

## A Case Report of Small Bowel Melanoma with Unknown Primary

(Running Head: Small Bowel Melanoma)

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### Abstract

Melanoma is a skin cancer that begins in the melanocytes. It is more dangerous than other forms of skin cancer because of its ability to spread rapidly to other organs if not detected at an early stage. Melanoma generally occurs when ultraviolet (UV) radiation prompts changes in the melanocytes, resulting in mutations and uncontrolled cellular growth [1]. It is difficult to notice the warning signs because melanoma presents itself in different colors, sizes, and shapes. The cancer is curable when detected early but becomes difficult to treat once it spreads to other body parts and can be deadly. The report describes a 74-year-old female diagnosed with malignant melanoma of the small intestines, and the primary is unidentified.

**Keywords:** Malignant melanoma, small bowel melanoma, gallbladder melanoma.

### Introduction

Small bowel melanoma (SBM) is a rare entity, with a limited number of published reports. Its source, whether primary or metastatically from an unknown or regressed primary cutaneous melanoma, remains questionable. The majority are usually metastases from primary cutaneous lesions. SBM is characteristically problematic to identify because of non-specific signs and symptoms and challenging endoscopic access. This report demonstrates a malignant melanoma of the small intestine where the primary is unknown.

### Case report

A 74-year-old female was presented with anemia and fresh blood in her stool in the last three months with no history of weight loss or abdominal pain. Extensive clinical examinations revealed there were no cutaneous lesions. A series of investigations, including colonoscopy and gastroscopy were normal. PET/CT imaging revealed an increase in the uptake of FDG avid in a mesenteric mass. Her past medical history includes-bilateral lumpectomy and SLNb. Laparoscopic cholecystectomy was also diagnosed in 2015 due to gallbladder mass identified during her follow-up due to breast cancer. The pathological report revealed gallbladder melanoma. Besides total thyroidectomy due to papillary carcinoma several years ago. Her thyroglobulin level was normal. The patient during her routine surveillance underwent PET/CT which identified a mesenteric mass. The patient also underwent a

laparoscopic procedure which was converted to open laparotomy due to failure to recognize the mass. During the laparotomy, a small bowel intraluminal mass with ulceration of the small bowel serosa was identified and enlarged mesenteric lymph nodes were seen, segmental resection of the small intestine with anastomosis was done. Her post-operative follow-up was uneventful; she was discharged home, the pathological report revealed malignant melanoma, BRAF identified.

### Discussion

The common melanomas are cutaneous, but non-cutaneous lumps can also occur, although very rarely. The yearly prevalence of cancer has increased dramatically over the past decades. Diagnosing melanoma at an early stage is vital because it vastly increases the probability of cure. Surgery remains the definitive treatment for early-stage melanoma [2]. The common feature of melanoma is the melanocyte. Melanocytes are pigmented cells situated in several anatomic locations that become melanoma [3]. The small and large intestines have no melanocytes, the melanomas come from melanoblasts cells of the neural crest, which move to the distal ileum through the umbilical mesenteric canal. The APUD theory suggests that the ileum is the common spot of primary malignant melanoma within the small intestines [4]. The varieties of metastatic melanoma of the small intestines are polypoid, infiltrating, cavitory and exoenteric [5]. The four types are not distinct and can be either amelanotic or pigmented.

Melanomas of the gastrointestinal (GI) tract cause a lot of signs, depending on the size and position [6]. There are also warning signs such as anemia, GI obstruction, weight loss, and GI bleeding can also occur. If swelling of the small intestines is alleged after investigation, primary melanoma should be incorporated in the differential analysis. Researchers often propose a specific principle for the analysis of primary melanoma of small intestines—first, the existence of a solitary mucosal lesion in the intestinal epithelium. Second, the lack of lumps on the skin, and third, the existence of intramucosal lesions in the adjacent intestinal epithelium [7]. The diagnosis should focus on the occurrence of a solitary lesion.

According to the *International Journal of Cancer*, the state-level prevalence rates of UV-attributable melanoma increased due to a combination of early detection, involvement in outdoor actions and strength of the sun's rays. The report showed that the highest rates were Hawaii, Minnesota, Vermont and Utah. The report also illustrated that melanoma prevalence rates in the U.S were lowest among minorities especially blacks. The report showed that from 2011-2015, UV-exposure accounted for approximately 90 per cent in the U.S. Melanoma bears a heavy economic and health burden, with attributable expenses in states with greater melanoma prevalence. The states are implementing preventative strategies in the high-risk regions to reverse and halt the rising prevalence and mortality of cancer.

Melanoma shows a great variation in prevalence rates across different ethnic groups than other cancers. The cancer is disproportionately reported among Caucasian populations due to dwindled photoprotection from reduced melanin. The melanin barrier in dark-pigmented persons lessens UV radiation through the skin, which is a risk factor for melanoma. Research also shows that differences in altitude are also a risk factor in melanoma incidence. Regions with high altitudes are reported to have higher incidence rates among persons. Researchers also show that melanoma affects women and men differently, women are susceptible to melanoma risk partly due to indoor tanning.

Melanoma is less common than other types of cancer; however, it is more dangerous because it can spread to other body parts if not detected and treated early. Melanoma cells that make melanin often appear black or brown; those that do not produce melanin appear tan, white or pink. Melanoma is often described by stages; the stages give an idea of how far cancer has spread. During the early stage, a physical exam is enough to detect stage 1 melanoma. However, sophisticated technology, such as PET scans are required to measure melanoma's progression [8]. There are five stages of melanoma; the survival rates of the patients go down with each stage. However, each patient with melanoma is different, based on various factors; hence the survival rates are just estimates.

In Stage 0 or melanoma in situ, the patient has abnormal melanocytes that become cancerous. The melanoma appears like a small mole and seems harmless. People are

often advised to visit the dermatologist to be evaluated after any suspicious-looking marks on the skin [9]. In stage 1, the tumor is 1 mm thick and there is no ulceration. Ulceration is the lack of an intact dermis; the presence of ulceration represents a worse prognosis. The American Cancer Society estimates the survival rates for this stage are between 97 and 92 percent. In stage 2, the melanoma is greater than 1mm and the ulceration may or may not have occurred. In stage 3, cancer has spread to nearby tissues and lymph nodes near the primary spot [10]. In stage 4, the form of cancer has spread to distant skin and other body parts. Stages 0, 1 and 2 are generally referred to as early melanoma, stage 3 is called regional melanoma and stage 4 is called metastatic or advanced. Further tests are usually required to identify any gene mutation causing the cancer cells to multiply.

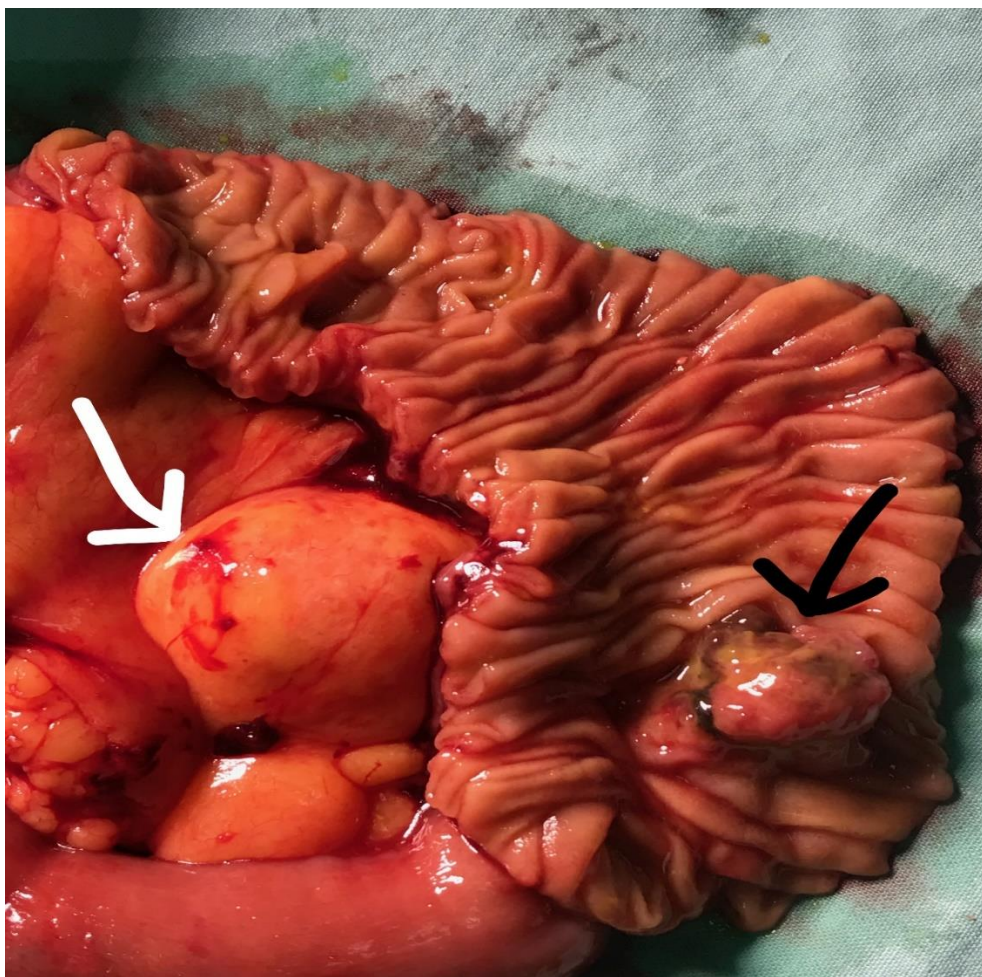
Despite advanced melanoma being challenging to treat, half of the patients who have the cancer are now surviving due to immunotherapy drugs. The use of immunotherapy drugs that boost the patient's immune system has improved survival rates [11]. In the past, advanced melanoma was viewed as untreatable because it could not be treated once it had spread. The U.S. Centers for Disease Control and Prevention (CDC) estimates that there is a 98 percent 5-year survival rate for persons whose cancer is discovered early. The survival rate of the patients was 63 percent if cancer spreads to the lymph nodes and 20 percent when it reaches the distant body organs [12]. Patients that have had melanoma are often advised to follow-up regularly with physicians to make it easier to identify a recurrence.

In the case report, the diagnosis of the 74-year-old woman was made by historical clinical examinations. The patient had no history of cutaneous melanoma; the bad prognosis was due to the ulceration of the small intestines and lymph nodes. The patient in the case report showed that she had a BRAF gene, gene mutation of approximately 40 per cent of persons with melanoma [13]. The survival rate for patients with various stages of melanoma depends on age, response to treatment and new development in cancer treatment [14]. The current treatment of choice for the patient was surgical resection. The advantage of surgical resection of persons who undertook the resection was 48 months, compared to 6 months for patients who underwent nonsurgical interventions [15]. Without surgical intervention, the likelihood of recovery for persons with melanoma is limited. The surgical operations in patients could extend survival rates after the resection of small bowel metastatic lesions.

In recent years, clinical trials have created new treatments that improve the prognosis for persons with advanced melanoma. Future studies should focus on imaging modalities which will improve resolution and sensitivity over traditional methods for early detection. This is important as it will allow better surgical removal and improve overall survival with low morbidity. A timely and accurate diagnosis of SBM and other forms of cancer will enable patients to have more therapeutic options. Continued surveillance is necessary to study and implement preventative measures in melanoma control.



The arrow is pointing to the ulceration of the small bowel.



The black arrow pointing to the intra-luminal tumor  
The white arrow pointing to the enlarged lymph node



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