

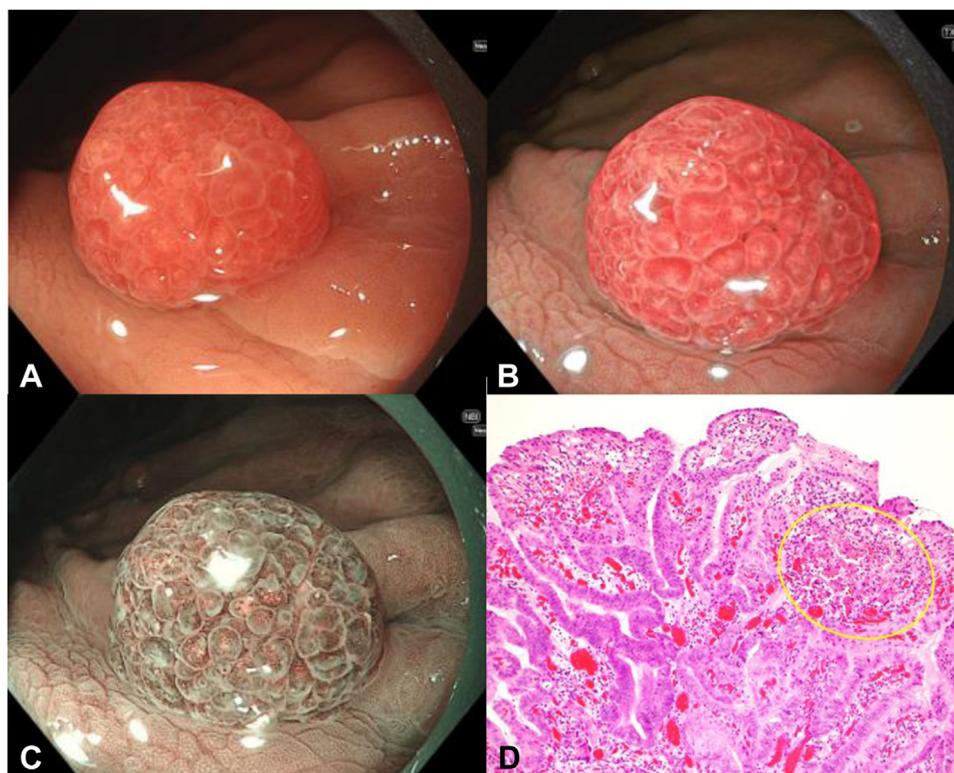
Singh et al were eloquently able to identify the source of bleeding by identifying a submucosal bulge, which is often the only finding seen on endoscopy. Blood within the lumen is typically not visible because the tunnel is not exposed after closure of the mucosal incision. Consequently, if a patient presents with unusual retrosternal chest pain, fever, or a significant drop in hemoglobin without hematemesis, post-POEM bleeding should always be suspected, and EGD should be performed promptly to identify a submucosal bulge or swelling. Management can be performed either by accessing the tunnel and providing hemostasis or by obtaining an urgent interventional radiology consultation for embolization.

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## A rare gastric foveolar-type adenoma with lanthanum deposition in a *Helicobacter pylori*-uninfected patient



A 53-year-old man undergoing hemodialysis for chronic kidney disease had been taking lanthanum carbonate for the previous 3 years. EGD revealed a 5-mm reddish protruding lesion, with a raspberry-like appearance and white deposits on its surface, in the upper third section of the *Helicobacter pylori*-uninfected stomach (**A**). Narrow-band imaging (NBI; Olympus, Tokyo, Japan) along with texture

and color enhancement imaging (TXI; Olympus)—assisted endoscopy revealed the presence of white deposits considered to be of lanthanum, as confirmed by different endoscopic results from white opaque substance (WOS), light blue crest (LBC), and white globe appearance (WGA) (**B**, **C**). NBI revealed an irregular microvascular pattern with a demarcation line; the lesion was diagnosed as a gastric

neoplasia with lanthanum deposition. Histologic examination of the specimen obtained by EMR revealed a foveolar-type adenoma with high-grade atypia and foreign body granulomas caused by lanthanum deposition in the stroma of the surface (**D**, *yellow ellipse*, H&E, orig. mag. X100). Moreover, lanthanum deposition may affect the histologic atypia, although it is unclear whether it is involved in promoting tumorigenesis. This case presents a rare and novel form of foveolar-type adenoma in the stomach of an *H pylori*-uninfected patient. It is crucial to understand the endoscopic features of lanthanum deposition by NBI and TXI for a proper diagnosis of gastric lesions.

## DISCLOSURE

*All authors disclosed no financial relationships.*

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## Commentary

Lanthanum carbonate is a safe and well-tolerated treatment for hyperphosphatemia secondary to chronic renal failure. It binds dietary phosphate, creating an insoluble complex in the gut that prevents its absorption.

There is a growing number of cases of lanthanum deposition in the GI tract, affecting mainly the stomach. The typical endoscopic findings are white lesions, and the endoscopic appearance has been subclassified as annular whitish mucosa, diffuse whitish mucosa, fine granular whitish deposition, and whitish spots.

Pathologic features include fine amorphous eosinophilic material corresponding to the lanthanum, which is generally phagocytosed by macrophages, which are more clearly visualized with anti-CD68 immunohistochemical staining.

Coexistence of gastric cancer and lanthanum deposition has been reported, but in most cases the area with cancer was spared from its accumulation, and white lesions were presented in the periphery. The relationship between lanthanum and early gastric cancer requires further investigation, but the white lesions may help endoscopists identify gastric cancer lesions in the lanthanum-deposited stomach.

The endoscopic appearance as a raspberry-like appearance with white deposits on its surface presented above by Iwano et al represents a new endoscopic feature in the spectrum of lanthanum deposition. Endoscopists should pay attention to these new endoscopic presentations in patients treated with oral lanthanum carbonate to ensure prompt identification.

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## Cholangioscopic diagnosis of biliary amyloidosis presenting as bile duct obstruction with cholangitis (with video)



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A 73-year-old woman with a history of cardiac amyloidosis presented with obstructive jaundice and upper right post-prandial abdominal pain. Computed tomography yielded findings suggestive of common bile duct stones with acute cholangitis. A cholangiogram demonstrated 2 oval filling defects in the common bile duct (**A**). Intraductal