

Image of the Month

True Colonic Melanosis: An Interesting Phenotypic Variation of Neurocristopathy

Pluripotent neural crest cells arise from the ectodermal layer of the embryo. These migrate and differentiate into array of cells varying from melanocytes to bone. Defect in the development or migration of these cells can cause a variety of phenotypic variations falling under an umbrella of neurocristopathy (1). Melanosis Coli is one of these benign neurocristopathies which involves proliferation of melanocytes in colon resulting in melanin deposition.

Herein, we report a rare case of ‘true’ colonic melanosis in a young female who underwent colonoscopy for suspected Intussusception. Colonoscopy revealed patchy black pigmentation in the ascending, transverse, descending colon and rectum (Figure 1). Tissue biopsy revealed black-grey pigment that stains with Melan A rather than the typical lipofuscin (2) pigment (Figure 2), commonly seen in patients with melanosis coli because of laxative use (3). The pigment was present inside the atypical cells amidst the inflammatory backdrop. These atypical cells stain with SOX10 and MiTF (4) (Figure 3), which is indicative of origin from neural crest cells. The cells showed a high N/C ratio with prominent nucleoli, but they did not cluster or

form mass lesion (Figure 4). Given the deposition of pigment in atypical cells instead of epithelial cells, this is likely a variant of neurocristopathy. The histology was not consistent with

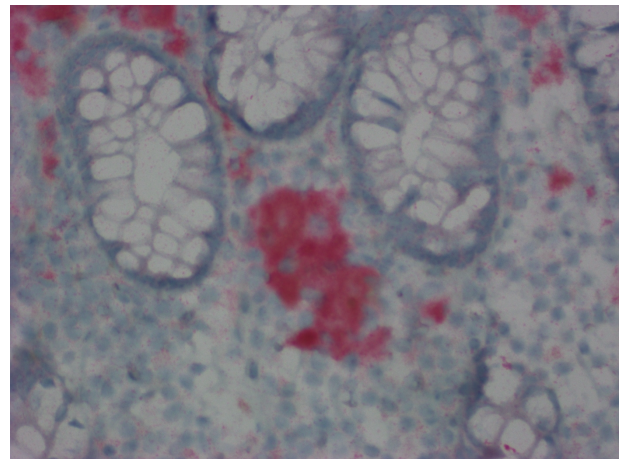


Figure 2. Immunohistochemical staining with MelanA after melanin bleach treatment demonstrates strong positive cytoplasmic staining in the pigmented cells. (400×).

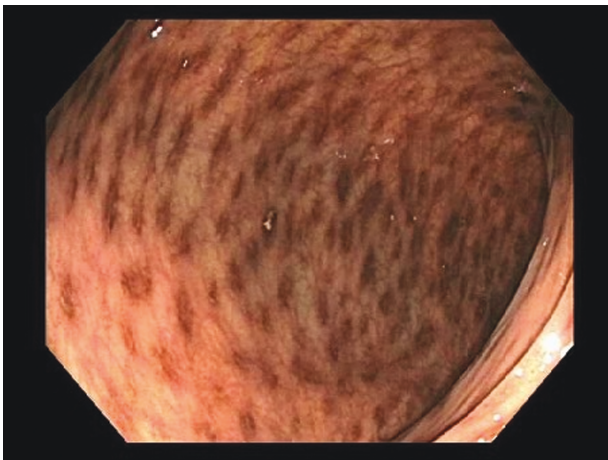


Figure 1. Endoscopic view of the descending colon showing patchy black pigmentation.

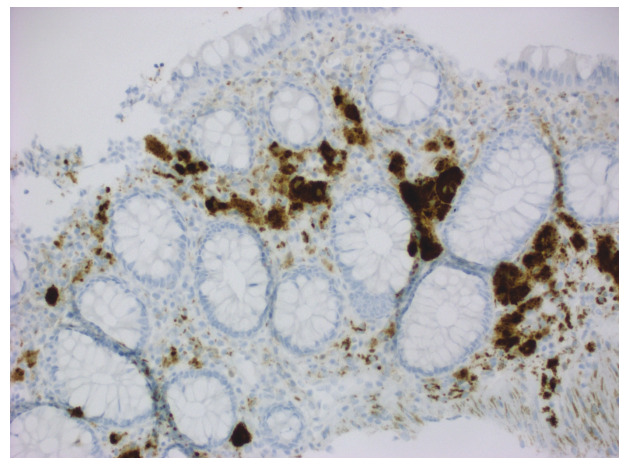


Figure 3 Immunohistochemical staining with Microphthalmia Transcription Factor (MiTF) stains the large pigmented cells positively. (200x)

Received: May 21, 2021

© The Author(s) 2021. Published by Oxford University Press on behalf of the Canadian Association of Gastroenterology. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

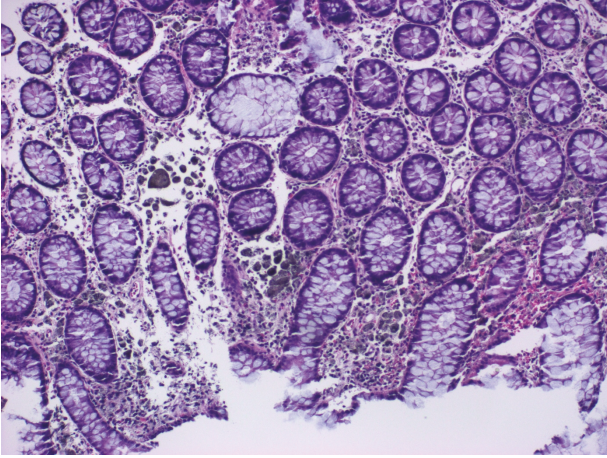


Figure 4 Colonic mucosa demonstrates infiltration of the lamina propria by numerous cells decorated with dark grey pigment, along with some larger giant cells with finely pigmented cytoplasm. (H&E, 200x)

any malignant process in our case and a 6-month follow-up revealed similar persistent pigmentation without any suspicion for malignancy.

AUTHOR CONTRIBUTIONS

M.N.: Writing and formatting the manuscript. L.A.H.: Pathologist involved in the case along with critical review and final submission. H.B.: Endoscopist involved with case along with critical review. I.A.A.: Critical review and final submission.

CONFLICT OF INTEREST

No authors have disclosed any potential conflicts (financial, professional or personal) that are relevant to the manuscript.

Mahum Nadeem, MD¹, Lewis A. Hassell, MD²,
Hussein Bitar, MD³, Ijlal Akbar Ali, MD³

¹Internal Medicine, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, USA; ²Department of Pathology, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, USA; ³Department of Gastroenterology, Oklahoma University Health Sciences Center, Oklahoma City, Oklahoma, USA

Correspondence: Ijlal Akbar Ali, MD, Digestive Diseases and Nutrition Section, Department of Gastroenterology, University of Oklahoma Health Sciences Center, Oklahoma City, Oklahoma, USA, e-mail: IjlalAkbar-Ali@ouhsc.edu

References

1. Pilon N. Pigmentation-based insertional mutagenesis is a simple and potent screening approach for identifying neurocristopathy-associated genes in mice. *Rare Dis*. 2016;4(1):e1156287.
2. Nesheiwat Z, Al Nasser Y. Melanosis Coli. *StatPearls*. Treasure Island, FL: StatPearls Publishing. Copyright© 2021, 2021.
3. Yang N, Ruan M, Jin S. Melanosis coli: A comprehensive review. *Gastroenterol Hepatol*. 2020;43(5):266–72.
4. Coe EA, Tan JY, Shapiro M, et al. The MITF-SOX10 regulated long non-coding RNA DIRC3 is a melanoma tumour suppressor. *PLoS Genet*. 2019;15(12): e1008501.