believe that an asymptomatic ectopic spleen should only be monitored with ultrasound imaging. If, instead, the patient has recurrent abdominal pain, splenectomy must be promptly performed to avoid irreversible organ damage.
Riassunto

Il trattamento della torsione del peduncolo di milza migrante è generalmente di tipo conservativo e consiste nella splenopressia, la splenectomia è indicata nei casi complicati da ischemia irreversibile dell’organo. Nel caso in oggetto si tratta di un donna adulta che giunge due volte alla nostra osservazione. Al primo accesso in Pronto Soccorso la donna lamenta dolore epigastrico a sbarra che si irradiia in regione dorsale da alcuni giorni, alvo regolare non vomito. Addome trattabile dolente all’epigastrio, assenza di masse patologiche palpabili. Sottoposta ad esame radiografico di diretta addome ed esame ecografico dell’addome completo, si reperta l’assenza di milza nella sua sede anatomica e la presenza di essa in fossa iliaca sinistra senza alterazioni focali eco strutturali del parenchima con minima falda fluida perisplenica qualche livello idroaereo in flessura sinistra. La paziente viene sottoposta anche a TC in urgenza senza somministrazione di mdc e.v. che conferma milza migrante con minima falda di versamento perilenale con sospetta anomala rotazione del peduncolo vascolare. In anamnesi la paziente era a conoscenza di essere portatrice di milza ectopica. Migliorata la sintomatologia la paziente rifiuta ricovero. Il giorno successivo ritorna in Pronto Soccorso per dolore non più localizzato all’epigastro ma diffuso a tutto addome. Sulla scorta degli esami precedenti viene sottoposta subito ad esame MSTC con mezzo di contrasto che mostra milza migrante, dismorfica bilobata, aumentata notevolmente di volume rispetto al giorno precedente con doppio coiling del peduncolo vascolare completamente avascolarizzata con infarto massivo. Nel caso presentato, l’angio MSTC ha permesso di documentare anche una sottile frattura mediana della milza non sanguinante. Questi reperti hanno orientato al trattamento chirurgico d’urgenza di splenectomia. Il trattamento chirurgico conservativo va effettuato qualora non siano presenti segni di sofferenza vascolare irreversibile.10,11,12.

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