

Interesting Images

A Rare Case of Duodenal Pseudomelanosis

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Abstract: A black-spotted duodenal mucosa was observed during endoscopy of a man with several comorbidities including hypertension and end-stage kidney disease. Histopathological examination revealed pigment-laden macrophages in the lamina propria of the duodenal villi, which was consistent with duodenal pseudomelanosis.

Keywords: pseudomelanosis; duodenal; duodeni; pigmentation; iron; endoscopy

Citation: D'Ercole, M.; Lopez, G.; Elli, L.; Ferrero, S.; Croci, G.A. A Rare Case of Duodenal Pseudomelanosis. *Diagnostics* **2021**, *11*, 2152. <https://doi.org/10.3390/diagnostics11112152>

Academic Editor: Takuji Tanaka

Received: 15 November 2021

Accepted: 18 November 2021

Published: 20 November 2021

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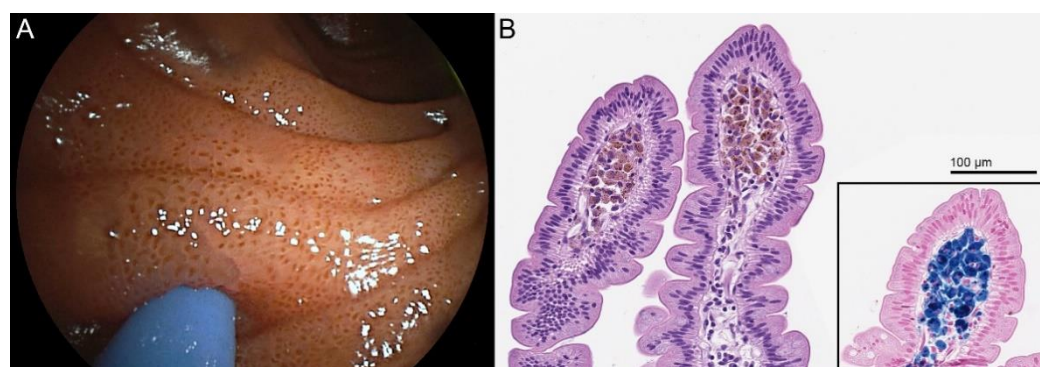


Figure 1. A 75-year-old man underwent endoscopy for obstructive lithiasic cholangitis. His medical history included gastric resection for non-Hodgkin lymphoma, monoclonal gammopathy of undetermined significance (MGUS), HCV infection, hypertension, and stage 4 chronic kidney disease. His medications included furosemide, metoprolol, and amlodipine. During the endoscopy, the duodenal mucosa presented spotted black pigmentation at the tip of the villi (A). Duodenal biopsy samples stained with routine hematoxylin and eosin (B) showed aggregates of pigment-laden macrophages in the lamina propria of the apical portion of the villi, which tested intensely positive with Perl's stain for iron; enterocytes demonstrated a faint positivity for Perl's Prussian blue underneath the microvilli (B, inset). These findings were consistent for duodenal pseudomelanosis, a benign condition which harbors no known clinical sequelae [1–13].

Author Contributions: M.D. and G.L., histopathologic description, writing—original draft; G.L. and L.E., visualization; L.E. performed endoscopy; G.A.C. and S.F., supervision, writing—review and editing. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Written informed consent has been obtained from the patient's next of kin to publish this paper.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

References

1. Giusto, D.; Jakate, S. Pseudomelanosis duodeni: Associated with multiple clinical conditions and unpredictable iron stainability—A case series. *Endoscopy* **2008**, *40*, 165–167.
2. de Magalhães Costa, M.H.D.M.; Pegado, M.G.F.; Vargas, C.; Castro, M.E.C.; Madi, K.; Nunes, T.; Zaltman, C. Pseudomelanosis duodeni associated with chronic renal failure. *World J. Gastroenterol.* **2012**, *18*, 1414–1416.
3. Kim, S.Y.; Choung, R.S.; Kwon, B.S.; Hyun, J.J.; Jung, S.W.; Koo, J.S.; Yim, H.J.; Lee, S.W.; Choi, J.H. Small Bowel Pseudomelanosis Associated with Oral Iron Therapy. *J. Korean Med. Sci.* **2013**, *28*, 1103–1106.
4. Nakanishi, Y.; Jetly-Shridhar, R.; De Felice, K. A Case of Pseudomelanosis Duodeni: Striking Endoscopic Features with Subtle but Characteristic Pathologic Findings. *Int. J. Surg. Pathol.* **2019**, *27*, 765–766.
5. Tang, S.-J.; Zhang, S.; Grunes, D.E. Gastric and duodenal pseudomelanosis: A new insight into its pathogenesis. *VideoGIE* **2019**, *4*, 467–468.
6. Shimamura, Y.; Akram, H.; Winer, S.; Marcon, N. Pseudomelanosis Duodeni and Duodenal Polyp. *Intern. Med.* **2018**, *57*, 1049–1050.
7. Mundi, I.; Pankaj, R.; Chhabra, M.; Banerjee, A.K. Pseudomelanosis Duodeni. *Int. J. Surg. Pathol.* **2017**, *25*, 165.
8. Abdelwareth, A.; Molyneux, A.; Madhotra, R.; Ishaq, S.; Rostami, K. Small bowel pigmentation. *Gastroenterol. Hepatol. Bed Bench* **2016**, *9*, 343–344.
9. Coelho, R.; Ribeiro, A.; Silva, R.; Rios, E.; Silva, M.; Macedo, G. Pseudomelanosis duodeni: Is there a common denominator? *Rev. Española Enferm. Dig.* **2016**, *108*, 658–659.
10. Kothadia, J.P.; Kaminski, M.; Giashuddin, S. Duodenal siderosis: A rare clinical finding in a patient with duodenal inflammation. *Ann. Gastroenterol.* **2016**, *29*, 379.
11. Sathyamurthy, A.; Chela, H.; Arif, Z.; Holly, J.; Arif, M. Pseudomelanosis Duodeni. *ACG Case Rep. J.* **2015**, *2*, 72–73.
12. Siderits, R.; Hazra, A.; Mikhail, N.; Chiaffarano, J.; Lou, W.; Fyfe, B. Endoscopically identified pseudomelanosis duodeni: Striking yet harmless. *Gastrointest. Endosc.* **2014**, *80*, 508–510.
13. Qureshi, N.U.; Younus, M.F.; Alavi, K.; Sheikh, M.Y. Gastric and Duodenal Pseudomelanosis: An Extended Unusual Finding in a Patient with End Stage Kidney Disease. *Case Rep. Gastrointest. Med.* **2016**, *2016*, 2861086.