inconclusive radiological findings, exploratory laparoscopy should be considered as a definitive diagnostic test which also allows surgical treatment to be performed in the same intervention. This consists of resecting the remaining appendicular stump.[1]

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Endoscopic band ligation – A valid option in colonic diverticular bleeding

Ligadura con bandas elásticas - una opción válida en el sangrado diverticular

Clinical case

Diverticular bleeding (DB) is a common cause for lower gastrointestinal bleeding. Its incidence is increasing due to the aging of population, as colonic diverticula are more frequent in the elderly.[1] The pathogenesis of DB is related to proliferation and weakening of the associated vas rectum of the diverticula conditioned by colonic luminal factors.[1] Hypertension, arteriosclerotic disease and regular use of nonsteroidal anti-inflammatory drugs are associated with higher risk of DB.[1] In the majority of the patients DB stops spontaneously and the bleeding diverticulum is not identified in colonoscopy. However, in about 10–20% of the cases, bleeding reoccurs.[2] This can be a serious condition, particularly in old patients with comorbidities. Proposed therapeutic options for DB encompass endoscopic hemostasis, embolization and surgery. Endoscopic hemostatic methods may include clipping and endoscopic band ligation (EBL). In a series of 100 patients, EBL was superior to endoscopic clipping (EC) in the treatment of colonic DB.[3] We present a case of major colonic DB controlled with EBL.

A 69-year-old male patient with coronary disease under clopidogrel, was admitted to our emergency room with bright red blood hematochezia and syncope. On admission, he was pale, hypotensive and tachycardic. Abdominal examination was unremarkable and nasogastric aspirate was bilious, without blood. Laboratory revealed acute normocytic anemia of 6.1 g/dl (previous value 13 g/dl) and no elevated markers of acute ischemic heart disease. He was stabilized with fluids and blood transfusion, and an urgent upper endoscopy was performed, showing no alterations, namely blood or the cause of bleeding. Bowel preparation was started and a total colonoscopy was performed, within the first 24 h after admission; it showed no blood and multiple non bleeding left side colonic diverticula. In the next 24 h, the patient presented again with hemodynamic instability and was admitted to our ICU. He was submitted to a second colonoscopy (after fast intestinal preparation) which showed fresh blood along the left colon and colonic diverticula. It was possible to identify the bleeding diverticula, with pulsatile hemorrhage in the sigmoid colon (Fig. 1a). Adrenaline (dilution 1:1000) was injected around the bleeding diverticula, conditioning mucosal elevation in the diverticular area (Fig. 1b); the bleeding was temporarily controlled. After that, endoscopic tattooing was performed to allow identification of the bleeding diverticula (Fig. 1c). Upper variceal band ligation kit was prepared and a conventional gastroscope was introduced; the marked diverticula was easily identified and a rubber ligation band was placed, surrounding and everting the diverticula (Fig. 1d). No active bleeding was seen by the end of the procedure. In the next 2 days, the patient remained stable, without blood loss despite reintroduction of clopidogrel. He was discharged 5 days after the admission, asymptomatic. One year after hospitalization, the patient remains asymptomatic and no rebleeding events or complication have occurred.

DB is mostly intermittent and resolves spontaneously; endoscopic diagnosis is usually presumptive, as the bleeding diverticula is not usually identified.[2] Early colonoscopy (within 18 h after the final hematochezia) was proved to significantly increase the detection rate of identifi-

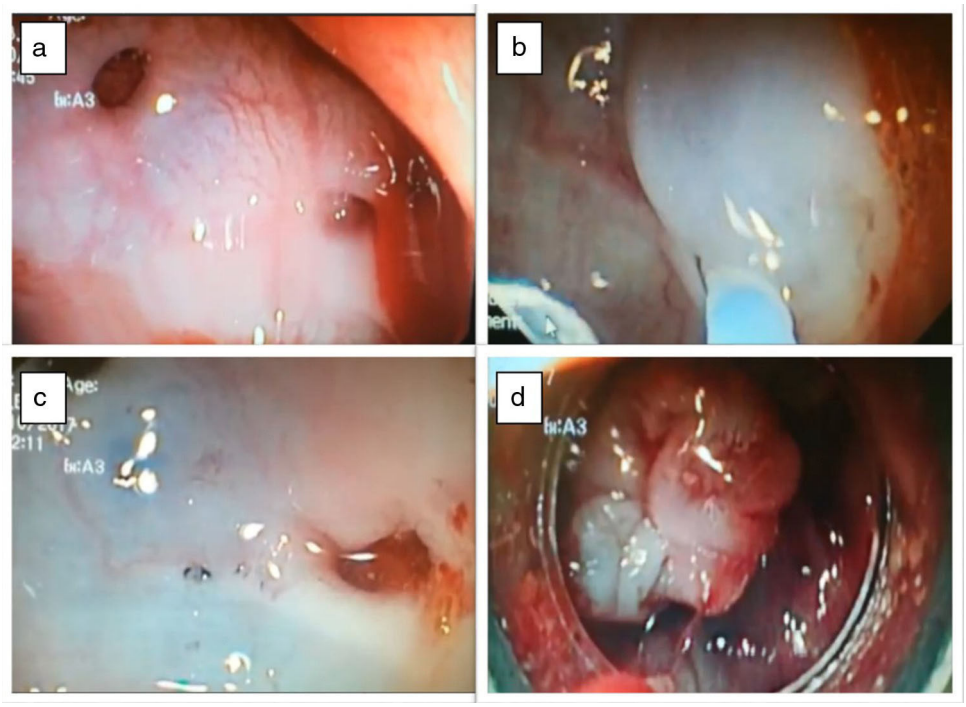

Figure 1 (a) Bleeding diverticula in the sigmoid colon; (b) Adrenaline injection around the bleeding diverticula, conditioning mucosal elevation in the diverticular area; (c) endoscopic tattooing was performed to allow the identification of the bleeding diverticula; (d) EBL of the bleeding diverticula.

able bleeding diverticula (40.5% versus 10.5%, $p < 0.01$).[4] Moreover, Mizuki et al. found higher detection rates of colonoscopy with preparation with polyethylene glycol compared to no preparation, though not statistically significant (28.2% versus 12.0%, $p = 0.11$).[4] Most series report higher rebleeding rates with endoscopic clipping when compared to EBL and therefore the latter should be used as a first choice for endoscopic hemostasis.[3] In most of the reported series, EBL is a safe procedure without important associated complications.[3–5] Nagata et al. recently published a series of 108 patients comparing EC versus EBL in colonic diverticular bleeding and found that the risk of rebleeding after 1 year was higher in the EC group (11.5% with EBL versus 37.0% in the clipping group – P Z .018) and, for EBL, more likely to occur if the diverticula was located in the left colon; also no cases of perforation or need for surgery were registered, although one patient experienced diverticulitis one day after EBL.[6] In our case, one year after endoscopic band ligation, the patient remains asymptomatic, without record of rebleeding events or complications like diverticulitis or perforation. Also, in a series of 95 patients, Shimamura et al. concluded that EBL can be safely and effectively performed by non-expert endoscopists.[5] It is of notice that, in our case, the endoscopist that performed the EBL had never done this procedure before, in the context of colonic DB. In this case, we believe that tattooing the bleeding area was important to identify the correct diverticulum, once the EBL kit was placed. Furthermore, the injection of adrenaline and mucosal elevation in the diverticular area might have facilitated following suction, rubber band placement and eversion of the bleeding diverticula.

In conclusion, this case illustrates that EBL can be an effective and safe procedure to control colonic DB, particularly in patients with comorbidities, avoiding surgery.

Conflicts of interest

None declared.

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Disseminated peritoneal leiomyomatosis, a diagnostic challenge☆

Leiomiomatosis peritoneal diseminada, un reto diagnóstico

Disseminated peritoneal leiomyomatosis is a benign and rare condition, with some 150 cases reported in the literature.[1] It is characterised by multiple smooth muscle cell-containing nodules in the abdominopelvic cavity. It tends to affect premenopausal women,[2,3] while an association with hormonal hyperactivity caused by oral contraceptives and ovarian neoplasia, etc., has also been reported in select cases.[1,4,5] Most cases are asymptomatic, although clinical manifestations will depend on the number and size of the lesions, as well as their rapid growth. It is usually diagnosed by chance in a radiological study or during surgery.[1,5] The biggest challenge is establishing a differential diagnosis with peritoneal carcinomatosis,[3,5] with a histological diagnosis required for confirmation.[2]

Treatment should be personalised according to the characteristics and symptoms of each individual patient.

We present the case of a 42-year-old female patient with a history of hypertension and polycystic kidney disease under follow-up with Nephrology, and taking combined oral contraceptives (COCs) for the last two years. She underwent laparoscopic surgery in 2013 due to a uterine fibroid with a pathological diagnosis of leiomyoma. She was referred to the clinic following the chance finding of two masses measuring 6.3 and 3.1 cm on the control CT scan for her polycystic kidney disease, located in Morison's pouch and in the mesosigmoid. It was not possible to rule out peritoneal implants. The patient was asymptomatic and her abdominal examination was normal. Fine-needle aspiration biopsy (FNAB) was performed on both lesions, revealing mesenchymal neoplasia with a low proliferation rate. The lesions expressed oestrogen receptors, Bcl-2 and vimentin, consistent with leiomyoma as well as other diagnoses, so their excision was required for correct identification. The study was completed with a PET/CT scan (Fig. 1A), which showed intense uptake of both lesions, with peak standardised uptake values (SUVs) of 26.4 and 24.8, respectively, as well as an enlarged uterus of myomatous appearance.

The patient underwent a midline laparotomy to identify and perform complete resection of both lesions (Fig. 1B). Pathology revealed mesenchymal neoplasia of low malignant potential (Ki-67 = 2%, <1 mitosis/10 HPF) with smooth muscle cell phenotype and positive oestrogen receptors, consistent with leiomyoma. Both the haematoxylin and eosin and immunohistochemistry results were compared with the myomectomy performed in 2013. Both sets of lesions were found to be very similar, with the primary difference being that the current lesions were more vascularised and had lower positivity for desmin. In light of these findings, the discrepancy between the high SUV values found in the PET/CT scan and the apparent low histological grade (minimal mitosis and lack of signs of malignancy such as pleomorphism and necrosis) were striking. The patient was therefore referred to Gynaecology for a hysterectomy and bilateral adnexectomy assessment.

After three months, the patient underwent an abdominal hysterectomy with bilateral adnexectomy and a new 1-cm lesion adhered to the wall of the peritoneum was discovered during the procedure. The pathology findings for this lesion were the same as for the previously resected lesions, although with a Ki-67 of 35%, without identifying any pathological findings in the specimen from the hysterectomy and bilateral adnexectomy. She was referred to Oncology, where adjuvant hormone therapy with tamoxifen was started, with no signs of relapse in the six-month follow-up CT scan.

Although it is normally a benign condition, progression to malignancy has been reported in 3–5% of cases.[3] The differential diagnosis is primarily established with leiomyosarcomas, peritoneal carcinomatosis and lymphomas.

Microscopically, mesenchymal neoplasia are made up of smooth muscle fibres with oestrogen and progesterone hormone receptors,[1,2] although patients' hormone levels are normal in the majority of cases. In light of the foregoing, an individual's predisposition is believed to be a very important factor in the development of the disease.[3]

Because of the limited number of cases reported, the treatments reviewed in the literature vary based on the characteristics of each patient,[1,3] ranging from a conservative approach with clinical-radiological follow-up to radical surgery (hysterectomy with bilateral adnexectomy and excision of all lesions), in an attempt to reduce the hormonal impact and thereby prevent malignant degeneration. For residual tumours, adjuvant hormone therapy may be useful.

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