

IMAGE OF THE MONTH

White Opaque Substance (WOS) in gastrointestinal lesions

Sustancia blanca opaca (WOS) en las lesiones gastrointestinales

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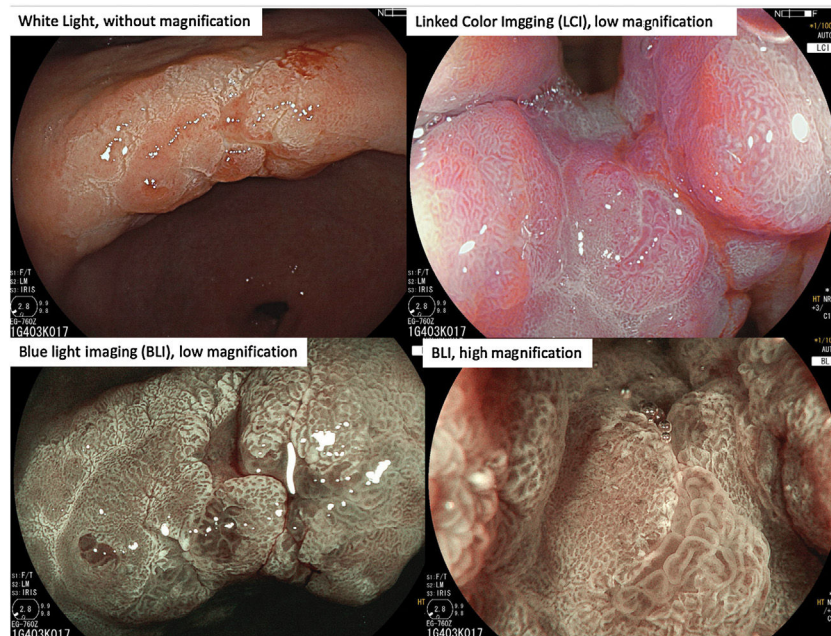


Figure 1 0-IIa + IIc early gastric cancer at the incisura, with an irregular distribution of White Opaque Substance as seen with white light, LCI and BLI.

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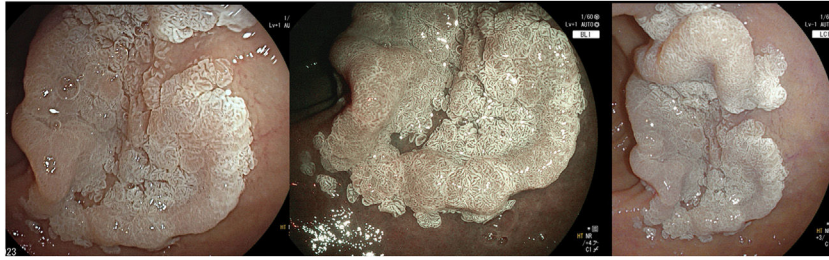


Figure 2 O-Ila duodenal adenoma with White opaque substance (white light, BLI and LCI) with regular distribution. White opaque substance might help to delineate the borders of the duodenal adenoma.

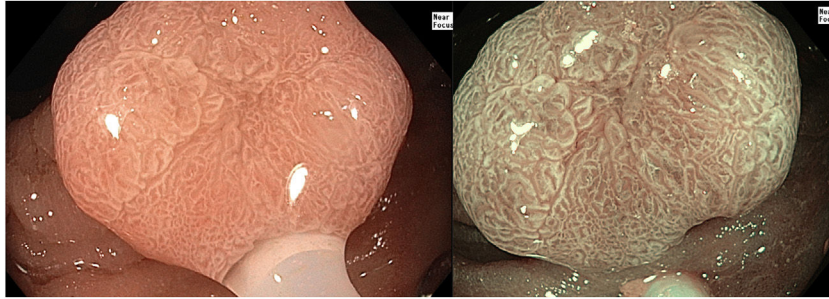


Figure 3 O-Is colonic adenoma with White Opaque Substance, seen with white light and NBI with near focus.

The white opaque substance (WOS) described by Yao et al. in 2008¹ is a phenomenon that may be present in gastric epithelial neoplasia and gastric intestinal metaplasia (Fig. 1). But it also could be seen in other gastrointestinal lesions, such as esophageal adenocarcinoma, duodenal (Fig. 2) and colorectal adenomas (Fig. 3).

WOS is visualized using either normal white light or “blue light” (like NBI, BLI or I-Scan OE), and indicates the accumulation of lipid micro-droplets in the superficial (intraepithelial and subepithelial) part of epithelial neoplasias due to an impaired mitochondrial oxidation, lipoprotein excretion and lipid degradation. The lipid drops have a higher reflective index than organelles and organic

components of the tissue, so the light is strongly scattered and reflected, being recognized as white coloration by the human eye.

Reference

1. Yao K, Iwashita A, Tanabe H, Nishimata N, Nagahama T, Maki S, et al. White opaque substance within superficial elevated gastric neoplasia as visualized by magnification endoscopy with narrow-band imaging: a new optical sign for differentiating between adenoma and carcinoma. *Gastrointest Endosc.* 2008;68:574–80.