

## SMALL BOWELL METASTASIS OF MALIGNANT MELANOMA CAUSING INTUSSUSCEPTION

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### INTRODUCTION

Melanoma of the gastrointestinal tract is an unusual presentation of malignant melanoma. Gastrointestinal metastasis of melanoma is extremely infrequent and there are only sporadic case reports of primary gastrointestinal melanoma (Zheng et al. 2020). The metastases of melanoma to the gastrointestinal tract are rarely detected preoperatively, and usually present with symptoms of bowel obstruction. They are associated with late stage melanoma and low 5-year survival (Vrable & Chang 2017).

Although various treatment strategies have been tried in patients with intestinal melanoma, surgical removal of intestinal metastases is the treatment of choice in patients with resectable tumors, especially when causing symptoms of bowel obstruction. Radical excision is the treatment of choice for intestinal metastasis of melanoma but added morbidity and mortality of those operations should be considered. Systemic adjuvant therapy has a limited role in these patients (Yang et al. 2018) and studies are being conducted in the efficacy of immune checkpoint inhibitors (Byrne & Fisher 2017).

### CASE REPORT

A 49-year-old male patient, with a 3-year history of malignant melanoma, was admitted to the Department of Surgery, with abdominal pain, nausea, anemia and recent weight loss. His past medical history includes surgical resection of cutaneous lesion on his back. Pathohistological examination confirmed a cutaneous melanoma, 2.5 mm in thickness (Clark 2, Breslow 3). Subsequent lymphoscintigraphy and sentinel node biopsy was negative, and postoperative recovery was unremarkable. Treatment was followed by 6 months of interferon alpha therapy which was stopped due to poor patient tolerance.

Abdominal radiography showed signs of small bowel obstruction (gas-fluid levels). An emergency computed tomography (CT) scan of the abdomen and pelvis was performed and indicated a solid tumor mass of the lower abdomen, above the iliac bone crest infiltrating the ileal wall. The radiologist suspected a secondary tumor deposit.

After a brief preoperative preparation an emergency explorative laparotomy was performed. Explorative laparotomy revealed a 20-cm long ileal loop intussusception with mesenteric thickening (Figure 1). Small bowel intussusception with metastasis of malignant melanoma.

Resection of a 35 cm-long ileal segment and end to end anastomosis was performed. After resection the ileum segment was explored and melanoma like solid tumor mass; measuring 3x2 cm was found.

The pathology report confirmed the presence of a white yellowish tumor of measuring 3x4x2 cm in the resected segment of the proximal ileum. The neoplasm extended to the mucosa causing focal areas of ulceration.

The histological examination showed highly atypical tissue with an epithelial aspect.

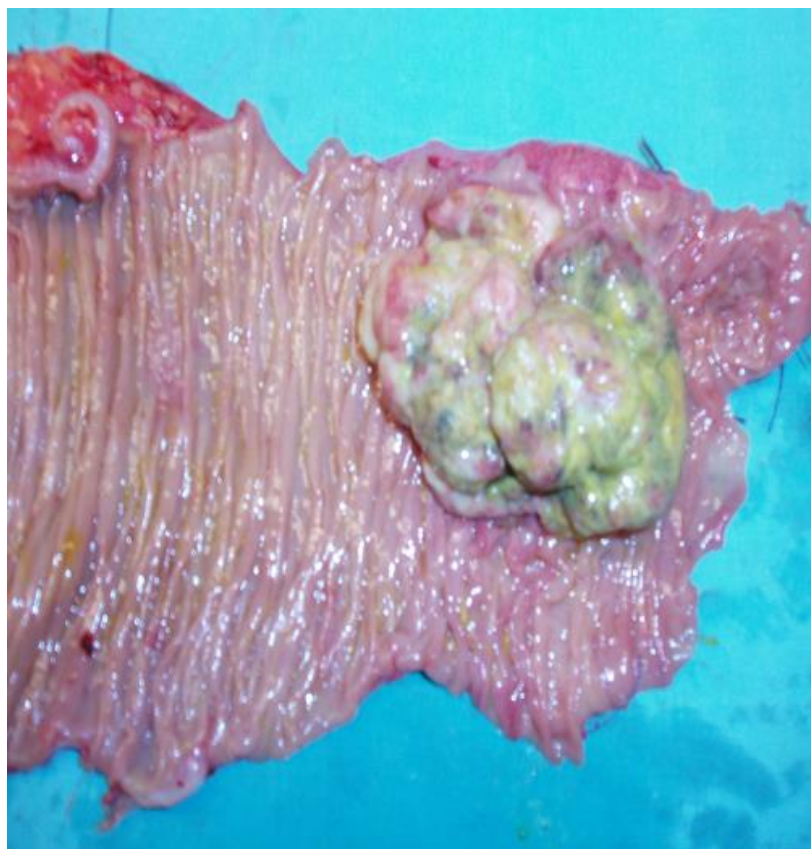
Immunohistochemical staining revealed that the neoplastic cells were strongly reactive for HMB-45, Melan A, S 100.

Pathological and immunohistochemical findings were compatible with melanoma metastases. The post-operative course was regular and uneventful. The patient underwent dermatological examinations in order to find a possible cutaneous lesion, and an ophthalmologic consultation was performed, but no new site of malignant melanoma was found. Therefore, the neoplasm was considered the metastases of the earlier cutaneous melanoma. Oncologist recommended no oncological treatment, but follow-up only.

Four years after the surgery there are no signs of recurrence or metastasis of the tumor and patient is in good health.

### DISCUSSION

Metastatic melanoma to the GI tract accounts for one third of all metastases to that region. Sites commonly involved are the small bowel, followed by the large bowel, and the stomach. The recorded incidence of GI metastases of melanoma in autopsy series reaches up to 58% (Holmberg et al. 2019). The risk factors for malignant melanoma spread to the GI tract include superficial spreading melanoma, axial primary tumor, a Clark level III or IV, high degree of histologic, regression, ulceration, and high mitotic rate.



**Figure 1.** Small bowel metastatic melanoma

Small bowel melanoma is a rare entity with difficult diagnosis. The majority of these neoplastic lesions are metastatic from primary skin lesions. A clear histological distinction between primary small bowel and metastatic intestinal melanoma is very difficult to establish. In most cases, metastatic melanoma of the small bowel is clinically silent. An acute presentation may rarely occur due to intestinal obstruction or intussusception. Adult intussusception has malignant tumors as underlying cause in 32.9% of the cases (Hong et al 2019). The small bowel is the most common site for gastrointestinal metastatic melanoma (Silva et al 2018). Despite this, few cases of small bowel intussusceptions due to metastatic melanoma have been reported. Pathology provides the definitive diagnosis, with imaging studies used to establish the indication for surgery. Intestinal resection continues to be the treatment of choice in the majority of cases (Holmberg et al. 2019).

## CONCLUSION

Our patient presented with no satellite or in-transit metastases, no regional lymph node metastasis and negative sentinel lymph node biopsy, so we questioned the origin of small bowel melanoma metastasis. Since clinical and pathohistological findings indicated metastatic melanoma and excluded lymph pathway as a possible for metastasis presented, the only possible metastatic pathway was the bloodstream, that is intra-

vascular invasion and circulation of melanoma cells in the bloodstream with subsequent development of distant micro metastases. Further, we questioned why the small bowel was the metastatic development location and no other location was detected. One possible answer is malignant melanoma stem cells responsible for melanoma therapy-resistance, tumor invasiveness, and neoplastic progression overlapping signaling networks that regulate both stem cell migration and malignant melanoma dissemination (Kodet et al. 2020).

Recent studies have implicated the chemokine receptor CCR9 and its ligand CCL25 as signals that allow malignant melanoma cells to preferentially metastasize to the small bowel (Wang et al 2018). This expression of chemokine receptors in melanoma cells associated with the expression of the respective chemokine receptor ligands in the target sites of the metastasis is an interesting observation which may also stimulate the development of new therapeutic strategies.

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**Contribution of individual authors:**

All authors reviewed and discussed the manuscript draft and contributed to the final manuscript and all authors give final approval of the version to be submitted.

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