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Rectal pulse granuloma: a rare condition presenting as a subepithelial lesion

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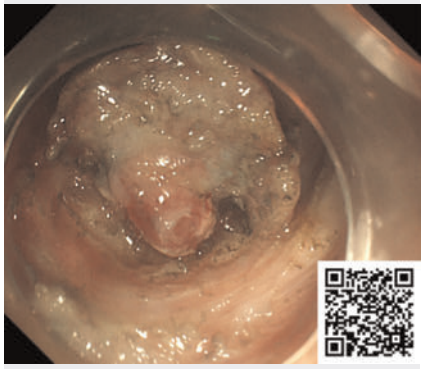
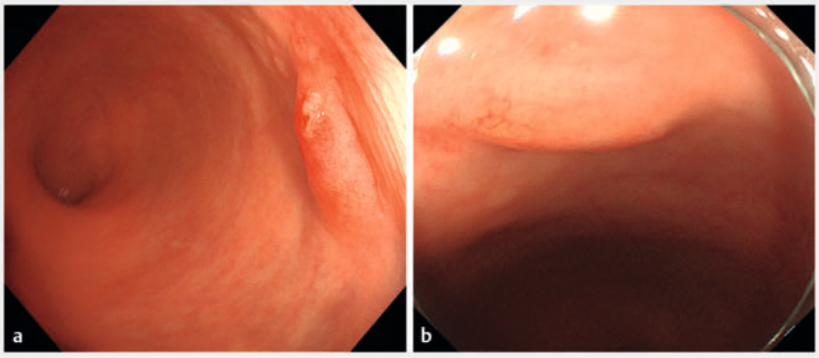
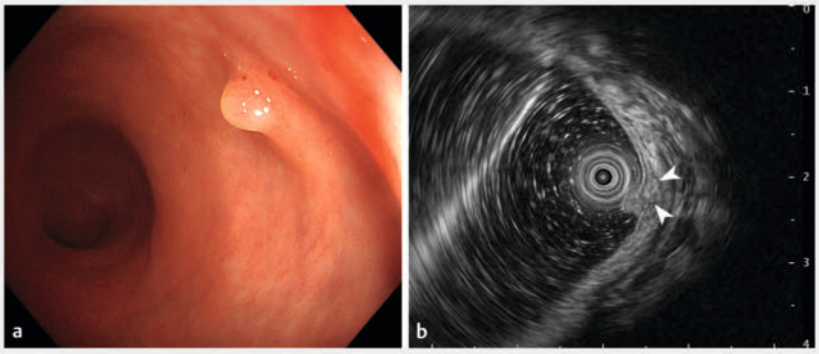


Video 1 Endoscopic submucosal dissection of a subepithelial lesion initially seen as a subepithelial protrusion in the distal rectum on colonoscopy and confirmed to be originating from the submucosal layer on endoscopic ultrasound; histopathology of the resected specimen showed it to be a pulse granuloma.



▶ **Fig. 1** Endoscopic images showing a distal rectal subepithelial lesion: **a** as a subepithelial protrusion with erosive changes of the overlying mucosa; **b** 1 week later, with no evidence of the erosive overlying mucosa.

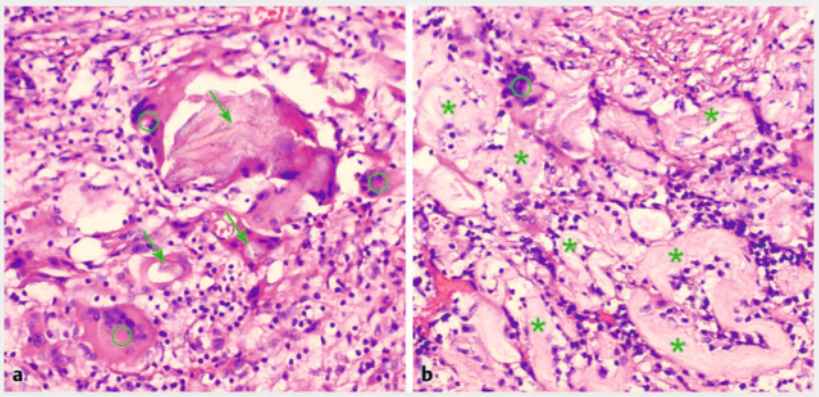


▶ **Fig. 2** Appearance of the lesion 10 weeks later on: **a** colonoscopy, showing an ill-defined submucosal bulge with a polyp on its surface; **b** on endoscopic ultrasonography, showing a 5.2 × 3.1-mm heterogeneous mass originating from the submucosal layer (arrowheads).

A pulse granuloma is a rare benign entity that typically occurs in the oral cavity [1]. Herein, we report a case of a subepithelial lesion (SEL) located in the distal rectum, which was diagnosed as a rectal pulse granuloma after its removal by endoscopic submucosal dissection (ESD).

A 66-year-old man with no significant medical history underwent colonoscopy for adenoma screening. Colonoscopy revealed multiple polyps, along with a subepithelial protrusion in the distal rectum, which was approximately 0.7 cm in size, with erosive changes of the overlying mucosa (▶ **Fig. 1 a**). The patient underwent endoscopic polypectomy 1 week later, at which time the erosive mucosa was noted to have recovered completely (▶ **Fig. 1 b**). After 10 weeks, the patient underwent further tests, with white-light endoscopy now showing an ill-defined submucosal bulge with a convex polyp on its surface (▶ **Fig. 2 a**). Endoscopic ultrasound (EUS) revealed a 5.2 × 3.1-mm heterogeneous mass originating from the submucosal layer (▶ **Fig. 2 b**). The lesion was removed by ESD (▶ **Video 1**). Histologic analysis revealed acute and chronic inflammatory cells, foreign-body giant cells, plant-like matter, and convoluted hyaline rings, supporting the diagnosis of a pulse granuloma with a foreign-body reaction (▶ **Fig. 3**), consistent with a pulse granuloma. The patient was discharged following ESD, without any complications.

Since it was first described in the lung in 1969 by Knoblich [2], pulse granuloma has been reported in the oral and nasal cavity, skin, knee, fallopian tube and ovary, and intrahepatic portal vein [1, 3]. It can also occur in the stomach, small intestine, colorectum, peritoneum, and mesentery [1, 4, 5]. A pulse granuloma is characterized by a chronic granulomatous reaction to a foreign body of vegetable origin [4]. In the present case, the mucosal damage seen above the lesion may have been the path by which the foreign bodies penetrated into the submucosal layer. As a rare lesion, familiarity with this entity's distinctive histopathologic features may avoid a delayed diagnosis or misdiagnosis.



▶ **Fig. 3** Histopathologic appearance of the resected lesion showing a granulomatous inflammatory process, with numerous foreign-body giant cells (circles), plant-like matter (arrows), and convoluted hyaline rings (stars), suggestive of a pulse granuloma (hematoxylin and eosin [H&E] staining, magnification × 200).

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Conflict of Interest

The authors declare that they have no conflict of interest.

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References

[1] Pereira TC, Prichard JW, Khalid M et al. Rectal pulse granuloma. Arch Pathol Lab Med 2001; 125: 822–823. doi:10.5858/2001-125-0822-RPG
[2] Knoblich R. Pulmonary granulomatosis caused by vegetable particles. So-called lentil pulse pneumonia. Am Rev Respir Dis 1969; 99: 380–389
[3] Yeo NK, Eom DW, Lim HW et al. Vegetable or pulse granuloma in the nasal cavity. Clin Exp Otorhinolaryngol 2014; 7: 334–337. doi:10.3342/ceo.2014.7.4.334
[4] Fabro M, Fabro SR, de Sales RS et al. Pulse granuloma: a rare condition mimicking a gastric tumor. Radiol Bras 2016; 49: 272–273. doi:10.1590/0100-3984.2015.0058
[5] Hayat M, Rumman A. Pulse granuloma: a rare gastric pseudotumor. Am J Gastroenterol 2022; 117: 707. doi:10.14309/ajg.0000000000001637

Bibliography

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