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## Enlarged wandering spleen treated with hemisplenectomy and fixation of the residual spleen

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**Abstract** A case of enlarged wandering spleen presenting as an abdominal mass in a 7-year-old girl is reported. The diagnosis was performed by ultrasonography and confirmed by aortography. Treatment consisted of an elective partial splenectomy and fixation of the residual spleen to the left hemidiaphragm. The patient's symptoms regressed, and now, after more than 2 years, she is doing well. Two years postoperatively scintigraphy demonstrated a good captation of radionuclide by a normal-sized spleen at the left hypochondrium. The results obtained with the procedure that was adopted for treating this case of wandering spleen allow the authors to state that hemispleen fixation is a valid option for treating symptomatic enlarged wandering spleen.

**Keywords** Wandering spleen · Splenectomy · Splenopexy

### Introduction

Wandering spleen is the term commonly applied to splenic hypermobility that results from laxity or maldevelopment of the spleen's suspensory ligaments. It is an uncommon pathologic entity and is especially rare in

children [1]; its diagnosis on clinical grounds alone is very difficult, especially when it occurs as an abdominal emergency due to a torsion of its pedicle. Until 2 decades ago, the treatment of wandering spleen consisted exclusively of splenectomy [2]. At present, when the splenic parenchyma is not damaged by infarction, preservation of the spleen is mandatory, thus making splenopexy the ideal treatment for this condition [3]. We report a case of wandering enlarged spleen, diagnosed preoperatively on the basis of ultrasonography and arteriography, that we successfully treated with elective partial splenectomy and fixation of the residual spleen to the diaphragm.

### Case report

A 7-year-old girl was hospitalized for recurrent episodes of abdominal pain and vomiting. The clinical examination revealed an intraabdominal mobile mass located on the left side. Ultrasound detected that the spleen was absent at the left hypochondrium while a loose and displaced mass of parenchymatous thickness 15 cm in diameter was found at the umbilical region and presented the echostructure of the spleen. An aortography showed a long and moderately enlarged splenic artery that reached the enlarged ptotic spleen (Fig. 1). On the basis of the diagnosis of wandering spleen, a laparotomy was performed. A spleen fixation was decided upon, which turned out to be impossible because of the large dimensions; it was then decided to carry out a partial splenectomy and a fixation of the residual spleen to the diaphragm. After ligating and sectioning the vessels of the spleen's lower half, an elective partial splenectomy was done, suturing the surface of the spleen and fixing it to the left hemidiaphragm using separated nonresorbable stitches.

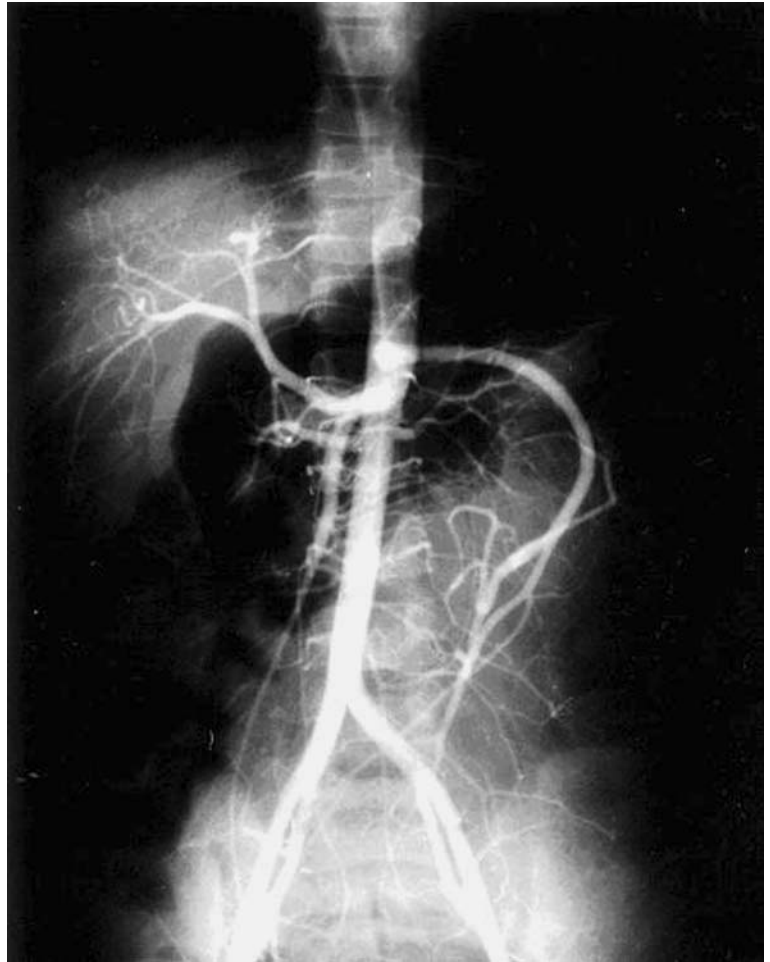
The patient's postoperative course was uneventful, and she was discharged after 5 days. A splenic  $^{99m}\text{Tc}$  scintigraphy at 6 months and at 2 years demonstrated a good radionuclide captation. At the long-term clinical

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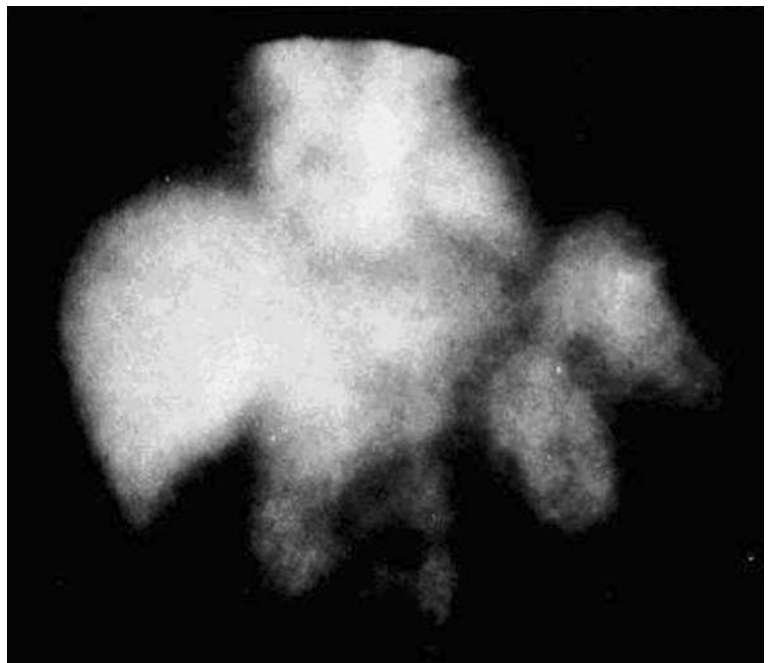
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**Fig. 1** Splenic artery stemming directly from the aorta to reach the spleen on the ectopic side. Note the origin of the hepatic artery from the mesenteric superior artery



**Fig. 2** Scintigraphy demonstrates the subdiaphragmatic position of the residual spleen 2 years after surgery



and hematological follow-up, the patient is well and shows adequate physical growth, and platelet and leucocyte counts are within normal range, with normal erythrocyte shape. Moreover, at follow-ups the patient never presented with specific infectious bacterial problems.

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## Discussion

The occurrence of wandering spleen is related to a probable congenital laxity of its peritoneal attachment to the left diaphragm and retroperitoneum or to incomplete fusion of the dorsal mesogastrium that forms the splenorenal ligament. This leads to the formation of a long vascular splenic pedicle that, in turn, gives origin to the spleen's ptosis, its abnormal mobility, and, consequently, to two types of complications: acute torsion followed by splenic infarction and recurrent torsion followed by a progressive splenomegaly with hypersplenism [4, 5]. The clinical presentation may vary from asymptomatic or paucisymptomatic (light abdominal complaints, mild recurrent colicky pain) or it may appear as a very movable and floating mass of variable size, localized at the mesogastrium or at the lower quadrants of the abdomen. The acute torsion of the wandering spleen presents the clinical features of an abdominal emergency, whereas recurrent chronic torsion is followed by frequent colicky pain of various degree. Laboratory data are nonspecific, but the diagnosis can be confirmed by imaging studies; computed tomography and duplex ultrasonography are the preferred modalities.

The treatment of wandering spleen complicated by torsion and subsequent infarction is splenectomy [2]. On the other hand, the treatment of uncomplicated cases

must be conservative, according to current trends of spleen preservation based on King and Shumaker's observation that splenectomy was associated with a great danger of death from bacterial infections [6]. The conservative modality of treatment of wandering spleen is the splenopexy [7]. When the spleen is much enlarged, splenopexy may be very difficult, as in our case; our solution was to perform an elective partial splenectomy, fixing the residual hemispleen to the diaphragm with an interrupted suture. The scintigraphic control after 6 months and then at 2 years (Fig. 2) demonstrated the optimal captation of the splenic parenchyma, which, together with the subsequent clinical and laboratory evidence of normal spleen function, allows us to state that in a similar condition, the fixation of a reduced spleen is a possible alternative leading to adequate postoperative spleen function over time.

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