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Primary small bowel melanoma. A case report and a review of the literature

K.G. SPIRIDAKIS[1], E.E. POLICHRONAKI[1], E.E. SFAKIANAKIS[1], M.E. FLAMOURAKIS[1], T.H. MARGETOUSAKIS[1], A.S. XEKALOU[2], G.K. LIANERIS[1], E.S. GIANNIKAKI[2], M.S. CHRISTODOULAKIS[1]

SUMMARY: **Primary small bowel melanoma. A case report and a review of the literature.**

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Primary malignant melanoma originating from the small intestine is extremely rare. Only a limited number of cases are described in the literature. Most commonly small intestine is affected by metastatic tumors from other primary lesions. We present a case of a 68-years old male diagnosed with primary malignant melanoma as an ulcerated and bleeding mass in the jejunum - located 40 cm away from the Treitz band. In our case the diagnosis was confirmed at laparotomy and enterectomy. Histology revealed a neoplastic infiltration involving the entire intestinal mucosa, with atypia of neoplastic cells and immunoreactivity to HMB45(+), Melan A(+) and S100(+), confirming the diagnosis of melanoma. There was not revealed a primary lesion in the skin, eye, anus, rectum or in other location by the post-operative investigation. An eleven-month close follow-up has not revealed any metastasis. Therefore a definitive diagnosis of primary malignant melanoma was set.

KEY WORDS: Malignant melanoma - Small intestine - Gastrointestinal melanoma.

Introduction

Malignant melanoma is a rare entity and accounts 1-3% of all malignant tumors of the gastrointestinal tract (1). The majority of these tumors are secondary lesions of a primary location of the skin, anus, rectum and eye (2).

Primary malignant melanomas have been also reported even if their presence is still controversial (3-5). Only a limited number of cases are described in the literature (2, 6). Distinguishing between a metastatic melanoma of the GI tract from an unknown or a regressed other primary lesion and a primary melanoma can be very difficult.

In this paper we present a case of a primary small bowel melanoma and we review the literature of this rare tumor.

Case presentation

A 68-year-old Caucasian male was admitted to the local hospital due to weakness, reported loss of fresh blood through the rectum, anorexia and weight loss since the last two months. The initial examination revealed skin paleness and tachycardia, while the clinical examination of the abdomen showed normal intestinal sounds, without other findings. The basic hematological and biochemical profiles were within the framework of normal, except for hematocrit value indicating severe anemia. The patient required intravenous fluid therapy and multiple blood transfusions. The abdominal X-Ray had no abnormal findings and CT scan, performed two months before, did not reveal anything. The patient underwent endoscopy which revealed a mass of jejunum ulcerated and bleeding. After improving patient's general condition and achieving hemodynamic stabilization, the patient underwent exploratory laparotomy. The intraoperative finding was intraluminal mass of jejunum, located 40cm away from the Treitz-band. Small bowel resection was performed with side-to-side anastomosis. The postoperative course was uneventful and the patient was discharged on the fifth postoperative day. Surgical specimen was 22 cm length, and included a 8x12cm mass that took

[1] Department of Surgery, General Hospital of Heraklion Crete "Venizelio", Greece
[2] Pathology Department, General Hospital of Heraklion Crete "Venizelio", Greece

Corresponding Author: Konstadinos G. Spiridakis, e-mail: spiridakisk@yahoo.gr

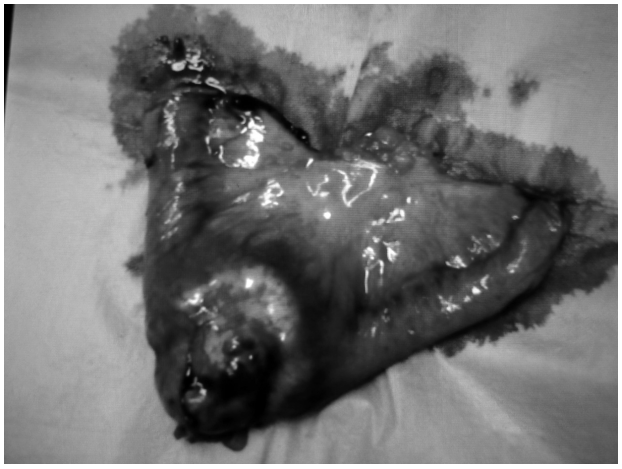

Fig. 1 - Surgical specimen of the segmental enterectomy with intraluminal mass of jejunum.

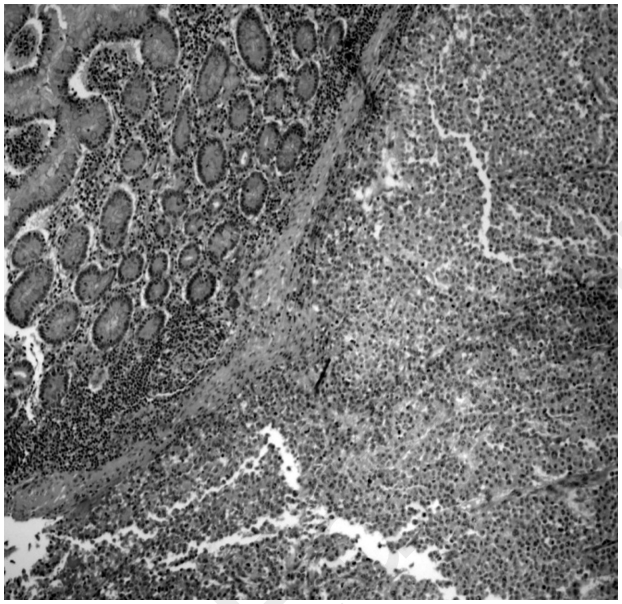

Fig. 2 - Microscopic low power view showing extensive infiltration of small bowel wall by the epithelioid neoplasm (H&E, x20).

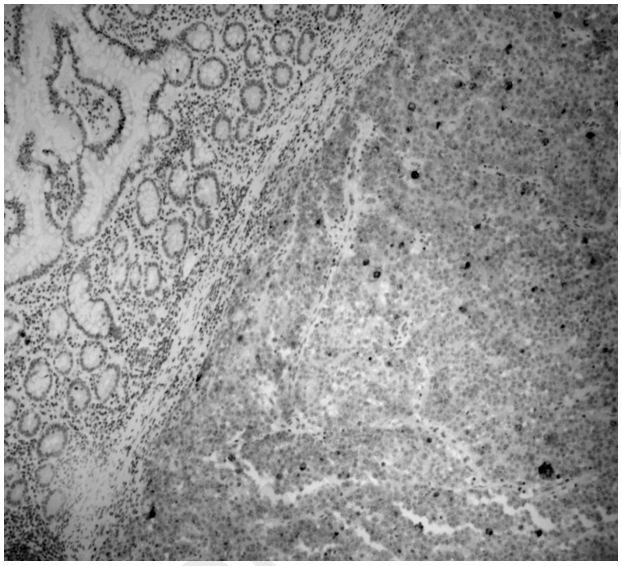

Fig. 3 - Tumor cells are positive in immunohistochemical staining for HMB-45 (x200).

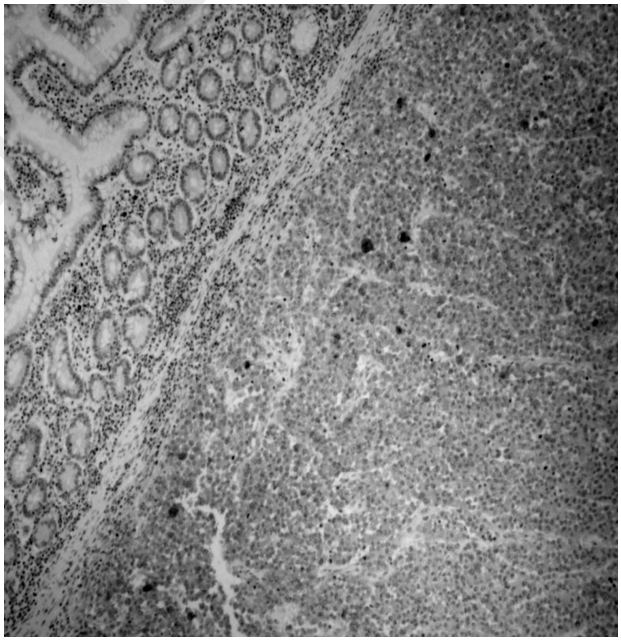

Fig. 4 - Tumor cells are positive in immunohistochemical staining for Melan A (x200).

up the gut lumen and infiltrated the entire thickness of the bowel, without extending into the surrounding adipose tissue (Figures 1 and 2). The excision limits and the lymph nodes (15) were free from tumor invasion. Panels of immunohistochemical markers showed positive in HMB 45 (+) (Figure 3), Melan A (+) (Figure 4) and S 100 (+) (Figure 5). The histological report highlighted small intestine malignant melanoma. The examination of skin, eyes, esophagus and anus was negative for primary melanoma and the investigation with chest and brain CT-scan, ultrasonography of the liver and bone scintigraphy did not report metastatic disease. The patient's medical history did not include excision of pigmented skin lesions. A eleven-months close follow-up has not revealed any metastases in other sites. Then, the final diagnosis was primary melanoma of the small intestine.

Discussion

Malignant melanoma accounts 1% to 3% of all GI malignances (7, 8). A great discussion has been developed since several cases of primary melanomas of the GI

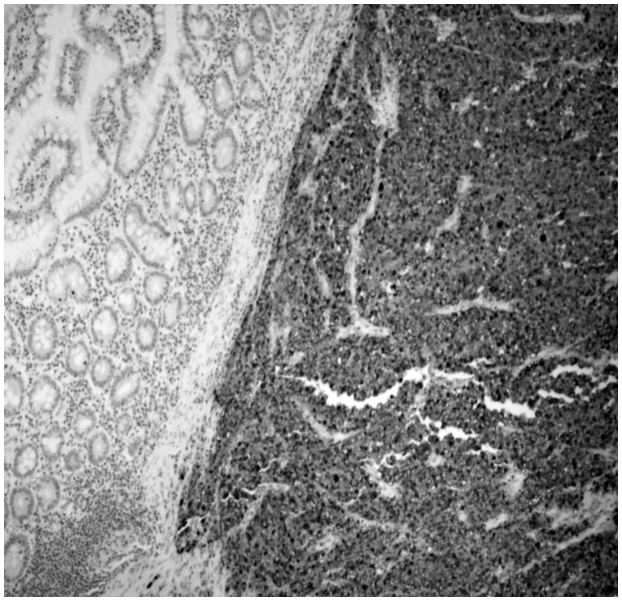

Fig. 5 - Tumor cells are positive in immunohistochemical staining for S-100 (x200).

tract has been described particularly in ileum and anus (7, 9, 10). Some researchers consider all GI tract melanomas to be metastatic in origin (2, 11, 12). This option is based in the fact that some of the cutaneous melanomas can regress spontaneously (9, 13).

Before making the diagnosis of malignant melanoma of small bowel is important to exclude other eventual primary melanomas in other sites.

Criteria for the diagnosis of primary melanoma include absence of other primary site melanoma and no history of removal of melanoma or atypical melanocytic lesions from skin, retina, anal canal or occasionally at other locations like esophagus penis or vagina (1, 2).

To determine whether the small intestinal malignancy is a primary lesion Sacks et al. (14) established three diagnostic criteria : i) single lesion, ii) other organs free of primary lesions and absence of enlargement of draining lymph nodes and iii) survival time over (>) one year after the diagnosis (15).

In another study Blecker et al. (16) propose the following criteria for the diagnosis of primary melanoma of the small bowel: i) presence of a solitary mucosal lesion in the intestinal epithelium, ii) absence of melanoma or atypical melanocytic lesions of the skin and iii) presence of intramucosal melanocytic lesions in the overlying or adjacent intestinal epithelium.

Histological criteria for primary melanoma highlight the proliferation of atypical junctional melanocytes and atypical melanocytic cells in the basal layer in the superficial epithelium. Other indications of primary lesions are the presence of lymphocytes infiltration surrounding tumor mass (3, 16).

Twenty four different cases of primary malignant melanoma have been reported in the literature (1, 2, 6, 17-36, 46) according to the criteria proposed by Sacks et al. but in some of these cases the follow-up is not according to these criteria for primary lesion. All the cases described in the literature show a wide range of patient's age with the highest prevalence above the age of 40 years.

The clinical presentation of the small bowel melanomas may be: pain (70%), intestinal obstruction, loss of weight, presence of abdominal palpable mass (10-20%), anemia (20-50%) from chronic blood loss (37). Kadakia et al. report anemia in 70% (38).

According to Reemst et al. less than 5% of the patients present with symptoms that are often non specific and late (39).

Surgical resection of malignant melanoma of the GI tract is the mainstay of treatment (40, 41). The prognosis of untreated melanoma is poor, 99% of the patients die within a year. Surgery should include excision of the gut with tumor-free margins and of mesentery to remove the regional lymph nodes (42).

Surgical resection allows the definite diagnosis and can prolong symptom-free survival. Primary intestinal melanomas have an aggressive course and worse prognosis (43). There is no effective immunotherapy and chemotherapy using cisplatin, dacarbazine and tamoxifen. Response rates are extremely low (10%), Interferon A, interleukin 2, and high dose of chemotherapy and laser protocoagulation may be useful in patients with bleeding metastasis. Systemic adjuvant therapy has a limited role (17-19). A synopsis of all case reports shows a prevalence for males and adults of all ages.

There are different theories for the origin of malignant melanomas in the small bowel. Although small intestine contains no melanocytes, these cells have been found in the alimentary tract occasionally. That supports the theory of primary lesion in these sites. A second theory suggests that malignant melanoma develops from intestinal Schwann cells but this theory is not confirmed. A third theory proposes that malignant melanomas originate from neural crest. These potential cells migrate via the umbilical-mesenteric canal and later differentiate into specialized cells, i.e. amine precursors uptake and decarboxylation (APUD) cells, which undergo neoplastic transformation.

According to this theory (APUD theory) ileum that represents the distal end of the umbilical mesenteric canal, should be the commonest site of primary malignant melanoma of the small intestine (44, 45).

In our case there was no history of primary cutaneous or regressive primary cutaneous melanoma or other site primary lesion. It was a single lesion and a close 11 months follow-up has not revealed any other primary site. Therefore we described It as a primary melanoma of small bowel.

Conclusions

Primary malignant melanomas of the small intestine are extremely rare neoplasms. They are solitary, intraluminal masses with an aggressive clinical course and poor prognosis. The fatal outcome is observed in a high percentage of cases. Surgery is the treatment of choice.

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