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Incidental gastric accessory spleen during laparoscopic sleeve gastrectomy

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ABSTRACT

INTRODUCTION: Bariatric surgery has shown to produce the most predictable and tangible results for weight loss, with laparoscopic sleeve gastrectomy's being the most popular one of them. However, the occurrence of previously undiagnosed diseases can be encountered during bariatric operations. The work has been reported in line with the SCARE criteria.

CASE PRESENTATION: This is the case of a 54 year old morbidly obese female, presenting to our hospital for a laparoscopic sleeve gastrectomy. During her procedure, it was discovered that she has an accessory spleen on the fundus of her stomach. The decision was made to resect it with the specimen of the stomach for histopathological examination.

CONCLUSION: Incidental findings during routine bariatric surgery are a common occurrence, and therefore prompt and effective intra-op management is key to the prognosis of the patient. Accessory spleens, although uncommon, tend to be asymptomatic. However, if undiagnosed, could present with dangerous consequences.

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1. Introduction

Obesity is a global epidemic, with an increasing prevalence and significantly documented morbidity and mortality [1]. While conventional methods for weight loss have proven efficacious for a certain population of people, bariatric surgery has shown to produce the most predictable and tangible results for a certain subset of patients who qualify for it, and as of recently, laparoscopic sleeve gastrectomy (LSG) has become the most popular one of them in the USA, leading with 52% of all weight-loss operations [2].

The incidence of accessory spleen is quite common and ranges from 10 to 30% in autopsy population, and 16% in patients undergoing contrast enhanced abdominal CT scan [3]. Three quarters of accessory spleens are located on the splenic hilum, while 25% of them are found on the pancreatic tail. It has been reported, though extremely rare, that accessory spleens can occur anywhere in the abdomen, including the wall of the stomach [4]. They are usually incidentally detected, are asymptomatic and are the result of a congenital anomaly that occurs during the fifth week of fetal life [3]. The dimensions of an accessory spleen are usually one cm in diameter, but can vary from a few millimeters to centimeters [3,4]. This paper

presents a case of an accessory spleen that was found incidentally on the stomach of a bariatric patient.

The work has been reported in line with the SCARE criteria [5].

2. Case report

In this report we present a case of a 54 year old morbidly obese female (Body mass index of 44 kg/m²) who was admitted for a laparoscopic sleeve gastrectomy. Her past history was positive for bronchial asthma, hypothyroidism, and dyslipidemia. The past surgical history was positive for two cesarean sections. She had a gastroscopy 5 months prior to surgery which was normal; as well as a pre-operative ultrasound which showed mild splenomegaly (14.4 cm long span; normal ≤ 12).

The patient underwent her laparoscopic sleeve gastrectomy in August 2015, but during the initial visualization of the abdominal cavity, a large accessory spleen was found, measuring 2.5 × 2.0 × 0.7 cm on the gastric fundus (Fig. 1A and B). The spleen was visualized and was completely intact and separate from the accessory spleen found on the stomach. The decision was made to proceed with the sleeve gastrectomy and the resection included the accessory spleen due to its attachment to the gastric fundus. Histopathological examination of the resected specimens confirmed accessory splenic tissue on the fundus of the stomach with complete resection margins. The surgery was otherwise uneventful and the patient had a normal recovery and follow-up.

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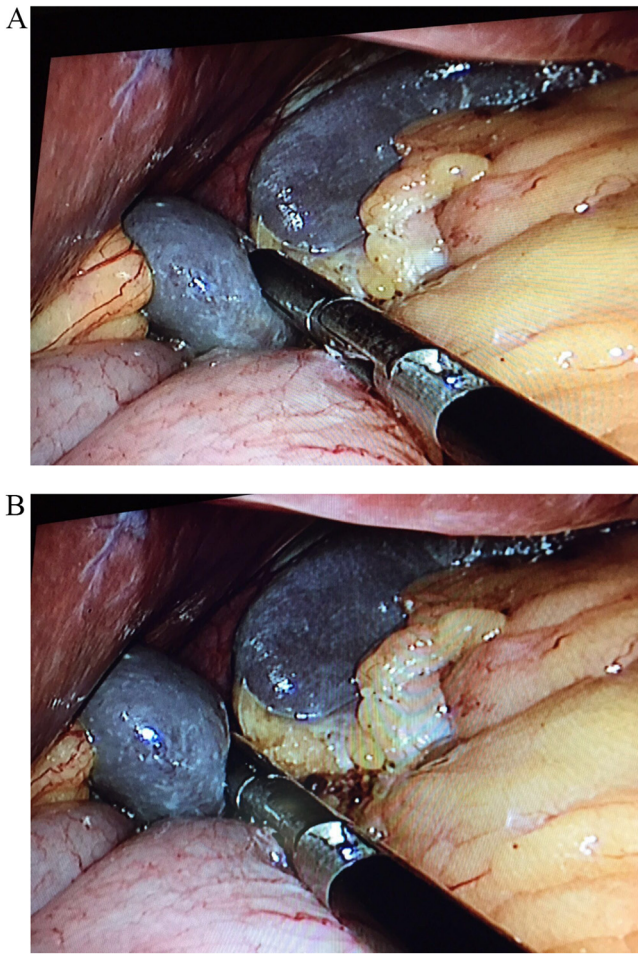


Fig. 1. Operative Pictures of accessory spleen seen on the fundus of stomach.

3. Discussion

This is the case of an accessory spleen that was found incidentally on the fundus of the stomach in a bariatric patient presenting for an LSG. The arterial system for the fundus varies and is made up of direct or indirect vascular supply which may arise from 9 arteries: the left inferior diaphragmatic, accessory left hepatic, left gastric, left adrenal, splenic, posterior gastric, superior polar, left gastro-epiploic and the gastro-splenic arteries [6]. The diagnosis of accessory spleen is usually done using a CT scan, in which they appear to be round or oval in shape; and the attenuation is identical to that of the splenic parenchyma before and after the administration of contrast media [3]. Endoscopic ultrasound-guided fine needle aspiration has shown to also be beneficial for diagnosis, where it mimics a gastric subepithelial mass observed in histological examination [7].

As previously mentioned, the accessory spleen discovered in our patient measured $2.5 \times 2.0 \times 0.7$ cm. This has actually proven to be on the highest end of size when it came to this phenomenon. A large cohort conducted by Halpert B et al. was able to show that the diameters of accessory spleen ranged between 0.8 and 3.2 cm, with a mean of 1.68 cm [9]. Another study conducted by Beahrs et al., which involved more than 8000 abdominal CT scans performed on patients with normal-sized intact spleen was able to observe no accessory spleen larger than 2.5 cm [10]. A possible explanation for the existence of larger accessory spleens is that, in patients that have undergone a previous splenectomy, accessory spleens tend to undergo compensatory hypertrophy, sometimes reaching 3–5 cm

in size [9], however, this was not the case in our patient, as she had not undergone a splenectomy previously.

Although, accessory spleens are usually found incidentally with no clinical significance, it may be necessary to detect and diagnose in certain occasional clinical situations. Examples of those include spontaneous rupture, hemorrhage, embolism or torsion of the accessory spleen [8]. Some accessory spleens, however, can mimic an enlarged lymph node as well as a tumour arising from adjacent organs such as the adrenal gland, pancreas and kidney [8]. In fact, differentiation from a hypervascular pancreatic neoplasm (e.g. islet tumour) is sometimes challenging [9]. On the other hand, accessory spleens can be differentiated from other lesions by using ^{99m}Tc sulfur colloid scintigraphy, which establishes the identity of ectopic splenic and hepatic tissues [3,4,10].

Ectopic splenic tissue may be caused by traumatic disruption of the splenic capsule causing autotransplantation of splenic cells within the peritoneal cavity [11]. This is known as splenosis, the nodules are more numerous and widespread, and often occur in locations inconsistent with accessory spleens [11]. However, our patient had neither historic nor anatomic features of splenosis. The location may be highly variable but enlarged splenosis located at the gastric fundus mimicking a GIST or a submucosal tumour have been reported [12].

In our case, our patient presented for an LSG, where the incidental accessory spleen was incidentally discovered on the fundus of the stomach. Therefore, the continuation of the planned laparoscopic bariatric procedure with the inclusion of the accessory spleen with the surgical specimen was considered an appropriate plan for its management so as to rule out any possible underlying tumour [13].

4. Conclusion

Incidental findings during routine bariatric surgery are a common occurrence, and therefore prompt and effective intra-op management is key to the prognosis of the patient. Accessory spleens, although uncommon, tend to be asymptomatic. However, if undiagnosed, could present with dangerous consequences.

Conflict of interest

The authors declare that they have no conflict of interest.

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Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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.

Author contribution

Dr. Suleiman Almazeedi: Study design, data collection, proof reading.

Dr. Eliana Al Haddad: Study design, writing, proof reading.

Dr. Talal Al-Khithr: Data collection, study design.

Dr. Mohammed Alhunaidi: Data collection, study design.

Guarantor

Dr. Suleiman Almazeedi.

Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.ijscr.2017.05.022>.

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