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Case Report

Ectopic spleen mimicking hepatocellular carcinoma in the late post-operative period of bariatric surgery

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Abstract: An ectopic spleen occurs with less than 600 cases reported and has a large series of splenectomies less than 0.3%. Its highest prevalence occurs between 20 and 40 years of age, being more frequent in female patients. To present an original case report on the occurrence of ectopic spleen, mimicking hepatocellular carcinoma (HCC) after bariatric surgery. Occurrence of migratory spleen after late bariatric surgery, mimicking an HCC discovered in a routine evaluation. JCA patient, male, 66 years old, previously with sleep apnea, hypertensive and diabetic patients on medication regularly, who weighed 112.8 kg, with a BMI of 43.4 kg / m2. After 2 years of by-pass, a routine evaluation identified hepatobiliary surface on hepatic ultrasound performing MRI imaging suggestive of HCC. The team opted for a new laparoscopy with the possibility of cavity inventory beyond the biopsy of the tumor lesion already identified, to track intra-abdominal metastases and to review anatomy. The operation revealed that the suggestive lesion was subcapsular implanted only in the falciform and hepatic surface in segment amenable to total resection. The anatomopathological results of the lesions were described as congenital splenic cells compatible with ectopic spleen. The emergence of the ectopic spleen after laparoscopic bypass has not been reported so far because it is a non-traumatic surgery. The lesion in question had a benign behavior, with hepatic subcapsular implantation restricted to the falciform ligament, capable of total resection. Patient evolved well following follow up with gastroenterologist.

Key words: Ectopic Spleen; Bariatric surgery; Elective Surgery; Hepatocellular carcinoma.

Introduction

Ectopic spleen (ES) is a rare condition, with incidence in large series smaller than 0.3%. Their highest prevalence occurs between 20 to 40 years of age, and they are more frequent in female patients (1,2).

ES is not limited to its normal location due to congenital changes, acquiring ligament laxity and incomplete fusion of the dorsal mesogastro. Uncommon in clinical practice, usually asymptomatic and identified in routine exams or surgical findings (1,3). The spleen weight of a normal adult is between 75-150 g. Most ectopic spleens are congested and enlarged, splenomegaly may be secondary due to congestion of a torsion and / or compression of the pedicle (4).

Although there are more than 600 ES reports, cases of this pathology associated with a post-gastric bypass diagnosis at Roux-en-Y were not found in the literature. Therefore, the present case report aimed to present an original case report on the occurrence of ectopic spleen diagnosed after bariatric surgery mimicking a hepatocellular carcinoma (HCC) being an intraoperative finding.

Case report

JCA, male, 66 years old, previously suffering from sleep apnea, hypertension and diabetes, who weighed 112.8 kg, with a BMI of 43.4 kg m^{-2}, with a history of surgery for hydrocele correction, right and umbilical inguinal herniorrhaphy, vasectomy, splenectomy after automobile trauma 40 years ago, also submitted to cardiac surgery for the placement of 3 bridges, one of the mammary vein and 2 of the saphenous veins. He was submitted to laparoscopic Roux-en-Y gastric bypass in April 2007, without intraoperative complications. The Bariatric Surgery performed was the Roux-en-Y gastric bypass by laparoscopy. We started with closed needle with Verul Needle in a left lateral umbilical right position, followed by implantation of the 10.0 mm blind trocar and introduction of the camera that guided the passage of 5 more portals with 12.0 mm (03 units) 5.0 mm (02) units. In the cavity inventory we did not identify changes in the abdomen that limited the procedure. Using the J & J disposable material kit (ATS endodendronator, 03.0.0 mm trousers, 04 blue loads and 03 white loads, 01 ultracision scissors), the gastroplasty was performed with 03 blue loads of 45.0 mm and reinforcement of the lines of Treitz identified and measured about 80.0 cm of thin loop was performed gastro enteranastomse lateral end with 01 blue load, followed by enterectomy at 75.0 cm of Treitz with 01 white load. Measured about 150.0 cm of jejunum an enteroanastomosis was performed concluding the Y of Roux with 01 white load. All en-

dograpator gaps were closed with prolene 3.0 in extra mucosal continuous sutures in 2 planes.

It evolves in the late postoperative period with dumpping with a frequency of 2 times a month associated with pain in the right hypochondrium and maintaining an alcoholic habit. Examined by hepatologist, magnetic resonance imaging (MRI) was performed, evidencing a hepatic nodule, close to the falciform ligament, being suspected of having a hepatocellular carcinoma. Discussed with the team of bariatric surgery was opted for a new diagnostic laparoscopy with biopsy of the tumor lesion and staging. The operation revealed that the hepatic lesion was implanted in the falciform ligament with hepatic subcapsular invasion and could be completely resected and there were other smaller implants on the surface of the diaphragm, with some biopsies (Figures 1, 2 and 3). Except for the described findings, the abdominal cavity presented a normal appearance. No excisional biopsy was performed. The entire lesion and some diaphragm implants were resected.

The anatomopathological result of the lesions was described as congenital splenic cells, compatible with ectopic spleen. In the central part, "white pulp" consisting of lymphoid nodule and periarterial lymphatic sheath. In the periphery is the red pulp with congested and dilated sinuses. Upper, congested hepatic tissue. Bottom, congested splenic tissue, as shown in Figures 4 and 5.

Patient progressed well, presenting 75.7 kg, BMI 29.93, controlled BP of 120/70 mmHg, in regular use of medication to control diabetes and hypertension, still alcoholic, improvement of dyspnea and sleep apnea.

Discussion

Recommendations in the literature for the follow-up of an ectopic spleen are varied (1,2). The significant risk of post-splenectomy sepsis put a conservative approach as a choice in asymptomatic patients. In the absence of infarction, thrombosis or hypersplenism, in patients with acute abdomen, distortion with fixation of the spleen to splenectomy is considered the best treatment (1). Splenectomy should only be recommended when there is no evidence of blood flow to the spleen after

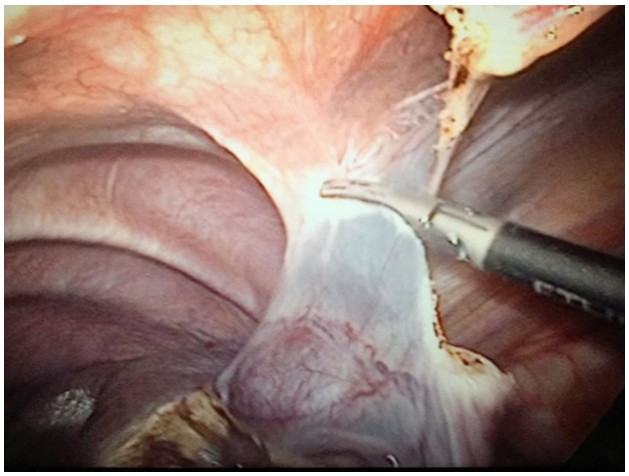

Figure 1. Image of the hepatic lesion was implanted in the falciform ligament with hepatic subcapsular invasion and could be completely resected and there were other smaller implants on the surface of the diaphragm.

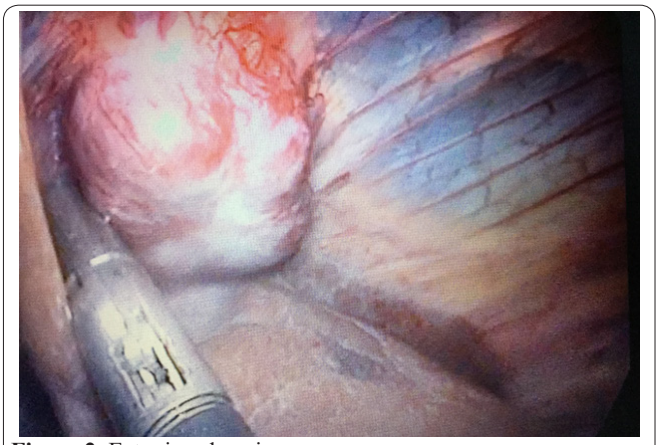

Figure 2. Ectopic spleen image.

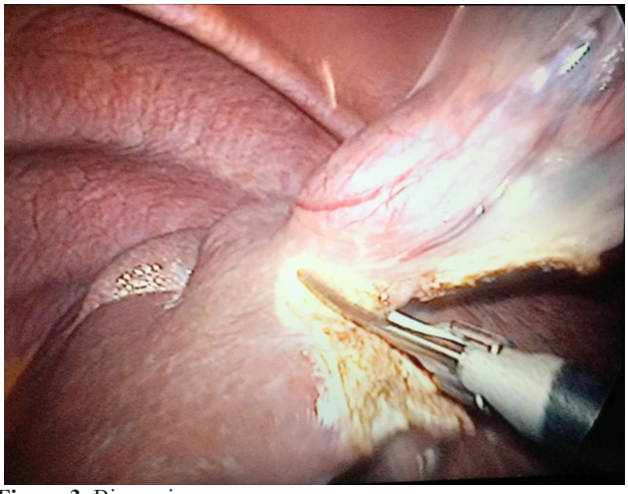

Figure 3. Biopsy image.

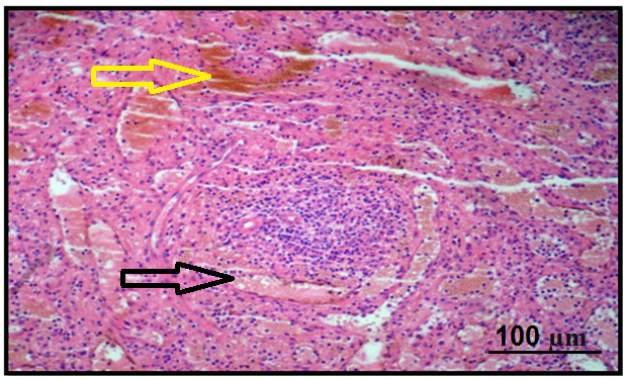

Figure 4. Histological cut image stained with hematoxylin-eosin. In the central part, "white pulp" constituted by lymphoid nodule and periarterial lymphatic sheath, according to **black arrow**. In the periphery is the red pulp with congested and dilated sinuses, according to **yellow arrow.**

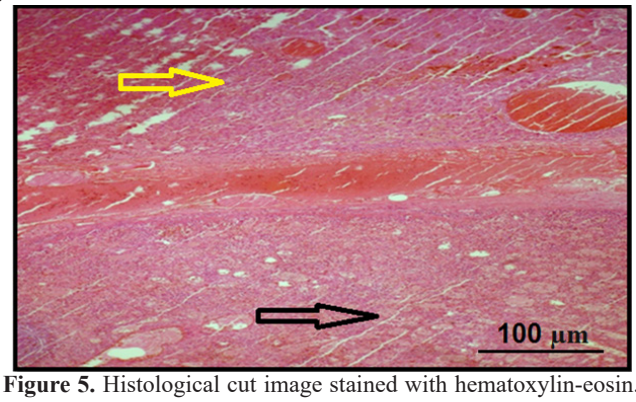

Figure 5. Histological cut image stained with hematoxylin-eosin. Upper, congested hepatic tissue, according to the **yellow arrow**. Bottom, congestive splenic tissue, according to **black arrow**.

distortion (2,4). In the case in question was defined the conduct of withdrawal of the Ectopic Spleen (ES) by the strong suspicion of a hepatocellular carcinoma (HCC).

The ES mechanism can be explained by evaluating acquired and congenital hypotheses (1,5). The acquired form occurs in multiparous women as a result of hormonal changes during pregnancy, as these changes cause a relaxation relaxation of the abdominal wall and consequently of the supporting ligaments of the abdominal organs like the spleen (6-8).

The development of connective tissue disease can also lead to this ligament relaxation and loosening of the ligaments normally associated with the spleen (9). There is evidence that flaccidity due to pregnancy or connective tissue disease affecting the abdominal ligaments may play a role in the development of the ectopic spleen, which accounts for the increased incidence in women (10,11).

The congenital form of ES is through the extension of the splenic pedicle, since the splenic pedicle is formed by the splenic ligaments and contains the splenic artery and vein and the tail of the pancreas (12,13). The spleen is connected with the dorsal organ wall in the region of the left kidney by the spleno-renal ligament and the stomach by the gastro-spleen. If there is incomplete fusion of the dorsal mesogastro the spleen may remain with a long pedicle and aberrant locations including testicular, renal or retroperitoneal region (14).

Conclusion

Although the ectopic spleen is an uncommon event and as evidenced in the literature not yet reported after bariatric surgery, it can mimic hepatocellular carcinoma with a very singular subcapsular presentation and only confirmed with a surgical approach. The diagnostic imaging of these lesions should be cautious and always recommended by histopathology. Laparoscopy was an initial approach strategy that was conclusive with less morbidity and became definitive access. Therefore, we have learned that ectopic spleen can be a differential diagnosis of many massive tumors in patients with a surgical history.

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Disclosure

The authors of this case report have no financial interest to disclose.

References

1. David C. Reisner, Burgan CM. Wandering Spleen: An Overview. Current Problem Diagnostic Radiology. 2017,0363-0188, doi. org/10.1067/j.cpradiol.2017.02.007.

2. Sharma and Salerno: A torted wandering spleen: a case report. Journal of Medical Case Reports 2014 8:13

3. Adsay NV, Hasteh F, Cheng JD, Klimstra DS. Squamouslined cysts of the pancreas: lymphoepithelial cysts, dermoid cysts (teratomas), and accessory-splenic epidermoid cysts. Semin Diagn Pathol. 2000; 17:56–65.

4. El Bouhaddouti H, Lamrani J, Louchi A, et al. Torsion of a wandering spleen. Saudi J Gastroenterol 2010;16 (4):288–91.

5. Wadham BM, Adams PB, Johnson MA. Incidence and location of accessory spleens. N Engl J Med. 1981, 304:1111.

6. Higaki K, Jimi A, Watanabe J, Kusaba A, Kojiro M. Epidermoid cyst of the spleen with CA19-9 or carcinoembryonic antigen productions: report of three cases. Am J Surg Pathol. 1998, 22: 704–708.

7. Hwang HS, Lee SS, Kim SC, Seo DW, Kim J (2011) Intrapancreatic accessory spleen: clinicopathologic analysis of 12 c a ses . Pan c r e a s 40: 956–965.

8. Hong R, Choi N, Sun K, Lim S, Han Y. Epidermoid cyst arising from an intrapancreatic accessory spleen: a case report and review of the literature. Oncol Lett. 2013, 5:469–472.

9. Kawamoto S, Johnson PT, Hall H, Cameron JL, Hruban RH, Fishman EK. Intrapancreatic accessory spleen: CT appearance and differential diagnosis. Abdom Imaging. 2012, 37:812–827.

10. Mori M, Ishii T, Iida T, Tanaka F, Takikawa H, Okinaga K. Giant epithelial cyst of the accessory spleen. J Hepato-Biliary- Pancreat Surg. 2003, 10:118–120.

11. Safioleas MC, Stamatakos MC, Diab AI,et al. Wandering spleen with torsion of the pedicle. Saudi MedJ 2007; 28(1):135–6.

12. Stringel G, Soucy P, Mercer S. Torsion of the wandering spleen: Splenectomy or splenopexy. JPediatrSurg1982; 17(4):373–5.

13. Swischuk LE, Williams JB, John SD. Torsion of wandering spleen: The whorled appearance of the splenic pedicleon CT.PediatrRadiol. 1993; 23:476–7.

14. Zavras N, Machairas N, Foukas P, Lazaris A, Patapis P, Machairas A (2014) Epidermoid cyst of an intrapancreatic accessory spleen: a case report and literature review.World J Surg Oncol 12:92. doi:10. 1186/1477-7819-12-92.