

# Rare Case of Bowel Obstruction due to Abdominal Metastases from Malignant Melanoma

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**Abstract:** *Bowel obstruction due to melanoma metastases is a severe complication seen in advanced melanoma stages. This case report details a 38-year-old patient who presented with acute bowel obstruction caused by metastatic melanoma. Initial imaging revealed extensive tumor involvement in the abdominal cavity, including significant masses compressing the intestinal lumen. The patient had a history of a previous melanoma diagnosis, but staging and follow-up were inadequate. Surgical intervention was performed, including tumor resection and bowel resection, which alleviated the obstruction. Postoperative management included targeted therapy, which led to a partial response and eventually a complete response on follow-up imaging. This case underscores the critical role of surgical intervention in managing metastatic melanoma complications and highlights the importance of regular surveillance and staging to improve outcomes. A multidisciplinary approach, integrating surgical and systemic therapies, is essential for optimal management and enhancing patient quality of life.*

**Keywords:** bowel obstruction, melanoma metastases, advanced melanoma

## 1. Introduction

Melanoma is one of the most aggressive forms of skin cancer, known for its ability to rapidly metastasize and cause significant morbidity and mortality. Despite representing a small percentage of overall skin cancer cases, melanoma accounts for the majority of skin cancer-related deaths. The incidence of melanoma has been rising steadily over the past few decades, making it a growing public health concern worldwide [1]-[3]. Recent advancements in the understanding of melanoma biology have led to significant progress in the development of targeted therapies and immunotherapies, transforming the treatment landscape for patients with advanced disease [4]. However, challenges remain, particularly in the management of metastatic melanoma, where the disease's heterogeneity and potential for therapeutic resistance complicate treatment efforts [5], [6].

Metastatic melanoma is a highly aggressive cancer that can spread to various parts of the body, leading to a range of serious complications [7], [8]. When melanoma metastasizes, it can invade multiple organs and tissues, causing significant health problems that can be life-threatening. Understanding these complications is crucial for effective management and treatment. Melanoma can metastasize to the gastrointestinal (GI) tract, leading to complications such as bowel obstruction, bleeding, and perforation. Patients may experience symptoms like abdominal pain, nausea, vomiting, and changes in bowel habits. GI tract metastases can be particularly challenging to manage and often require surgical intervention. The complications arising from metastatic melanoma are diverse and often severe, affecting multiple organ systems. These complications not only compromise the quality of life but also present significant challenges in the management and treatment of the disease. Early detection and a multidisciplinary approach are essential in addressing these complications and improving patient outcomes. As research continues to evolve, new therapies and strategies are

needed to better manage the complex challenges posed by metastatic melanoma [9].

We present a case of bowel obstruction due to metastases in GI tract from melanoma.

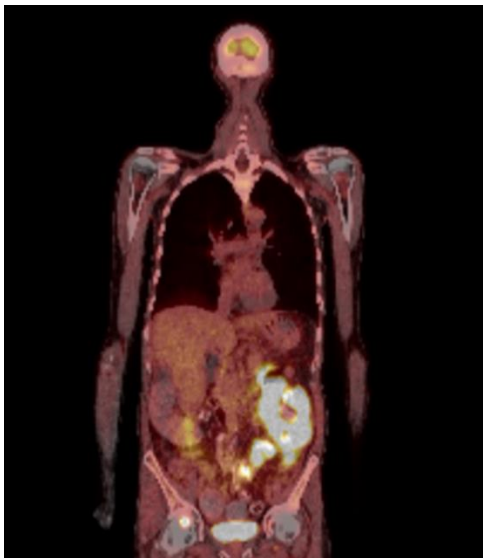
## 2. Clinical Case

A 38-year-old man was urgently hospitalized due to symptoms of acute bowel obstruction. An emergency CT scan revealed multiple tumor formations in the abdomen. The bowel obstruction responded to conservative treatment, and the patient was discharged and referred to an oncology center. The patient reported that two years ago he underwent an outpatient surgery for a skin mole on his neck, which was histologically diagnosed as malignant melanoma. At that time, the patient did not undergo staging imaging studies and was only monitored with periodic clinical examinations by a dermatologist.

To stage the disease and determine an appropriate treatment plan, a PET/CT scan was performed, which revealed:

**Abdomen and Pelvis:** Physiological glucose metabolism in the liver, spleen, and left adrenal gland, with no hypermetabolic pathological foci. A nodular hypermetabolic lesion is visualized at the medial branch of the right adrenal gland, measuring 32 mm x 22 mm, with increased metabolic activity (SUV<sub>max</sub> - 8.62). **Gastrointestinal Tract:** There is a heterogeneous distribution of the radiotracer along the gastrointestinal tract, with the presence of significantly distended intestinal loops and hydro-aeric levels indicative of a subileus. In the left abdominal quadrant, a hypermetabolic soft tissue formation is located exophytically at the level of the distal small bowel loops, just below the lower pole of the left kidney. This formation, which compresses and narrows the bowel lumen, measures 10.8 mm x 8.5 mm and exhibits high metabolic activity (SUV<sub>max</sub> - 22.02, TLG - 6782.8 cm<sup>3</sup>, score 5). **Additional Findings:** Similar hypermetabolic

foci are observed along the intestinal loops in the right abdominal quadrant and distal to the described hypermetabolic formation, with the maximum metabolic activity being SUVmax - 6.7. Single mesenteric lymph nodes show radiotracer uptake with SUVmax - 2.89. There are no hypermetabolic paraaortic, paracaval, parailiac, or inguinal lymph nodes identified. A small amount of ascites is noted in the lower abdominal quadrant. A hypermetabolic focus is located at the posterior aspect of the prostate/rectum with SUVmax-6.17. No other metastases were found. (fig. 1).



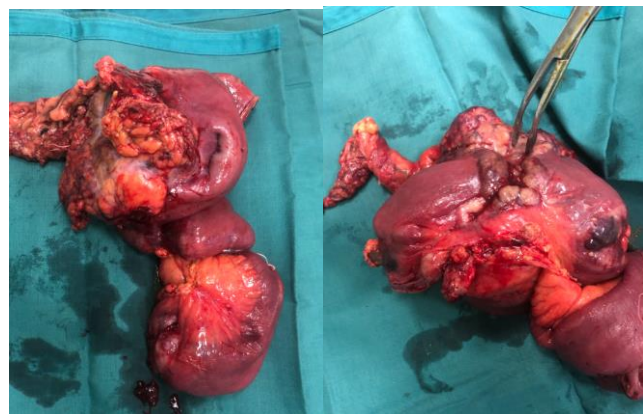
**Figure 1:** PET/CT showing multiple abdominal metastases

The patient underwent surgery under delayed emergency conditions. The surgical protocol was as follows:

Midline laparotomy. Severe dilation of the entire small intestine was found, consistent with ileus, caused by several tumor formations with a pigmented appearance on its wall. The largest tumor, approximately 20 cm in diameter, encompassed the small intestine immediately after the ligament of Treitz, the omentum, and the parietal sigmoid colon. (fig.2) The sigmoid colon was freed through parietal excision and sutured. An omentectomy was then performed. A tumor formation in the terminal ileum causing obstruction and invagination was identified. The affected bowel segment was resected, and both ends were brought out as an ileostomy on the right side, through which the small intestine was intubated and debridement was performed. The small intestine was resected immediately after the ligament of Treitz over a length of approximately 1 meter, removing the large tumor formation and several smaller ones along the resected segment (fig. 3). Additionally, a 5 cm diameter tumor formation from the jejunum was excised, and the bowel was sutured. A T-T jejuno-jejunostomy was created below the ligament of Treitz. Lavage was performed. The abdominal wall was closed in layers with two abdominal drains placed.



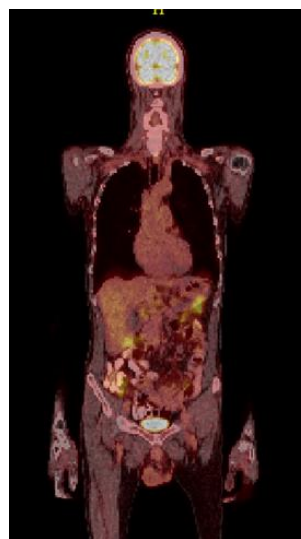
**Figure 2:** Intraoperative finding



**Figure 3:** Resected specimen

The postoperative period proceeded without complications, and the patient was discharged on the 9th postoperative day. The ileostomy was reversed after 6 months.

Histology showed metastases from melanoma, with BRAF positive status. Target-therapy with dabrafenid and trametinib was initiated. PET/CT in 6 and 12 months showed partial response. PET/CT in 24 months is indicative of complete response (CR). Targeted therapy has been continued, and the PET/CT after 36 months shows stable disease with no evidence of metastatic lesions (fig. 4).



**Figure 4:** PET/CT with no evidence of metastases

### 3. Discussion

Ileus resulting from melanoma metastases is a serious complication that occurs in patients with advanced stages of the disease. Melanoma metastases can affect various organs, including the gastrointestinal tract, leading to a mechanical obstruction of the intestines. Melanoma has a tendency to metastasize to the abdominal cavity, where it can spread to the small or large intestine. When metastatic tumors reach significant sizes or their location causes compression of the intestinal lumen, this can lead to ileus—a condition in which the passage of contents through the intestines is blocked. The clinical manifestations of ileus caused by melanoma metastases include severe abdominal pain, vomiting, abdominal distension, and an inability to pass gas or stools. These symptoms require urgent medical intervention, as ileus can lead to serious complications such as intestinal perforation, peritonitis, and sepsis. Treatment for ileus caused by melanoma metastases is typically surgical and involves the removal of the tumor mass causing the obstruction. In some cases, resection of the affected segment of the intestine may also be necessary. The surgery aims not only to alleviate symptoms and prevent life-threatening complications but also to achieve tumor reduction.

Surgery plays a crucial role in the treatment of metastatic melanoma, despite significant advancements in systemic therapies such as targeted therapy and immunotherapy [10], [11]. While these new methods are often effective, many patients develop resistance to them or do not respond to the treatment. In these cases, surgery can be a key component of a multidisciplinary approach to managing the disease. One of the primary roles of surgery in metastatic melanoma is achieving R0 resection, which means complete removal of visible tumor lesions. This can lead to significant prolongation of survival and even long-term remission in certain patients, particularly when the metastases are localized and can be entirely removed. Surgery is especially beneficial in cases of oligometastasis, where the number of metastases is limited, and their removal can be pivotal for disease control. Additionally, surgical intervention can provide biopsy material for further genetic and molecular analyses, which can assist in tailoring subsequent treatment based on the tumor's individual characteristics. This is particularly important in cases where resistance to current therapy is observed and a new treatment strategy needs to be developed. Finally, surgery can have a palliative role when the primary goal is to alleviate symptoms and improve the patient's quality of life. In cases of painful or symptomatic metastases, surgical removal of these lesions can significantly enhance the patient's comfort and functionality.

The term "NED" stands for "No Evidence of Disease" and is used in the context of melanoma to describe a clinical situation where, following treatment, there is no detectable evidence of active cancer. This stage is particularly relevant after a patient has undergone surgical intervention or systemic therapy aimed at eradicating the tumor. Achieving an NED status is often a key goal of treatment. It indicates that, based on current imaging studies and clinical evaluations, there are no visible or measurable tumor deposits. While NED is a positive outcome, it does not guarantee a cure. Melanoma is known for its potential to

recur, sometimes years after initial treatment. Therefore, patients who achieve NED are typically placed under rigorous follow-up schedules to monitor for any signs of recurrence or new metastases. Achieving NED may involve a range of treatment modalities, including surgical resection, targeted therapy, immunotherapy, or a combination of these approaches. The approach depends on the individual characteristics of the melanoma, such as its stage, location, and genetic profile. Patients with NED status are considered to be in remission, but continuous surveillance is necessary to ensure that any recurrence is promptly addressed. The long-term outlook for patients with NED can be favorable, especially if they remain in this state for an extended period, but each patient's situation is unique and requires personalized care.

In summary, the NED stage in melanoma represents a significant milestone in cancer treatment, indicating that there is currently no detectable evidence of disease. However, due to the potential for recurrence, ongoing monitoring and follow-up are essential components of long-term care for these patients.

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## Author Profile



**Dr. Venelin Georgiev, MD, PhD** is working as surgeon in the Department of General and Abdominal Surgery of University Specialized Hospital for Active Treatment in Oncology, Sofia, Bulgaria. Dr. Georgiev's scientific interests are focused on contemporary and innovative approaches to intraoperative staging in cancer patients, detection and biopsy of sentinel lymph nodes, and refining the extent of radical and limited lymph node dissections. As a practicing specialist, Dr. Georgiev has worked for many years daily with cancer patients at the largest oncology center in Bulgaria. He is part of a multidisciplinary team offering comprehensive diagnosis and treatment according to current global oncology guidelines.