Endoscopic ultrasound-guided radiofrequency ablation for management of gastric gastrointestinal stromal tumor

A 56-year-old man presented with abdominal pain and dyspepsia. On upper digestive endoscopy, a submucosal lesion was found in the distal gastric lesser curvature, but no conclusive diagnosis could be achieved with conventional biopsies. Endoscopic ultrasound (EUS) showed a 12 × 7 mm well-defined, homogeneous, hypoechoic nodule without signs of infiltration into the muscularis propria, suggestive of benign gastrointestinal stromal tumor (GIST) (Fig. 1). Fine-needle aspiration with a 22-gauge needle (Expect; Boston Scientific, Marlborough, Massachusetts, USA) was performed, confirming a low risk GIST. Histopathological examination revealed a GIST presenting less than 5 mitoses per high-power field.

The patient rejected surgical treatment, so we proposed EUS-guided radiofrequency ablation (RFA) (Video 1). We punctured the lesion with an 18-gauge EUS-RFA electrode needle connected to a radiofrequency generator (VIVA-RF generator; STARme, Seoul, South Korea), and applied ablative radiofrequency four times (50 W for 10 seconds).

EUS follow-up was performed after 4 weeks, and showed a slight mural thickening of the muscularis propria and submucosal layers; the lesion itself could not be identified (Fig. 2). A fine-needle biopsy with 22-gauge histological needle (Acquire; Boston Scientific) was performed and confirmed the absence of GIST-type mesenchymal structures. A second EUS 6 months later confirmed eradication of the lesion, and showed a well-preserved layer pattern (Fig. 3).

Guidelines recommend radical surgical resection with a clear margin (R0) as the gold standard for localized primary GIST [1]. Although endoscopic resection of GISTs has been reported [2], it is not supported by current guidelines because of the low rate of successful R0 resections achieved [1]. RFA uses high frequency alternating current applied via an electrode to generate localized areas of coagulative necrosis and tissue desiccation [3, 4]. Although it is usually applied percutaneously or laparoscopically, successful outcomes of EUS-guided RFA using an 18-gauge needle for benign and malignant pancreatic lesions have been reported recently [5]. To our knowledge, this is the first report of a successful ablative radiofrequency therapy of a gastric GIST.

Competing interests

None
The authors

Sergio Bazaga Pérez de Rozas, Mario Alberto Gallardo Ramírez, Francisco Javier García-Alonso, Ana Yaiza Carbajo, Manuel Pérez-Miranda Castillo, Carlos de la Serna Higuera
Gastroenterology and Hepatology Department, Hospital Universitario Rio Hortega, Valladolid, Spain

Corresponding author

Sergio Bazaga Pérez de Rozas, MD
Digestive Endoscopy Unit, Hospital Universitario Rio Hortega, Calle Dulzaina, 2, 47012 Valladolid, Spain
Fax: +34-983-420400
sergio.bpr@gmail.com

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