The presence of metastatic melanoma in the small intestine is associated with a poor prognosis: A report of two cases

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ABSTRACT

Introduction: Malignant melanoma is a neoplasm arising from the melanocyte cells of the skin. Of all cancers diagnosed in Poland in 2009, it was the twelfth most-common cancer in men and the fourteenth in women. However, this type of cancer is characterized by a quick development of metastases and a high mortality rate. Melanoma usually metastasizes to the lymph nodes, then infiltrates the lungs, brain, liver, bones, and gastrointestinal tract, for example, the small intestine.

Purpose: To present two cases of metastatic melanoma with a poor prognosis involving the small intestine.

Case presentation: In the first case, a 50-year-old male patient with abdominal pain and distension was admitted to hospital and qualified for surgical treatment. The second case, a 45-year-old male patient, presented with severe abdominal pain and sudden obstruction of the gastrointestinal tract. Both patients had previous medical histories of malignant melanoma found on the skin of the subscapular area. The pathomorphological reports confirmed metastatic melanoma of the small bowel. The patients underwent partial resection of the small bowel with end-to-end anastomosis.

Conclusion: Patients with metastatic melanoma originating from the small intestine had a poor prognosis. Due to the difficult diagnostic control of melanoma that develops on the skin and insufficient therapy for advanced stage cancer, we should develop early diagnostics for cutaneous melanoma through cancer prevention education in the population.

Key words: metastatic melanoma, small intestine, gastrointestinal tract

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INTRODUCTION

In Poland, the incidence of malignant melanoma of the skin continues to grow and stands at about 2% of all patients diagnosed with cancer now. Although it takes 12th place in men and 14 in women of all malignant tumors that demonstrates a high mortality rate [1]. Melanoma is a malignant tumor of cells derived from melanocytes. Physiologically, normal pigmented cells are found mainly in the skin, much less choroid layer of the eye, oral cavity, larynx, vagina and anus [2]. This tumor is most common in the skin and is associated with exposure to environmental factors (UV light, chemicals, sunburn). In addition to risk factors include the more widely reported genetic factors [3,4]. Melanoma often metastasizes to lymph nodes, followed by the lungs, brain, liver, bones, and organs of the gastrointestinal tract. It is observed that melanoma is the most frequent metastatic cancer of the gastrointestinal tract and metastases to liver in 68%, the small intestine in 58%, colon in 22% and stomach in 20% [5]. Only 0.9 % of patients with melanoma tumors of the digestive system are diagnosed before patient's death but much larger percentage of them (about 50-60%) is confirmed at autopsy [6,7]. The median survival of patients with metastatic melanoma to the gastrointestinal tract is 4-6 months [7].

In this article, we presented two cases of metastatic melanoma to the small intestine of patients diagnosed during their lifetime.

Case 1

A 50-year-old man patient was admitted to the Department of Gastroenterology, University Hospital in Bialystok in May 2011 due to abdominal pain and distension. At the beginning patient complain of crampy pain, then it becomes permanently for several weeks. On physical examination revealed a palpable pathological mass in the middle of the abdomen with significant tenderness. Routine hematological results and imaging data (X-ray, ultrasound, CT) showed an anemia and a tumor originating probably in the small intestine. No abnormalities of the abdominal cavity and chest were found. His past medical history was known that patient had a lesion removed two years ago and diagnosed with malignant melanoma located on the subscapular area. After the diagnosis, patient has been under regular control of imaging in Oncology Clinic (chest X-ray, ultrasound of abdominal cavity). Patient was qualified for surgery after medical consultation. Intraoperative examination revealed a distended the loops of small intestine filled with bloody fluid; a tumor was situated in a half distance between the ligament of Treitz and Bauhin. The enlarged mesenteric lymph nodes (about 6cm in size) were detected. The metastatic nodular findings were noted in liver too. The partial resection of the small intestine with end-to-end anastomosis was performed.

Macroscopically, it was showed a exophytic, ulcerated tumor of 9x5cm in size causing the obstruction of small bowel. The tumor invaded the full thickness of the bowel wall and adipose tissue around intestine. The neoplasm was a solid mass that infiltrated the full thickness of the bowel wall to subserosa. The microscopic examination of H&E staining demonstrated a tumor composed of neoplastic epithelioid cells with abundant eosinophilic cytoplasm, sometimes binucleated. Nuclei of neoplastic melanoblasts are hyperchromatic, large, with lumpy chromatin and one or more prominent nucleoli. Single nucleus is localized on peripheral areas of cell while they are loosely arranged in binucleated cells not pressing each other. Mitotic-division 22 figures were found in 10 fields at high magnification. A very scant stroma with inflammatory infiltration consisted of lymphocytes and plasmacytes was observed. Immunohistochemically, the tumor cells were positive for S100, HMB45, Melan A and Ki-67 (present in 60% of tumor cells) that let us to confirm an amelanotic malignant melanoma. To exclude the different cells origin of this tumor, other immunohistochemical staining were done: pancytokeratin (-), chromogranin A (-), SMA (-), CD117 (-) CD45 (-) Neuron-specific enolase (-) (Fig 1a. Fig 1b). The eight lymph nodes removed showed malignant metastasis.

Case 2

A 45-year-old man patient, whom primary melanoma of was removed from the his left subscapular area two years earlier, was admitted to the 1st General Surgery and Endocrinology, University Hospital in Bialystok in 2011 because of severe pains located in the abdominal cavity and sudden obstruction of the gastrointestinal tract. Due to the rapid course of the disease and symptoms of the incomplete obstruction of the gastrointestinal tract the patient was qualified for surgery which revealed a tumor localized approximately 1 meter from the ligament of Bauchin, the second mass was situated 20 cm from the ligament of Treitz, causing ileal intussusception. No macroscopic signs of metastases were observed in any other organ in the abdominal cavity during a surgical operation. The patient underwent a double jejenum resection with end-to-end anastomosis. After 3 months, he was readmitted with abdominal pain and generalized weakness. The routine laboratory data and imaging were performed and confirmed a multiple cancer metastases. Only palliative therapy with good effects was used.

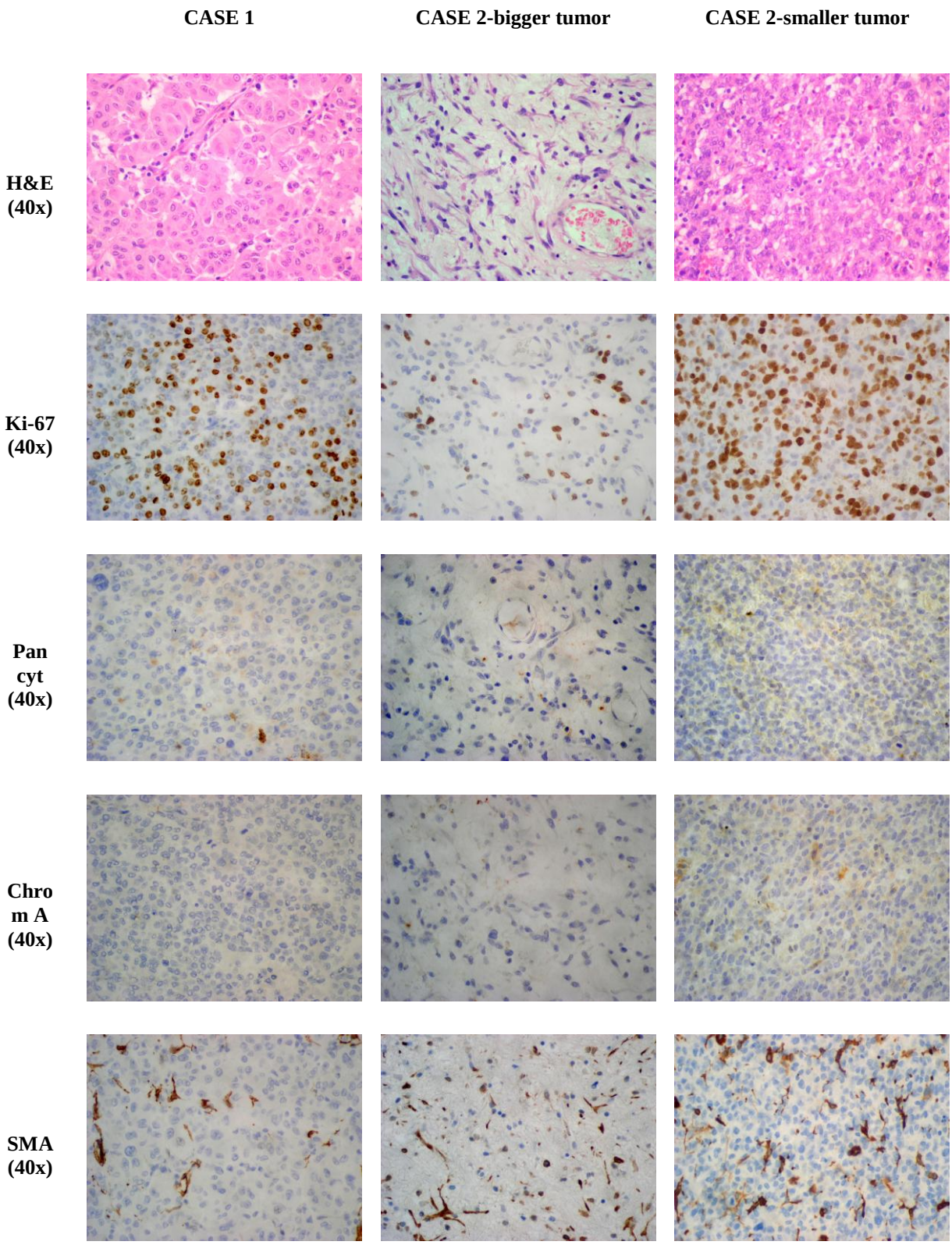

Figure 1a. The microscopic examination of cases with melanoma in the small intestine. Immunohistochemical staining.

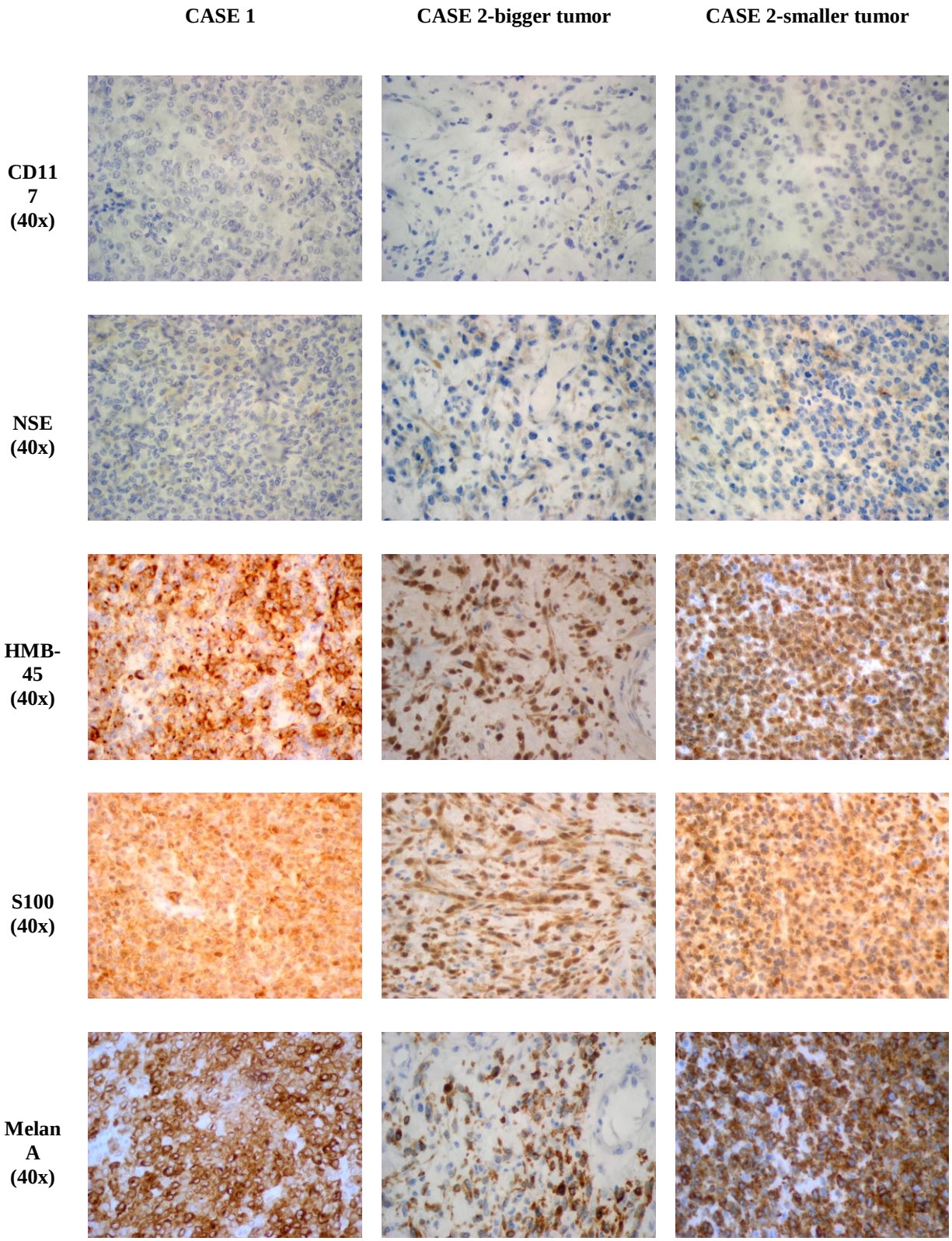

Figure 1b. The microscopic examination of cases with melanoma in the small intestine. Immunohistochemical staining.

Figure 2. Surgical specimen of the two polypoid masses located in the small intestine.

The resected specimen revealed the presence of two polypoid structures in the wall of the small intestine up to 1.5 cm and 3.5 cm in diameter (Fig 2). Microscopically, examination of the two masses demonstrated a various neoplasm morphology. Histological examination of the smaller tumor showed small, pleomorphic, individually presented cancer cells. Neoplastic cells have irregularly round in shape, with abundant cytoplasm and hyperchromatic nucleus with lumpy chromatin, occasionally visible nucleoli and numerous mitotic divisions (14 figures in 10 fields at 400x magnification). The tumor had a scant connective tissue stroma with the infiltration involved mainly lymphocytes and eosinophils. The larger tumor demonstrated a significant increased tumor cell polymorphism with a predominance of fusiform cells present in a scant stroma. Spindle cells were arranged in strands in a sarcomatoid appearance. Neoplastic cancer cells did not contain melanin pigment. A large necrotic areas were found too.

Both tumors showed a increased vascular proliferation. Immunohistochemical studies were performed: desmin (-), pancytokeratin (-), chromogranin A (-), SMA (-), CD117 (-), CD34 (-), neuron-specific enolase (-), Ki-67 (present in 60% of tumor cells). Strong positive reaction for S100, Melan A and HMB-45 were observed (Fig 1a. Fig 1b). The pathology report confirmed the amelanotic malignant melanoma of the small intestine.

DISCUSSION

The two presented cases of malignant melanoma to the small intestine point out uncharacteristic clinical symptoms. A suspicion of gastrointestinal metastases was established after the medical history of patients. The primary melanoma lesion in our patient located in the upper part of the back (subscapular area) increases the risk of metastasis. The upper part of the chest, arms, neck, hairy part of the head or foot area locations are associated with higher melanoma metastasis too [8]. Therefore, it is important to obtain a detailed patient medical history which may suggest a suspicion of metastatic melanoma. Both patients were under constant control in the Oncology Clinic (abdominal ultrasound, chest X-ray). Imagining techniques have shown no evidence of any suspicion lesions. Only computed tomography of the abdomen exposed a large tumor mass of the small intestine in first case. The literature has also described the usefulness of computer tomography in the diagnosis of melanoma metastasis to the small intestine but only in the detection of large lesions [9]. The sensitivity of CT scans estimated at about 66% [10]. This is confirmed by the fact that the diagnosis of melanoma metastases located in the small intestine in a high percentage of patients are diagnosed postmortem [5].

Bender et al. [11] varied the four different types of metastatic melanoma of the small intestine: cavitary, inflitrating, exoenteric and polypoid. According to these criteria, the first case we qualified for the infiltrating type and the second one is defined as a polypoid type. The prognosis for these types of tumors is still unknown. In the first case, tumor is ulcerated in the both macro-and microscopic examinations while ulcers of the second lesion were seen only microscopically. Ulceration of the primary melanoma is associated with a greater biological aggressiveness of the tumor and a tendency to metastasize [12]. Probably, this theory also relates to metastasis development that worsen the prognosis of our patients. Histopathological examination of the second specimen demonstrated a more aggressive type of cancer. It is supported by the significant vessel proliferation which may lead to spread of cancer intensively. This is established by the fact that a patient with short postoperative period (3 months) was diagnosed with an extensive spread of tumor. Sachs et al. [13] and Lagoudianakis et al. [14] had previously described the association between poor prognosis and metastatic melanoma of the small intestine due to the histology of mucosa that is rich in lymphatic and blood vessels. Additionally, both cases showed numerous mitotic figures and the amelanotic type that have a worse prognosis [15]. The regional lymph node involvement of the small intestine was observed only in first case that confirmed more advanced neoplastic process.

In conclusion, the presence of metastatic melanoma involving the small bowel is a poor prognostic factor. Due to the complicated diagnostic control of cutaneous melanoma and insufficient treatment of patients with advanced stages, we need to develop the early detection of malignant melanoma by the cancer prevention and education of the population.

Conflicts of interest: none declared.

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