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Gastric per-oral endoscopic pyloromyotomy in the treatment of refractory gastroparesis: Report on the first case performed in Mexico☆

Piloromiotomía endoscópica por vía oral para el tratamiento de gastroparesia refractaria: reporte del primer caso en México

Gastroparesis is a syndrome characterized by a delay in gastric emptying, in the absence of mechanical obstruction. Its main symptoms are: nausea, vomiting, and early satiety.[1] Idiopathic etiology is the most frequent, but postoperative and metabolic (diabetes mellitus) etiologies have also been regularly documented.[2] The criterion standard for diagnosis is gastric emptying scintigraphy, in which a standardized diet radiomarked with ^{99m} TC colloidal sulfur is ingested, obtaining images at 0, 60, 120, 180, and 240 min. Emptying delay is defined as > 10% gastric retention in 4 h.[3] Treatment consists of controlling symptoms and improving emptying.[4] The response rate of dietary and drug modifications, including metabolic control in diabetic patients, is low (< 20%).[5] Intrapyloric botulinum toxin injection, a current treatment, has a temporary and poor response rate (15-20%).[6] Surgical management includes electric stimulation, pyloroplasty, and total or subtotal gastrectomy, with regular results (40-60%) and high morbidity and mortality.[1,2] Per oral endoscopic myotomy (POEM) is a technique that was developed for the treatment of achalasia, and has shown good safety and efficacy.[7] The idea of performing an endoscopic pyloromyotomy (G-POEM) was recently developed, utilizing the basic components of POEM to improve gastric emptying through gravity, despite the presence of gastroparesis. Initial results on different populations, including a multicenter study, have shown good safety and efficacy in humans (> 80% initial response).[8–10]

Gastroparesis is a frequent pathology in the Mexican population. The aim of this report was to describe the case of a Mexican patient with refractory gastroparesis treated with the G-POEM procedure.

A 25-year-old woman had a past medical history of well-controlled hypothyroidism and chronic constipation that did not respond to medical treatment. She required a subtotal colectomy due to colonic inertia, and in a second surgical stage, she underwent bowel transit restitution that was performed 10 years ago. Her current illness began 4 years prior to her hospital admission, with nausea, vomiting, early satiety, and a 15-kg weight loss. The evaluation protocol began with endoscopic study that ruled out mechanical obstruction. A gastric emptying scan showed 46% retention at 4 h, resulting in the diagnosis of idiopathic gastroparesis. Medical and dietary treatment was begun, providing partial symptom improvement, and thus the gastroparesis was considered treatment-refractory. The G-POEM procedure was planned, once the patient gave her informed consent and authorization from the hospital ethics committee was obtained. The patient's quality of life and the magnitude of her symptoms were evaluated prior to the G-POEM through the Gastroparesis Cardinal Symptom Index (GCSI) questionnaire,[11] with a score of 37/45.

The patient fasted 24 h before the procedure and was given 1 g IV of cefotaxime as prophylaxis. A conventional model EG590WR endoscope (Fujinon, Saitama, Japan) was employed, along with a DH-28GR hood (Fujinon, Saitama, Japan), and an ERBE VIO-200D electrosurgical unit with a hybrid knife (Tübingen, Germany). The parameters were: injection (ERBEJET, effect 50), incision (ENDOCUT Q, effect 3, cutting duration 3, cutting interval 3), tunnelization (SWIFT COAG, effect 3 at 70 W), myotomy (ENDOCUT Q), and hemostasis (SOFT COAG, effect 3 at 40 W). Hemoclips (Boston Scientific, USA) and a CO2 insufflator (ENDOSTRATUS, Medivators, Minneapolis, MN, USA) were also used. The G-POEM technique consisted of the following steps: *1) revision and injection:* the antrum was viewed and a combination of 0.9% sodium chloride solution with 0.5% methylene blue was injected 5 cm before the pylorus, above the lesser curvature; *2) incision*: a 20-mm longitudinal incision was made; *3) tunnelization:* a submucosal tunnel was created from that point until passing the pylorus and reaching the proximal region of the duodenum; *4) myotomy*: total thickness myotomy of the pyloric muscle was performed 2 cm proximal to it; *5) closure*: 5 hemoclips were placed (fig. 1). Procedure duration was 60 min and there were no complications. Bowel transit with water-soluble contrast material at 24 h ruled out leakage into the submucosal tunnel, and adequate passage of the contrast medium into the duodenum was observed less than 2 min from its administration, indicating treatment success (fig. 2). Oral fluid intake was begun and the patient was sent home 48 h after the procedure with no complications. At the check-up one week

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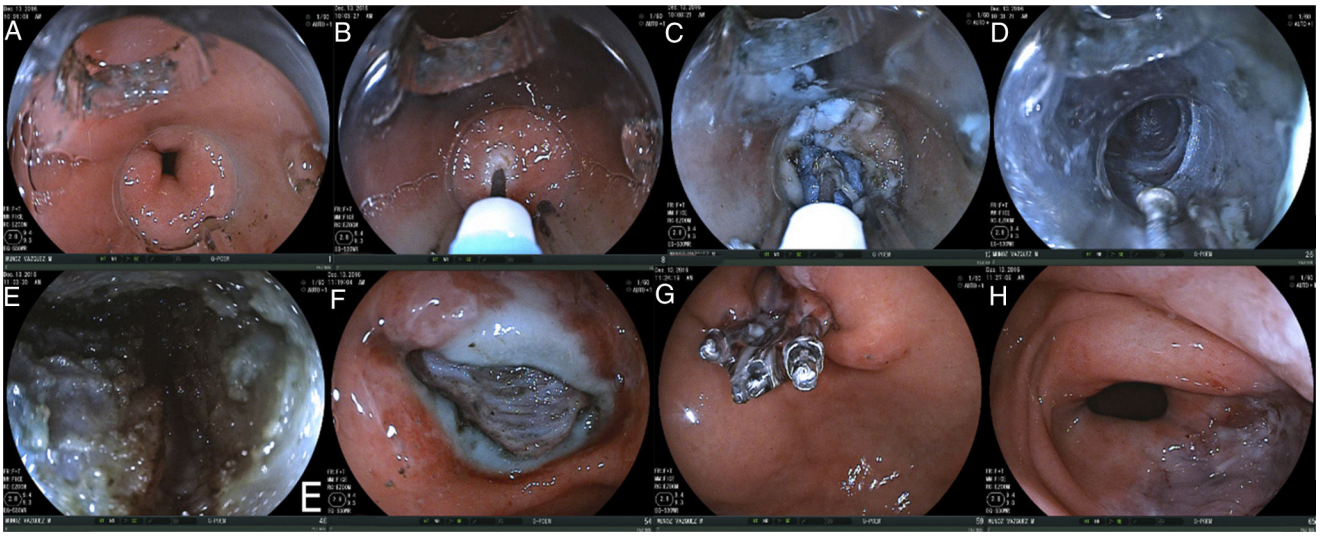

Figure 1 Steps of the G-POEM procedure. A) Initial viewing of the pylorus prior to the procedure. B) Injection. C) Longitudinal incision. D) Creation of the submucosal tunnel. E) Myotomy of the pyloric muscle. F) Incision at the end of the procedure. G) incision closure with hemoclips. H) The pylorus is clearly observed to be more open after the procedure.

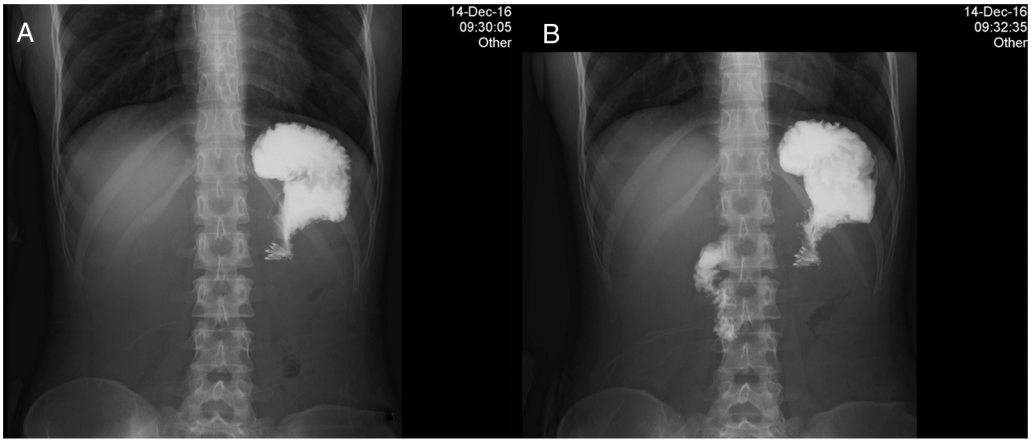

Figure 2 Bowel transit with water-soluble contrast material 24 h after the procedure. The images show A) the beginning of the passage of the water-soluble contrast medium with no leakage and B) adequate passage into the duodenum in less than 2 min.

later, symptoms had improved 33% (GSCI score of 23/45). Control gastric emptying scan showed an 8% emptying delay at 240 min.

In conclusion, G-POEM is a technically feasible procedure at centers with experience in endoscopic dissection and is a new alternative in the treatment of patients that have refractory gastroparesis or are at high risk for surgical morbidity and mortality. The procedure offers good initial results in terms of safety and efficacy, as shown in the present case, but intermediate and long-term prospective studies with a greater number of patients are needed to determine the true role of this procedure in the treatment of gastroparesis.

Conflict of Interest

The authors declare that there is no conflict of interest.

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Perianal basal cell carcinoma: An infrequent location☆

Carcinoma basocelular perianal: una localización infrecuente

Basal cell carcinoma (BCC) is the most frequent malignant neoplasia of the skin and makes up 75% of the non-melanocytic tumors.[1] It more commonly presents in the male sex (80% of the patients) and the mean presentation age varies from 65-75 years.[2] BCC frequently appears in areas exposed to ultraviolet radiation, mainly the head and neck. Its appearance at non-sun-exposed areas is atypical, and among those sites, location at the perianal region is extremely rare (0.1%), representing 0.2% of perianal tumors.[3] Immunodeficiencies, infections, burns, chronic irritations, or previous radiation have been other etiopathogenic factors related to the appearance of this neoplasia. Likewise, certain hereditary syndromes, such as basal cell nevus syndrome or xeroderma pigmentosum, have also been implicated in its development.[1,3]

We present herein an unusual case of BCC located at the perianal level, with no predisposing factors.

A 78-year-old woman with an unremarkable past medical history sought medical attention for a perianal lesion of 2-year progressive growth, associated with pruritus and occasional bleeding. Physical examination revealed a well-defined, ulcerated, erythematous neoformation, 3 cm in diameter, at the left anal margin (fig. 1A). Nodular BCC diagnosis was made from the biopsy (fig. 1B). Rectosigmoidoscopy was performed, ruling out anal canal involvement. A pelvic magnetic resonance (MR) study identified no evidence of infiltration into the sphincteric musculature. The lesion was locally excised and repaired through primary cutaneous closure (figs. C and D). The histopathologic study reported microscopic infiltration of the internal margin and reintervention was carried out to widen the resection. Biopsy after reoperation confirmed tumor-free surgical margins. The patient had clinical follow-up and there are currently no signs of local recurrence at postoperative month 6.

BCC presents as a cutaneous lesion with erythematous papules, nodules, and ulcerations.[4] Gibson and Ahmed[5] described an ulcerous presentation of those tumors in up to 29.4% of patients. They also classified BCC into the following subtypes: nodular (66%), superficial (18%), infiltrative (8%), micronodular (4%), basosquamous (2%), and as fibroepithelioma of Pinkus (2%). A lesion with those characteristics should be biopsied to confirm the diagnosis and rule out other perianal diseases, such as Crohn's disease, squamous cell carcinoma, adenocarcinoma, melanoma, neuroendocrine tumors, gastrointestinal stromal tumors, verrucous carcinoma, Kaposi sarcoma, or Paget disease.[4,6] The differential diagnosis should include entities of infectious origin, such as sexually transmitted diseases, or less common dermatoses, including candidiasis, tuberculosis granuloma, fungal infections, and amoebiasis.[6] It is particularly important to differentiate BCC from cloacogenic carcinoma, which is an aggressive, invasive tumor.[1] Rectosigmoidoscopy and magnetic resonance imaging are the recommended complementary studies to rule out infiltration into the anal canal or sphincteric musculature invasion.

The current therapeutic options for BCC are exeresis, Mohs micrographic surgery, electrodessication and

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