

## Small Bowel Perforation: An Atypical Presentation of Metastatic Melanoma of the Abdominal Cavity.

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**Abstract:** Malignant melanomas of the intestines are rare; though there is general agreement that metastatic melanoma is the most common extra-abdominal tumor that metastasises to the gastrointestinal tract<sup>(1)</sup>. Patients usually present with chronic, and rarely acute, abdominal symptoms many years after initial evaluation and treatment of the primary tumor which could be cutaneous or ocular. Diagnosis can be challenging and delayed, unless there is awareness of the link between previous melanoma treatment and current abdominal symptoms. Prognosis can be good if palliative surgery is able to resect all involved tissues of the intestines as early as possible. We managed a 42 year old female who presented with jejunal perforation from metastatic melanoma four years after initial treatment of malignant melanoma of the foot. She had a successful intestinal repair surgery, but was lost to follow up three months after discharge. Our hope is that this case could add to our understanding of this disease, malignant melanoma, which pursues a potentially sinister course.

**Keywords:** Acute Abdomen, Intestinal Perforation, Intestinal Anastomosis, Palliative Surgery, Ovarian melanoma

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### I. Introduction

Primary and secondary malignant tumors of the small bowel are considered rare lesions, and malignant melanomas of the intestines are no exceptions<sup>2</sup>. In 1952 Willis reviewed 135 cases of tumor deposit to the small bowel and found 45 to be from malignant melanoma<sup>3</sup>. Small bowel metastasis from malignant melanoma is becoming increasingly more common and is now the most common extra-abdominal source of small bowel metastasis<sup>4</sup>. The reported incidence ranges from 35-50%<sup>5</sup>. Chemokine receptor, CCR9, and its ligand, CCL25, have been implicated as signals that allow malignant melanoma to preferentially metastasize to the small intestine<sup>6</sup>. Metastasis to the stomach is less common and that to the colon is considered rare (probably because of greater blood supply of the small intestines and a wider aggregate surface area).

The diagnosis of metastatic malignant melanoma of the intestine is usually delayed. This results in complications, probably because knowledge of its increasing incidence is yet not widespread among medical practitioners. There should be a high index of suspicion if a previous melanoma patient presents with chronic symptoms of gastro-intestinal (GI) blood loss, abdominal pain, anorexia, nausea and weight loss or acute symptoms of intestinal obstruction, massive GI haemorrhage or perforation with peritonitis.

Imaging modalities that can elucidate these tumors at an early stage will include trans-abdominal ultrasound scan, CT and upper GI series with small bowel follow through. But where the facilities exist, better imaging modalities are helical CT scan, 18F-2-Fluoro-2-deoxy-D-glucose position emission tomography (FDG PET SCAN) and capsule endoscopy<sup>7</sup>.

Adjuvant therapy is largely ineffective in the treatment of malignant melanoma. It is recommended that palliative surgery be advised early for intra-abdominal metastatic melanoma, and to be thorough as patient's condition and extent of disease will allow. Prognosis after such surgery in selected cases is said to be better than in metastatic melanoma in other organs or in simultaneous small bowel and other organ metastasis<sup>8</sup>.

Survival in melanoma patients with visceral metastasis averages 4.7-9.7 months<sup>9,10</sup>, but this is not universally accepted since some report longer survival in early metastatic melanoma of intestine with appropriate surgery<sup>11</sup>.

## II. Case Report

K.N. is a 42 year old black female, mother of four children, who lives and works as a typist in Enugu. She presented to the accident and emergency unit of our hospital with one week history of worsening abdominal pain. The pain was constant and aggravated by movement. There was also gradually progressive abdominal distension and fever. No vomiting, no blood in stool and no trauma. In systemic review, there was no headache, no cough and no jaundice.

She had surgery 4 years previously in a peripheral hospital for a dark, itchy and bleeding foot lesion. She was not aware of the histological diagnosis. Her menstrual cycles were regular. She has been taking various non-steroid anti-inflammatory drugs for her chronic low back ache. There is no family history of similar cutaneous lesion or surgery for such. Her source of water supply is borehole and she took alcohol only occasionally.

Physical examination showed a patient in obvious distress with abdominal distension. Vital signs were BP-80/60 mmHg, pulse – 120 beats per minute, respiratory-24 cycles/min and temperature was 37.8<sup>0</sup>C.

Abdominal examination showed a uniformly distended abdomen, generalized abdominal tenderness with guarding and rebound. Digital rectal examination was essentially normal. Systemic examination revealed a dark patch on the medial aspect of the left forefoot, approximately 6cmx4cm.

A working diagnosis of shock from generalized peritonitis secondary to perforated duodenal ulcer was made and she was prepared for emergency laparotomy after resuscitation with normal saline at 60 drops per minute until she was out of shock. Intranasal oxygen at 6 litres/min, and intravenous ceftriazone 1g and metronidazole 500mg were also added. Input and output monitoring was started.

### Results of investigations were as follows:

Hemoglobin -11.5gm/dl, WBC -7800x/10<sup>3</sup> with neutrophilia. Platelet count -230,000 cells/ $\mu$ l. Electrolytes, Urea and creatinine were essentially normal.

Plain CXR (PA view) -no gas under the diaphragm. Plain Abdominal X-Ray (supine) -dilated loops of bowel. Two (2) units of fresh whole blood were grouped and cross matched.

Laparotomy was done 6 hours after admission and the findings were: Copious blackish peritoneal fluid, approximately 3 litres; dark deposits in the omentum, mesentery, small bowels and an enlarged dark left ovary. There was also a wide perforation in the anti-mesenteric border of the proximal jejunum, 30cm from the ligament of Trietz, which has everted edge.

Operative procedures done include resection and anastomosis of the perforation with end to end 2-layer anastomosis with vicryl 2/0; left salpingo-ophorectomy, partial omentectomy and lavage of peritoneal cavity with warm normal saline. She was not transfused.

Histology report showed infiltrating and proliferating atypical rhabdoid pigment producing melanocytes growing and involving tissues with necrosis.

She was nursed in the intensive care unit for 24 hours before transfer to the general surgical ward. Her post-operative antibiotics were systemic ceftriazone 1g and metronidazole 500mg for 72 hours, then oral ciprofloxacin 500mg and Metronidazole 400mg for one week. She recovered very quickly with oral intake after 48 hours and post-operative hemoglobin of 10.5g/dl on the 2<sup>nd</sup> post-operative day. Her wound healed well and sutures were removed on the 8<sup>th</sup> day after surgery and she was discharged on the 10<sup>th</sup> post-operative day. She was seen in the surgical outpatient on the second week and again on the 6<sup>th</sup> week post-operative but did not attend the 12 week follow-up, despite adequate counseling on the need for regular follow-up.

### III. Figures And Explanation



**Figure 1:** Blackish sticky substance on the omentum and small intestine. Note dark peritoneal fluid on draping.

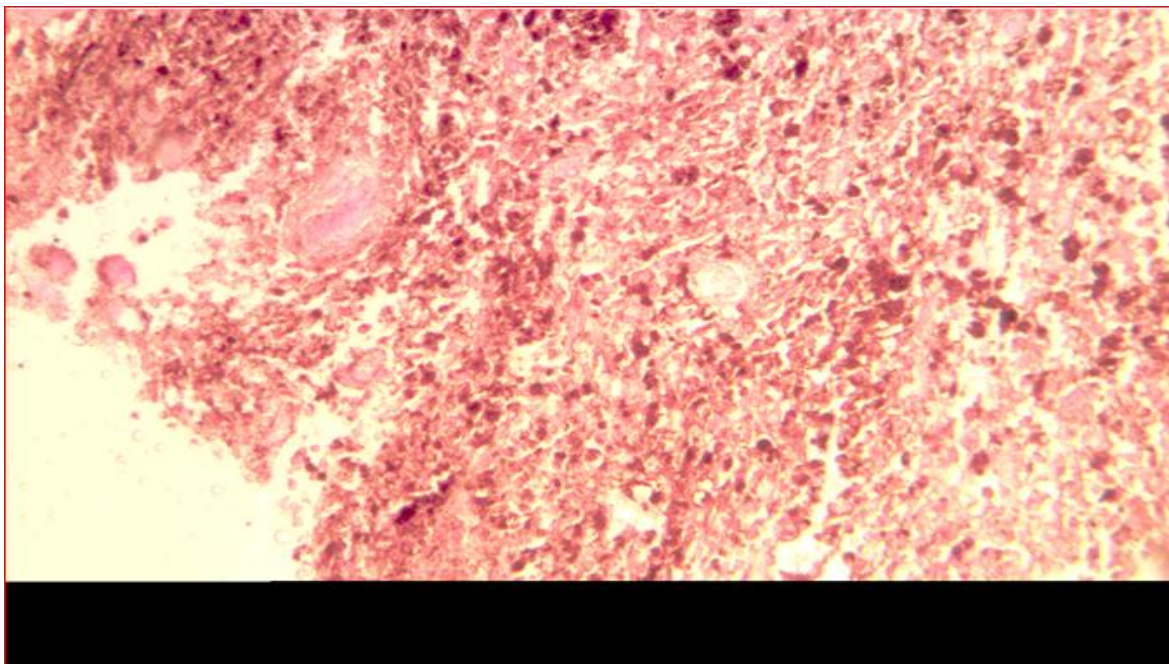


**Figure 2:** Metastatic involvement of the omentum





**Figure 3:** Wide Perforation in the jejunum; 2 finger breadth (~4cm)



**Figure 4:** Histology. Showing scattered dark cells

#### IV. Discussion

Primary and secondary malignant tumors of the small bowel are considered rare lesions<sup>1</sup>. Symptomatic extensive intra-abdominal metastatic melanoma present challenges in diagnosis and treatment and has poor prognosis<sup>10</sup>. This case reported is typical. Four years after excision and split skin grafting for an acral melanoma of the sole of the foot, the patient develops acute abdominal symptoms of unclear nature, after months of intermittent chronic abdominal pain.

The initial diagnosis of perforation of duodenal ulcer was made probably because of the history of NSAIDs use and the clinicians never really linked her previous surgery with her present symptoms until at laparotomy. In our environment, the commoner surgical causes of acute abdomen are acute appendicitis, perforated typhoid enteritis, perforated peptic ulcers and ruptured ectopic pregnancy.

Another interesting aspect was that the pathologists without adequate clinical history and without immunochemistry facility thought this was primary intestinal melanoma from the duodenum. But we believe this is metastatic melanoma from the foot, based on experience from other studies<sup>11, 12</sup>.

Presentation as an abdominal emergency was inevitable in this case due to poor follow-up after the split-skin grafting and the general attitude of our people; of not seeking medical attention early.

Perhaps earlier presentation would have resulted in earlier diagnosis with barium studies and trans-abdominal ultrasound scan, which are readily available in our centre.

Ovarian metastatic melanoma is rare. To date there are 17 cases of metastatic melanoma to the ovary in medical literature<sup>11</sup>. At post mortem 20% of people dying from metastatic melanoma have ovarian involvement<sup>12</sup>. This is not usually diagnosed before laparotomy because such patients have multiple organ involvement of disease, so that of the ovary is not clinically significant. Metastatic melanoma to the ovaries after treatment of primary cutaneous melanoma takes place from few months to 18 years and is usually unilateral<sup>1</sup>. Premenopausal women are more prone to develop metastatic melanoma to the ovary due to higher blood flow to the premenopausal ovaries<sup>13</sup>.

Palliative surgery here was not thorough enough since extensive tumor deposits, especially in the mesentery and omentum, were left behind. Though the post-operative recovery was excellent, prognosis was expected to be poor. She was well counseled on discharge on need for her to attend check-ups for life, but was soon lost to follow-up after 3 months. And one can only presume that she succumbed to the illness. We were still contemplating on an affordable biologic response modifier as adjuvant therapy when she was lost to follow up.

#### V. Conclusion

Intestinal metastatic melanoma should be highly suspected when a former malignant melanoma patient presents with gastro-intestinal symptoms. Strict follow-up at 3-6 monthly intervals initially and 6-12 monthly later and early accurate diagnostic modalities appropriate for symptoms should be employed.

Whenever there is delay in presentation or diagnosis, there is likelihood of acute complications of massive intestinal bleeding, obstruction or perforation. Without effective adjuvant therapy prognosis in extensive intra-abdominal metastatic melanoma remains poor despite palliative surgeries.

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