Importance of Capsule Endoscopy In Metastatic Jejunal Melanoma

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ABSTRACT

A 53 year-old male with a history of melanoma of the back presenting with iron deficiency anemia for 2 months. He did not have any overt bleeding. Endoscopy and colonoscopy was unremarkable. Capsule endoscopy revealed a partially obstructing ulcerated mass with active oozing in the proximal small bowel. Push enteroscopy with biopsies confirmed melanoma. We present this case to reiterate the importance of capsule endoscopy to help diagnose otherwise missed small bowel malignancies.

LEGEND

CE – Capsule endoscopy
CT – computed tomography
MRI – magnetic resonance imaging
MRE - Magnetic resonance enterography

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INTRODUCTION

- Diagnosing gastrointestinal malignancies in small intestines is challenging.
- Nonspecific clinical findings and inconclusive diagnostic testing
- Jejunal melanomas often aggressive and have poor prognosis
- Endoluminal studies such as endoscopies and colonoscopies can be limited.
- Ultrasound, CT and MRI miss early stages of malignancy.
- Capsule endoscopy – noninvasive and can detect malignancy at early stages.

CASE REPORT

- 53 year-old male with a history of treated melanoma of the back presented with new iron deficiency anemia.
- Endoscopy and colonoscopy were unremarkable
- Video CE revealed bleeding ulcerated mass in proximal small bowel; **figure 1**.
- Push enteroscopy demonstrated large fungating multi-lobulated jejunal mass.
- Biopsies confirmed melanoma; **figure 2**.
- CT abdomen/pelvis - small bowel mass with new metastatic tumoral implants; **figure 3**.

DISCUSSION

- ~1-5% of GI metastatic melanomas are diagnosed with imaging in the early stages.[1,2]
- Malignant lesions often found late on conventional studies with aggressive metastatic process and poor prognosis.[3]

- CE has been far more superior in diagnosing small bowel pathology
- CE yield of 68% diagnosing OGIB compared to 28% of push enteroscopy, small bowel barium radiography 8%.[4]
- CE has better detection of small bowel tumors compared to MRE; 100% compared to 67%, respectively.[5]
- Both CE and MRE appear as complementary methods
- CE characterizes subtle mucosal lesions missed on MRE, while MRE provides mural and perienteric/extra enteric information.[5]

Limitations of CE: No therapeutic or biopsy capability. Incomplete small-bowel examination, uncontrolled air insufflation, retention or delayed transition of capsule.[6]

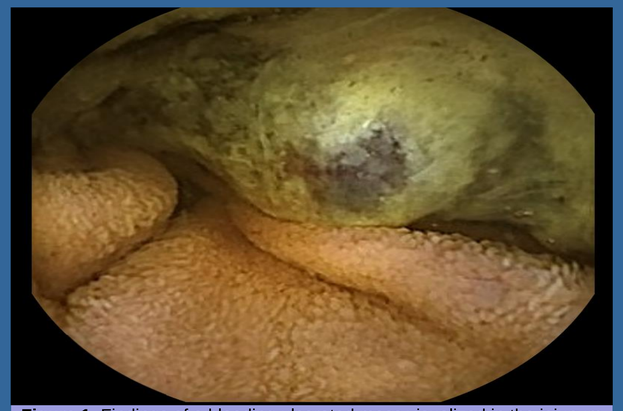

Figure 1. Findings of a bleeding ulcerated mass visualized in the jejunum with partial small bowel obstruction on video capsule endoscopy

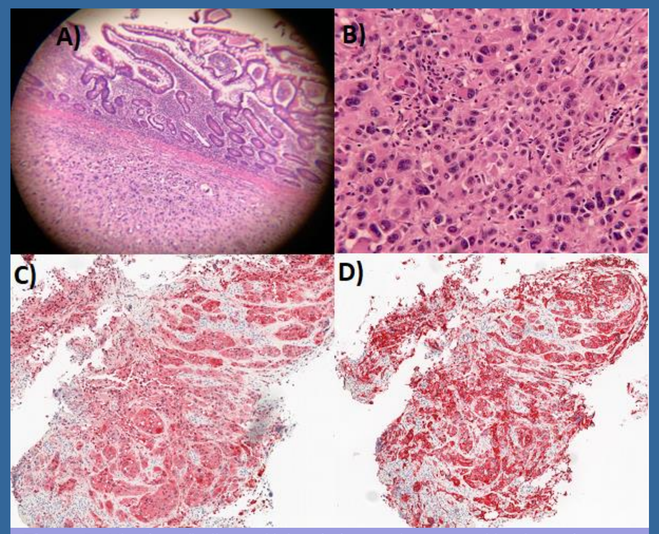

Figure 2.. Histology findings of jejunal ulcerated mass positive for melanoma.
A) H&E showing jejunal melanoma infiltrated with malignant spindle shaped cells in submucosa of the jejunum. H&E x100.
B) H&E showing jejunal melanoma with markedly cytologic atypia with large eosinophilic nucleoli, and moderate cytoplasm with melanin pigment deposition. H&E x200.
C) Jejunal tumor cells positive for S-100 in both nucleus and cytoplasm confirming jejunal melanoma.
D) MART-1 stain positive for jejunal melanoma

Figure 3. CT abdomen and pelvis with contrast showing a small bowel jejunal mass (Blue unfilled arrow) with new metastatic tumoral implants in the left mid abdominal mesentery adjacent to small bowel loops with largest tumor measuring 4.5 x 3.1 cm in size (White single line arrows).

CONCLUSION

- CE - invaluable tool for investigating obscure GI bleed in small bowel
- Small bowel tumors and other pathological lesions/obstructions better visualized
- May help detect small bowel disease early on before unamenable to medical/surgical therapies.

REFERENCES

[1] Hadjinicolaou, A. V., Hadjittofi, C., Athanasopoulos, P. G., Shah, R., & Ala, A. A. (2016). Primary small bowel melanomas: fact or myth? *Annals of Translational Medicine*, *4*(6), 113. https://doi.org/10.21037/atm.2016.03.29
[2] Conversano, A., Macina, S., Indellicato, R., Lacavalla, D., & D'Abbicco, D. (2014). Gastrointestinal bleeding as presentation of small bowel metastases of malignant melanoma: Is surgery a good choice? *International Journal of Surgery Case Reports*, *5*(10), 774–778. https://doi.org/10.1016/j.ijscr.2014.09.003
[3] Schuchter, L. M., Green, R., & Fraker, D. (2000). Primary and metastatic diseases in malignant melanoma of the gastrointestinal tract. *Current Opinion in Oncology*, *12*(2), 181–185. https://doi.org/10.1097/00001622-200003000-00014
[4] Triester, S. L., Leighton, J. A., Leontiadis, G. I., Fleischer, D. E., Hara, A. K., Heigh, R. I., Shiff, A. D., & Sharma, V. K. (2005). A Meta-Analysis of the Yield of Capsule Endoscopy Compared to Other Diagnostic Modalities in Patients with Obscure Gastrointestinal Bleeding. *The American Journal of Gastroenterology*, *100*(11), 2407–2418. https://doi.org/10.1111/j.1572-0241.2005.00274.x
[5] Crook, D. W., Knuesel, P. R., Froehlich, J. M., Eigenmann, F., Unterweger, M., Beer, H. J., & Kubik-Huch, R. A. (2009). Comparison of magnetic resonance enterography and video capsule endoscopy in evaluating small bowel disease. *European Journal of Gastroenterology & Hepatology*, *21*(1), 54–65. https://doi.org/10.1097/meg.0b013e32830ce7a7
[6] Kwack, W. G., & Lim, Y. J. (2016). Current Status and Research into Overcoming Limitations of Capsule Endoscopy. *Clinical Endoscopy*, *49*(1), 8–15. https://doi.org/10.5946/ce.2016.49.1.8