



Accessory Splenic Torsion is a Rare Cause of Acute Abdomen: A Case Report and Literature Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Case Report

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ABSTRACT

Background: Accessory splenic torsion is an extremely rare condition. Torsion of the accessory spleen may lead to symptoms of acute abdominal pain with accompanying nausea, vomiting, and fever. Without treatment, torsion can lead to significant complications including hemorrhagic shock, peritonitis or rupture.

Case Presentation: A 47-year-old female patient was admitted to our hospital with complaints of nausea, vomiting and abdominal pain. An intra-abdominal mass was detected in the imaging findings. The patient was taken into surgery. Torsioned giant accessory spleen was detected. Splenectomy was performed and the patient was discharged at the postoperative second day.

Conclusion: In cases with giant accessory spleen, prophylactic splenectomy can be considered in order to avoid possible complications such as torsion, spontaneous rupture, hemorrhage, peritonitis and intestinal obstruction.

Keywords: Spleen; accessory spleen; splenectomy; torsion of spleen.

1. INTRODUCTION

Accessory spleen is a functional splenic tissue that is different from normal splenic tissue and is

found congenitally in another focus. Its incidence ranges from 10-30% [1]. The most frequent locations are posteromedial to the spleen (22%); anterolateral to the upper pole of the left kidney;

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and lateral, posterior, and superior to the tail of the pancreas [2]. People with accessory spleens usually do not have any symptom. Accessory splenic torsion may very rarely cause signs of acute abdomen. Besides, infarction, spontaneous rupture and hemorrhagic shock, intestinal obstruction, infection and peritonitis are also rare complications [3]. It has been reported between 0.2-0.3% of splenectomy cases [2]. This article presents a previously undiagnosed case having been operated on due to a giant torsioned accessory spleen causing abdominal pain.

2. CASE REPORT

A 47-year-old female patient was admitted to our clinic with complaints of nausea, vomiting and abdominal pain. No features were found in the patient's family history and personal background. Upon her physical examination, the abdomen was more apparent in the left upper quadrant while common tenderness, defense (+) and rebound (+) were observed. According to laboratory testing, total leucocyte was 12.7

(N:4.5-11) and C-reactive protein was 12.4 (N:0-0.5). Other laboratory findings were found normal. Upon radiological examination, there was an oval, hypoechoic, well-circumscribed solid mass measuring 11x6x4 cm adjacent to the left kidney in the abdominal ultrasonography. Whole abdominal tomography was reported as 'A solid space-occupying lesion with indistinguishable intermediate planes sporadically and with no apparent contrast enhancement following intravenous contrast material, along with the small intestine adjacent to the bilobular-contoured, well-circumscribed solid mass measuring approximately 12x7x4.8 cm adjacent to the left kidney anterior was observed' (Fig. 1).

The patient was taken into surgery after physical examination and radiological testing. The abdomen was entered with a medial incision above the umbilicus. Exploration detected a bluish-colored, congested, 720°-rotated pedicled, mobile mass located in the left upper quadrant and surrounded by the omentum (Figs. 2, 3). As a result of these findings, the mass was excised.



Fig. 1. Sagittal Abdominal Tomography image. Stomach (M), Spleen (D), Kidney (B), Intra-abdominal solid mass (MASS)



Fig. 2. Accessory spleen detected during exploration



Fig. 3. Splenectomy material

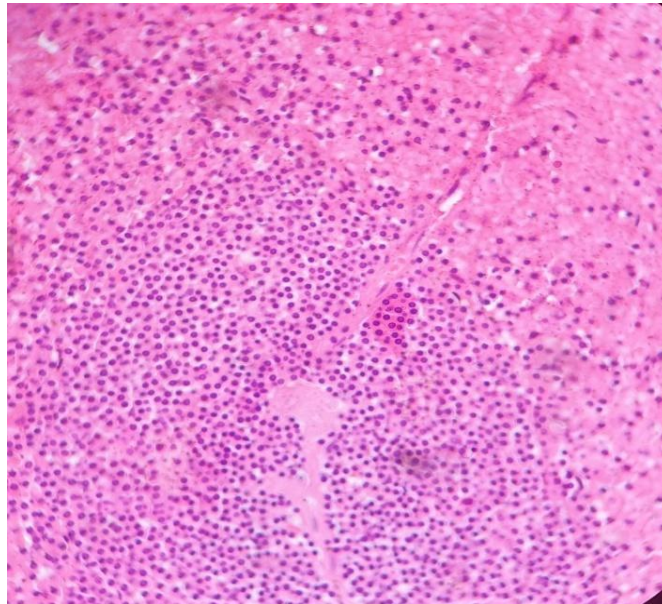


Fig. 4. Histopathological examination of accessory splenic tissue

Upon histopathologic examination, it was reported as 'ectopic splenic tissue showing signs of hemorrhagic infarction' (Fig. 4).

The patient with no any postoperative complication was discharged with full recovery on the 2nd day.

3. DISCUSSION

Accessory spleen is detected between 6.7-30% in autopsy series [4]. It is found in 11-16% of the cases in studies on abdominal tomography [5]. The size of an accessory spleen is usually one cm in diameter, but may range from a few millimeters to centimeters [6,7]. The size of the accessory spleen causing torsion is usually between 2 and 4 cm; very few cases are reported above 10 cm.² For this case, the diameter of the accessory spleen was 12 cm.

Most of the individuals with accessory spleens are asymptomatic. Accessory spleen is incidentally detected during research for other health problems [2]. Accessory spleen can cause serious health problems in some instances. Although accessory spleens are usually of no clinical significance and are incidentally found, it may be necessary to detect and diagnose some rare clinical conditions. Examples of these include spontaneous rupture, bleeding, embolism, or torsion of the accessory spleen [8]. However, some accessory spleens may mimic an enlarged lymph node as well as a tumor resulting from

adjacent organs such as the adrenal gland, pancreas and kidney [8]. Awareness of differential diagnoses (such as adrenal and pancreatic cysts), the use of imaging techniques, and surgical indications are very important. Especially, diagnosis is more difficult in the case of large masses because imaging modalities are less sensitive. This situation can lead to errors in the treatment of malignant lesions of the pancreas or adrenal [9]. Torsion of the accessory spleen may lead to symptoms of acute abdominal pain with accompanying nausea, vomiting, and fever. Strangulation and infarction may occur with torsion of the accessory spleen. Along with the rotation of the vascular pedicle, swelling, enlargement and venous congestion may occur in the accessory spleen. It may also cause pressure symptoms by applying pressure to the surrounding organs [3,8,10].

Torsion of the accessory spleen and splenic infarction were detected in this case. Accordingly, the patient had nausea, vomiting and abdominal pain. The location of abdominal pain in patients is closely related to the localization of the accessory spleen [11]. For this case, abdominal pain and tenderness detected on physical examination were more in the left upper quadrant. The accessory spleen detected in abdominal tomography and surgery was located in the left upper quadrant.

Spontaneous rupture and bleeding due to the accessory spleen are extremely rare [12]. Other

possible complications are infection and peritonitis [13]. These complications can be avoided with early diagnosis and treatment accessory spleens receive their blood supply from a branch of the splenic artery [14]. However, Souparis et al. reported a rare retroperitoneal accessory spleen case with direct blood supply from the aorta [15]. Michels reported an accessory spleen in the gastrophrenic ligament with blood build-up provided by the accessory left gastric artery from the splenic artery [16]. Dynamic abdominal tomography revealed in 43.3% of the cases that accessory splenic vascularization occurred with branches from the splenic artery [17]. For this case, there was no contrast enhancement in the accessory spleen since the accessory spleen was torsioned, and vascularization was observed to be caused by a branch originating from the splenic artery.

Looking at the literature, it is seen that preoperative diagnosis cannot be made in most cases. Considering radiological studies performed for diagnosis, it is prominent in preliminary diagnoses such as peritoneal tumor, solid mass or intestinal malformation. In this case, an intra-abdominal solid mass was predicted in the preoperative ultrasonography and contrast-enhanced abdominal tomography.

4. CONCLUSION

Accessory splenic torsion is one of the rare causes of signs of acute abdomen requiring emergency surgical intervention. In cases with giant accessory spleen, prophylactic splenectomy can be considered in order to avoid possible complications such as torsion, spontaneous rupture, hemorrhage, peritonitis and intestinal obstruction.

CONSENT

The patient's written consent was obtained for the publication of this case report.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Halpert B, Gyorkey F. Lesions observed in accessory spleens of 311 patients. *Am J Clin Pathol.* 1959;32(2):165-168. DOI: 10.1093/ajcp/32.2.165
2. Bard V, Goldberg N, Kashtana H. Torsion of a huge accessory spleen in a 20-year-old patient. *International Journal of Surgery Case Reports* 2014;5(2):67–69. DOI: 10.1016/j.ijscr.2013.12.019
3. Ren C, Liu Y, Cao R, Zhao T, Chen D, Yao L, Pan Z. Colonic obstruction caused by accessory spleen torsion: A rare case report and literature review. *Medicine* 2017;96(39):e8116. DOI:10.1097/md.00000000000008116
4. Mocanu SN, Vinuesa AS, Trayter CMR, Figueroa EAC, Pedra AGS. Accessory spleen torsion in a teenager. *ANZ J Surg.* 2015;85(12):987-9. DOI: 10.1111/ans.12723. Epub 2014 Jun 18.
5. Romer T, Wiesner W. The accessory spleen: prevalence and imaging findings in 1,735 consecutive patients examined by multidetector computed tomography. *JBR-BTR.* 2012;95:61–5. DOI:10.5334/jbr-btr.75
6. Gayer G, Zissin R, Apter S, Atar E, Portnoy O, Itzchak Y. CT findings in congenital anomalies of the spleen. *Br. J. Radiol.* 2001;74 (884): 767–772. DOI: 10.1259/bjr.74.884.740767
7. Morteale KJ, Morteale B, Silverman SG. CT features of the accessory spleen, *Am. J. Rev.* 2004; 183: 1653–1657. DOI:10.2214/ajr.183.6.01831653
8. Seo T, Ito T, Watanabe Y, Umeda T. Torsion of an accessory spleen presenting as an acute abdomen with an inflammatory mass. US, CT, and MRI findings. *Pediatr Radiol.* 1994;24:532–4. DOI: 10.1007/BF02015022
9. Jangjoo A, Zandbaf T, Rezapanah A, Vahidirad A, Norouzi Asl S, Pakdel A. The role of diagnostic laparoscopy in finding the origin of large left upper quadrant cysts compared with imaging techniques, a case report, and review of literature. *Medical Journal of Mashhad University of Medical Sciences.* 2021;64(2):2946-52. DOI: 10.22038/mjms.2021.18519.
10. Valls C, Mones L, Guma A, et al. Torsion of a wandering accessory spleen: CT findings. *Abdom Imaging* 1998; 23:194–5. DOI: 10.1007/s002619900321

11. Sadro CT, Lehnert BE. Torsion of an accessory spleen: Case report and review of the literature. *Radiol Case Rep.* 2013; 8(1): 802. Published online 2015 Dec 7. DOI:10.2484/rcr.v8i1.802
12. Coote JM, Eyers PS, Walker A, Wells IP. Intraabdominal bleeding caused by spontaneous rupture of an accessory spleen: the CT findings. *Clin Radiol* 1999; 54:689-691. DOI: 10.1016/s0009-9260(99)91093-0
13. Kitchin RJ, Green NA. Torsion of an accessory spleen presenting as acute appendicitis. *Br J Surg* 1962; 50:232-233. DOI: 10.1002/bjs.18005022025
14. Yildiz AE, Ariyurek MO, Karcaaltincaba M. Splenic anomalies of shape, size, and location: Pictorial essay. *Scientific World Journal.* 2013; 2013:321810. DOI: 10.1155/2013/321810
15. Souparis A, Papaziogas B, Alexandrakis A, Koutelidakis J, Paraskevas G, Papaziogas T. An unusual case of retroperitoneal accessory spleen with vascular supply directly from aorta. *Minerva Chir.* 2002;57:513–515.
16. Michels NA. *Blood Supply and Anatomy of the Upper Abdominal Organs with a Descriptive Atlas.* Philadelphia, J.B. Lippincott. 1955;46–47.
17. Mendi R. Evolution of the CT imaging findings of accessory spleen infarction. *Pediatr. Radiol.* 2006;36:1319-1322. DOI: 10.1007/s00247-006-0323-y