"THE GREAT MIMICKER"

A Rare Case of Primary Rectal Malignant Melanoma1

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Introduction

Rectal melanoma is a very rare and highly malignant disease which constitutes only 0.4 to 1.6 % of all melanomas. The incidence has been reported to be 0.4%–3.0% of all malignant melanomas and 0.1%–4.6% of all anorectal malignant tumors. Malignant melanoma of the rectum has a very poor prognosis[6]. Due to its aggressive nature, an early diagnosis and prompt treatment are required.

This condition was first described by Moore in 1857 [6]. There are no available local published data on primary rectal melanoma in the Philippines.

Case Presentation

We are presented with a case of a 78-year old Filipino female from Cebu City having a 4-month history of intermittent blood-streaked loose stools with anal pain upon defecation associated with pallor, easy fatigability and shortness of breath. She had significant unintentional weight loss of about 25 percent in 2 months duration.1 week prior to her recent admission, she had persistence of hematochezia. Blood count showed severe anemia of 6.9 mg/dL and hematocrit of 22.12 mg/dL thus, she was admitted and transfused with 3 units of packed RBC. Signs and symptoms of anemia eventually resolved post transfusion.

Patient had no known comorbidities. No previous surgeries. She was previously treated for 6 months of anti-TB therapy. She had family history of cancer; her older brother died of an unrecalled type of colon cancer.No food and drug allergies. She is non-smoker and non-alcoholic.

Patient was seen at the emergency room conscious and coherent with stable vital signs. She was underweight with a BMI of 16 kg/$m^{2.}$ On physical examination, there were no skin lesions nor discolorations noted. She had pale palpebral conjunctivae and anicteric sclerae. Cardiac and chest findings were unremarkable. Abdominal examination was essentially normal. Inguinal lymph nodes were not palpable. On rectal examination, there was a firm mass of about 2 cm in size at 2 cm from anal verge which bled to touch. Both extremities were grossly normal (Figure 5).

Diagnosis

The only abnormality in routine hematologic examination was anemia. Colonoscopy was done on her 1st hospital day which showed a firm friable dark brown approximately 2 cm exophytic mass at the lower rectum (Figure1). The rest of the colon was unremarkable. Biopsy was done on the mass which showed large vesicular nuclei, prominent nucleoli and moderate cytoplasm with many cells showing cytoplasmic melanin and clumps of extracellular melanin pigment (Figure 2).Such microscopic description was consistent with malignant melanoma. The specimen was again reviewed in another institution in which the same histopathologic diagnosis was confirmed. CEA was normal at 0.50 ng/mL. Computed tomography of abdomen revealed an enhancing, intraluminal rectal mass approximately 2 x 2 cm in the left side of the colon with concomitant wall thickening, minimal calcifications within, and narrowing of the involved segment (Figure 3). No pararectal lymph nodes were noted. The bony pelvis was unremarkable. The liver was

normal. Computed tomography of the chest was done as part of the metastatic work-up and showed fibrosis with cicatricial atelectasis at right lung apex with right apical pleural thickening from the previous pulmonary tuberculosis (Figure 4).

Treatment

Patient was counseled regarding the need for surgery. On her 6th hospital day, she underwent abdominoperineal resection with partial posterior vaginectomy and left superficial inguinal lymph node dissection. Specimen showed a poorly-circumscribed firm dark grey to black exophytic mass measuring 65 x 35 mm. The external surface is covered by fat. Cut surface of the mass is solid with suspicious extension into the mesolectal fat (Figure 6-9). Histopathologic findings of atypical melanocytes of round, ovoid to spindled appearance exhibiting moderately enlarged pleomorphic vesicular nuclei, and scant to moderate pale eosinophilic cytoplasm . In several areas, cells exhibit cytoplasmic melanin consistent with malignant melanoma with metastasis to 3 out of 5 superficial inguinal lymph nodes. Final histopathologic diagnosis of Malignant melanoma; pT2N1bMx; proximal and distal margins of resection free of tumor (Figure 10-13).Based on AJCC criteria for colorectal cancer, our patient is currently on Stage IIIA. She was discharged improved after 14 days and chemotherapy was then discussed and advised.

Diagnostics and Histopathology

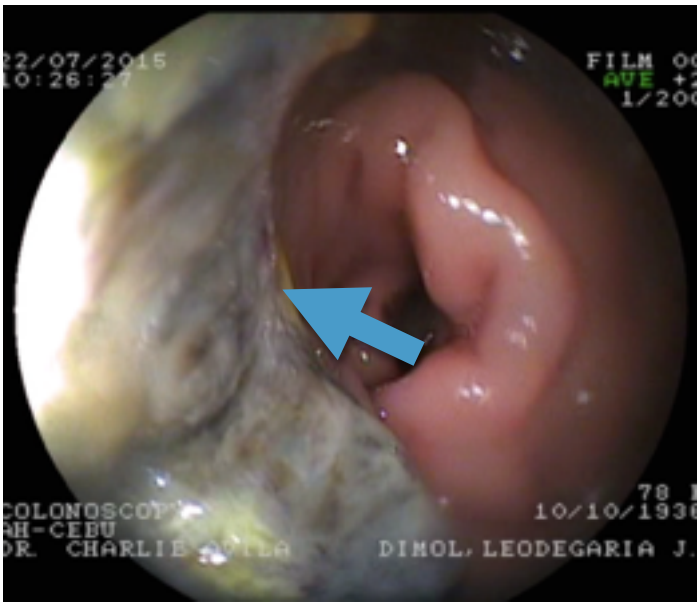


Figure 1a

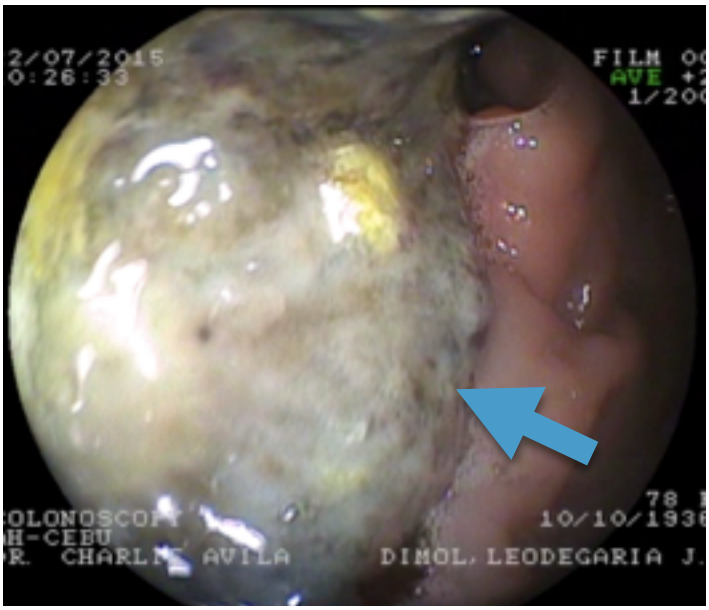


Figure 1b

FIGURE 1a and 1b. Endoscopic image showing firm and friable mass at the left side of the colon just above the dentate line measuring 2 cm.

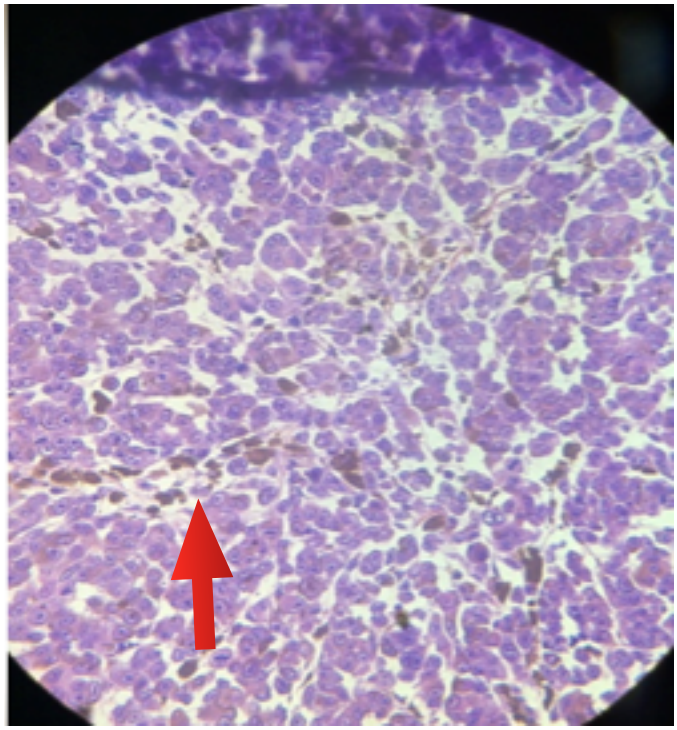


FIGURE 2. Tissue from rectal mass composed of sheets of anaplastic cells having large vesicular nuclei, prominent nucleoli and moderate cytoplasm. Many cells show cytoplasmic melanin. Clumps of extracellular melanin pigment are also noted.

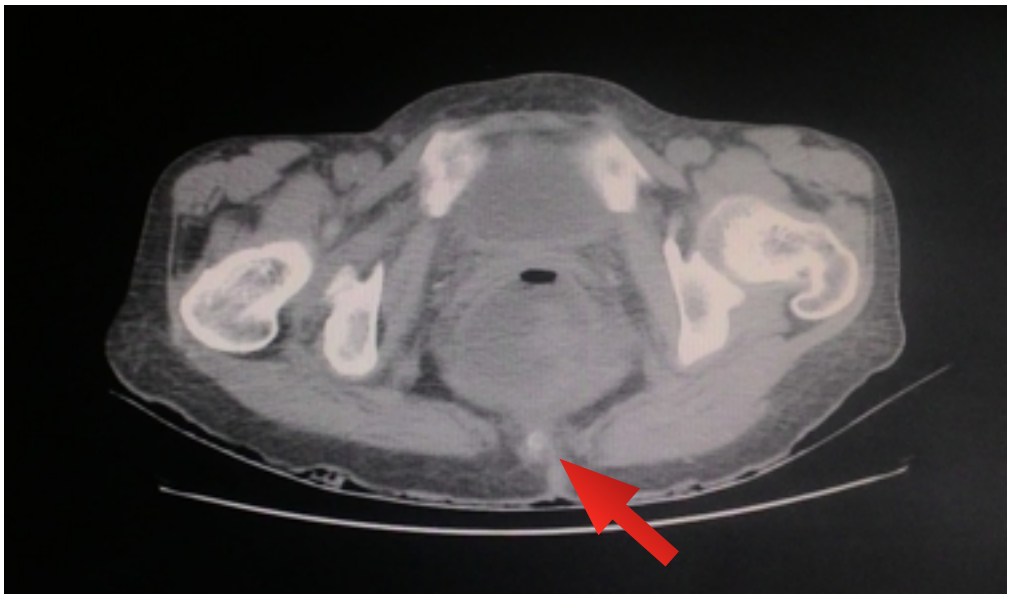


Figure 3a

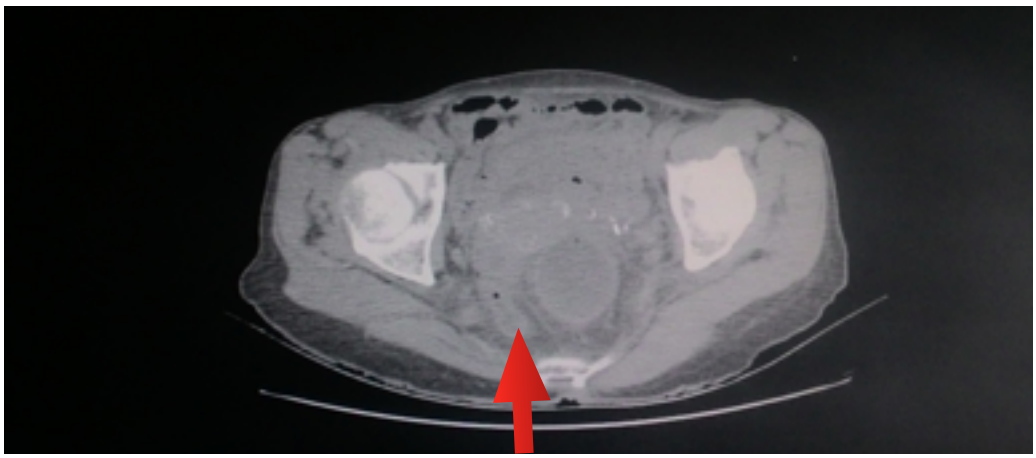


Figure 3b

FIGURE 3a and b. Rectal mass on abdomen CT scan showing enhancing exophytic intraluminal rectal mass in the left side measuring about 2cm x 2 cm with wall thickening and minimal calcifications within. Resultant narrowing of the involved rectal segment

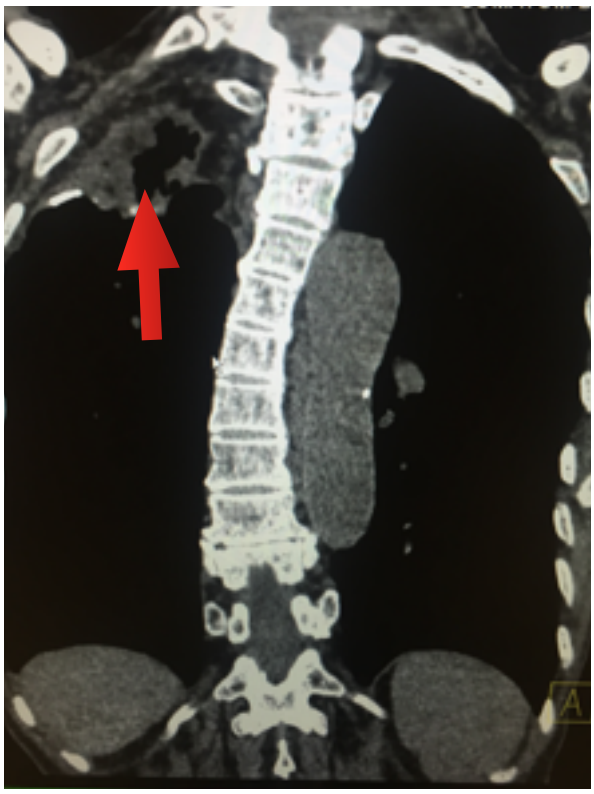


Figure 4a

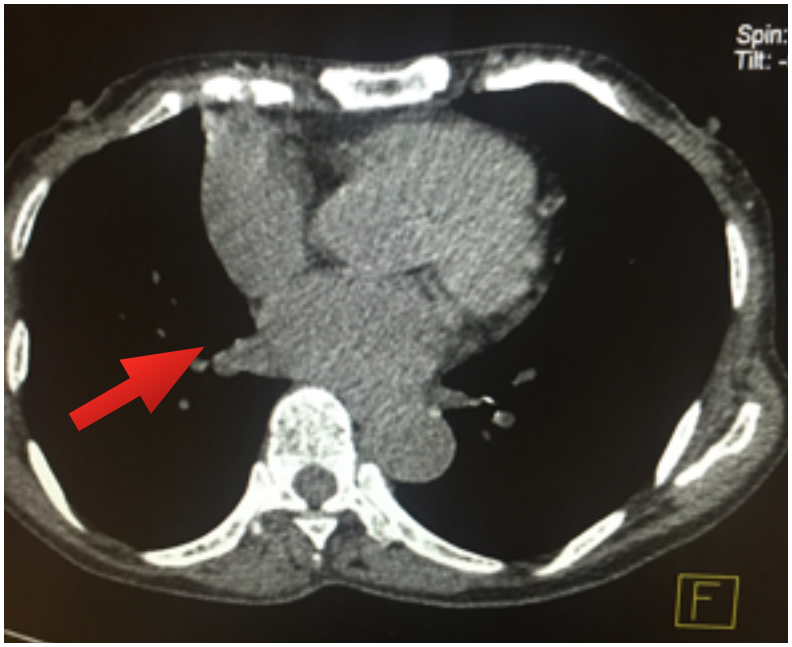


Figure 4b

FIGURE 4. Chest CT-scan with contrast showing fibrosis with cicatricial atelectasis at right lung apex with right apical pleural thickening.

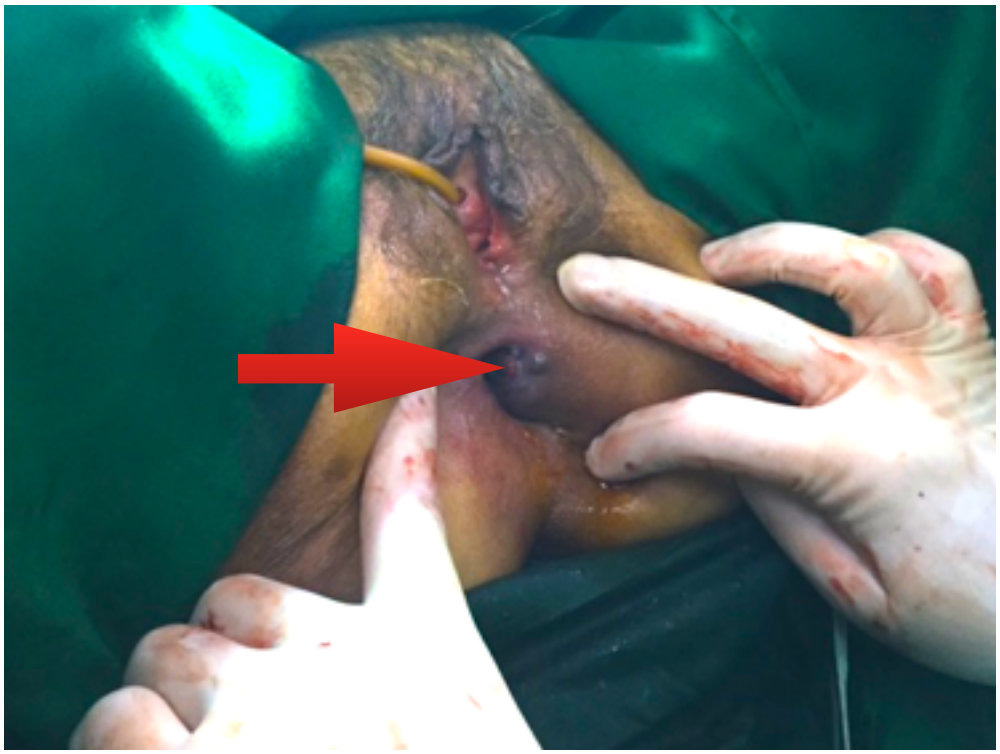


FIGURE 5. Rectal examination prior to starting the abdominoperineal resection showing the bleeding rectal mass.

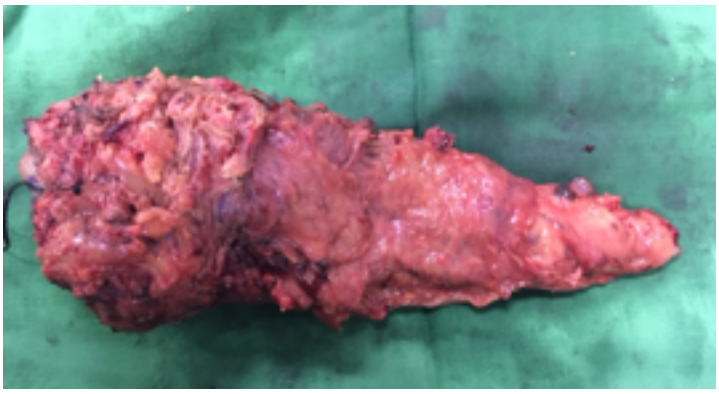


Figure 6a

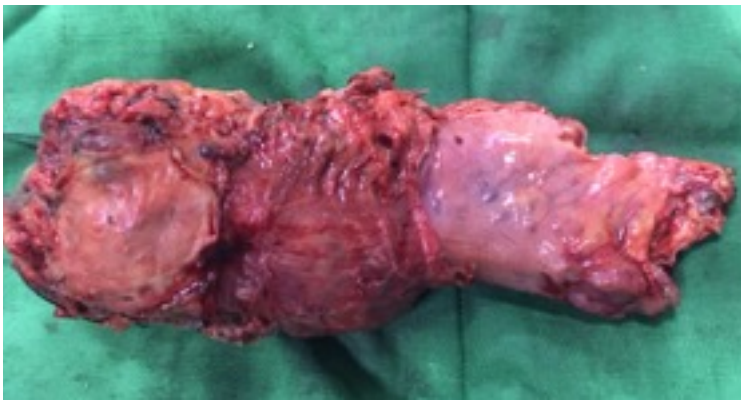


Figure 6b

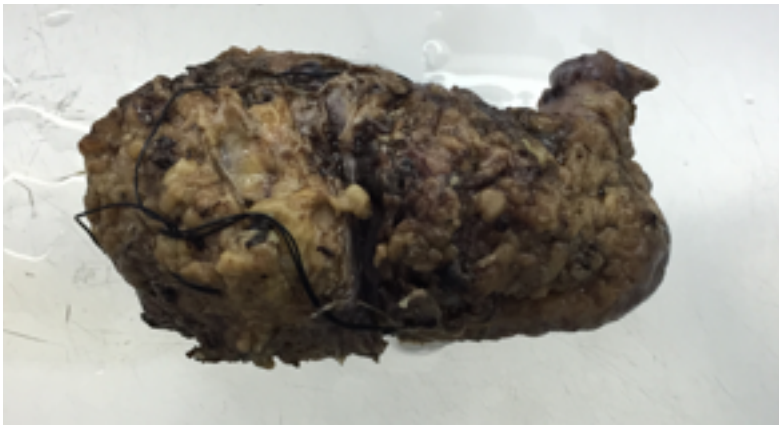


Figure 6c

FIGURE 6a-c. Abdominoperineal resection specimen consisting of anus, rectum and part of sigmoid colon weighing 150 grams.

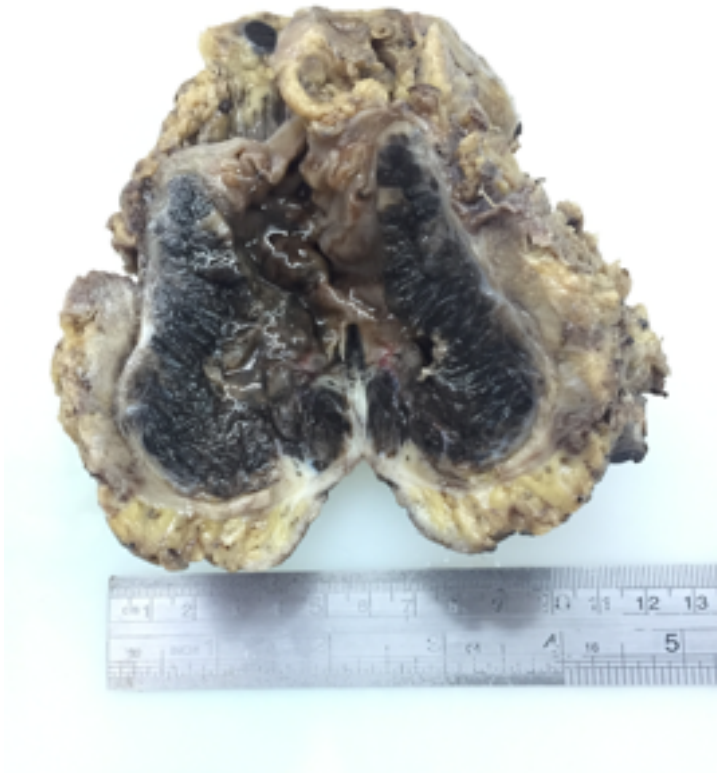


Figure 7a

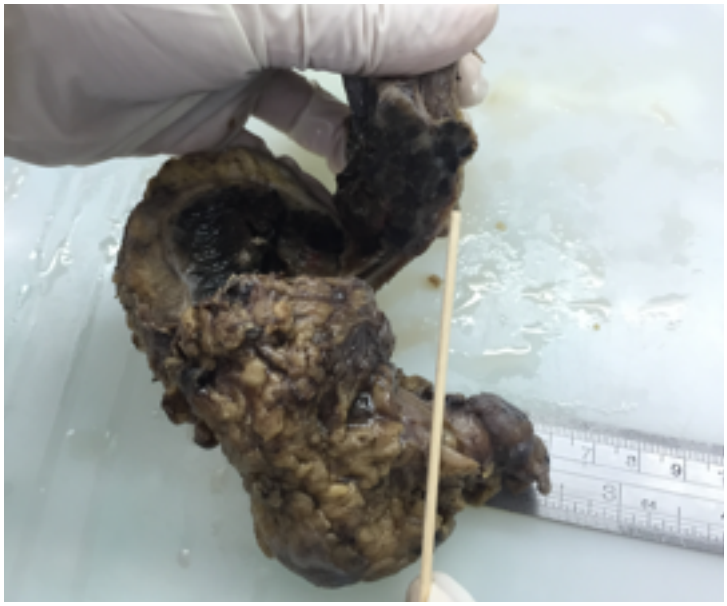
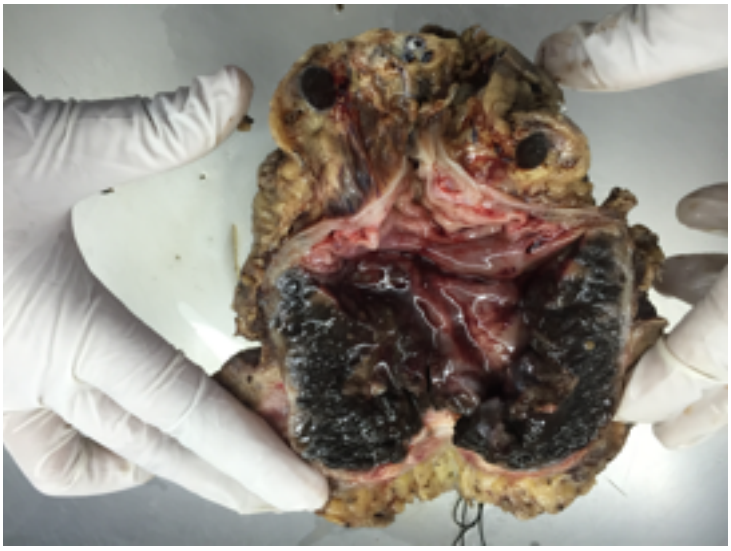


Figure 7b

FIGURE 7a-b. Anus, rectum and part of sigmoid colon measuring 120 x 70 x 45 mm wherein there external surface is completely covered by fat.



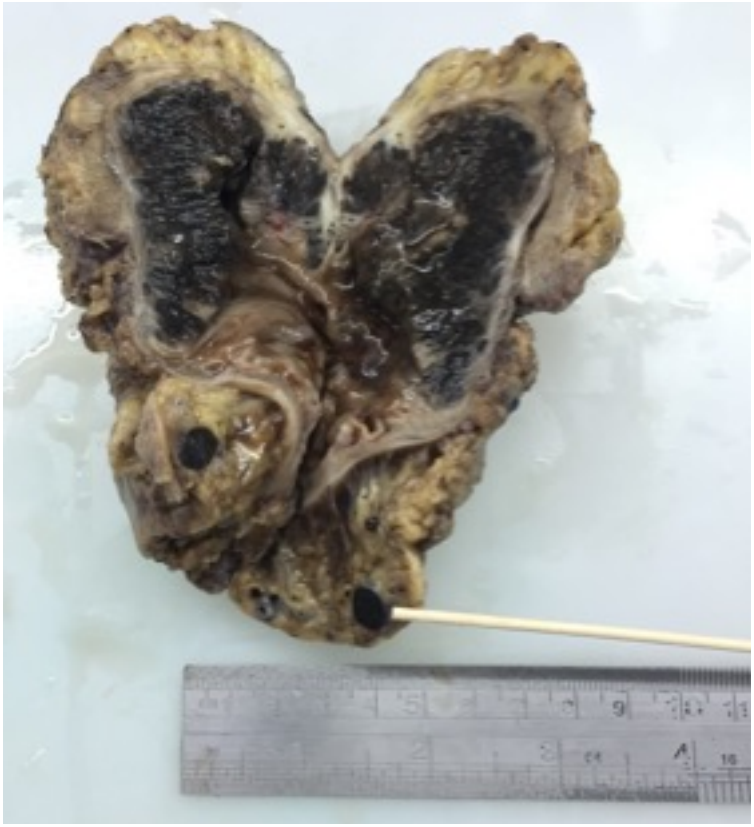


Figure 8b

FIGURE 8a-b. Anus, rectum and part of sigmoid colon showing a poorly circumscribed firm, dark grey to black exophytic mass measuring 65 x 35 mm . FIGURE 8b. Cut surface is solid with suspicious extension into mesolectal fat. It also shows black nodule measuring 10 mm in diameter.

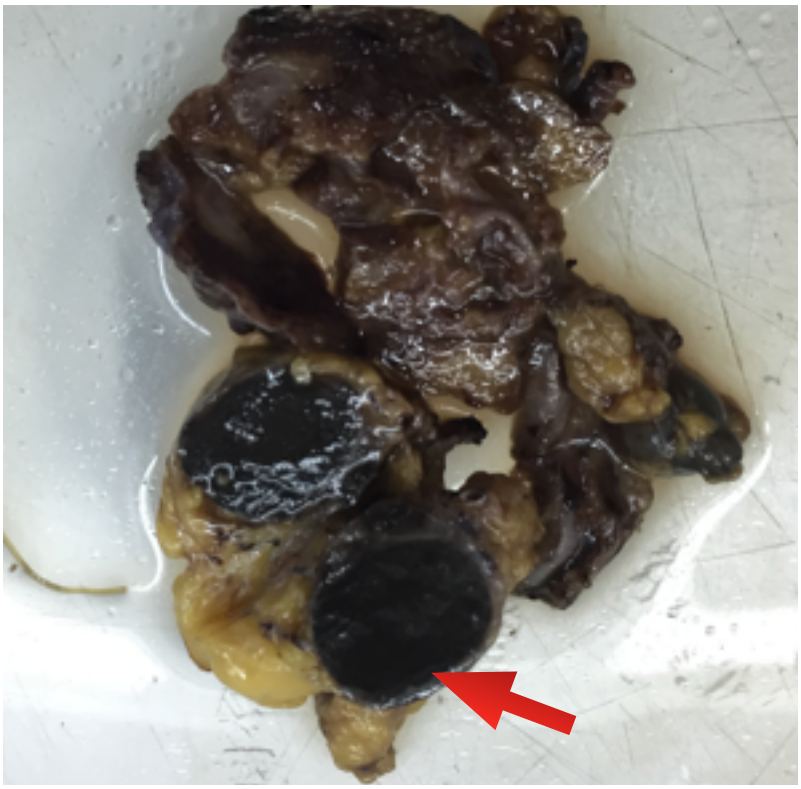


FIGURE 9: Superfical inguinal lymph nodes showing soft to firm yellow to black fibrofatty tissues with an aggregate diameter of 60 mm

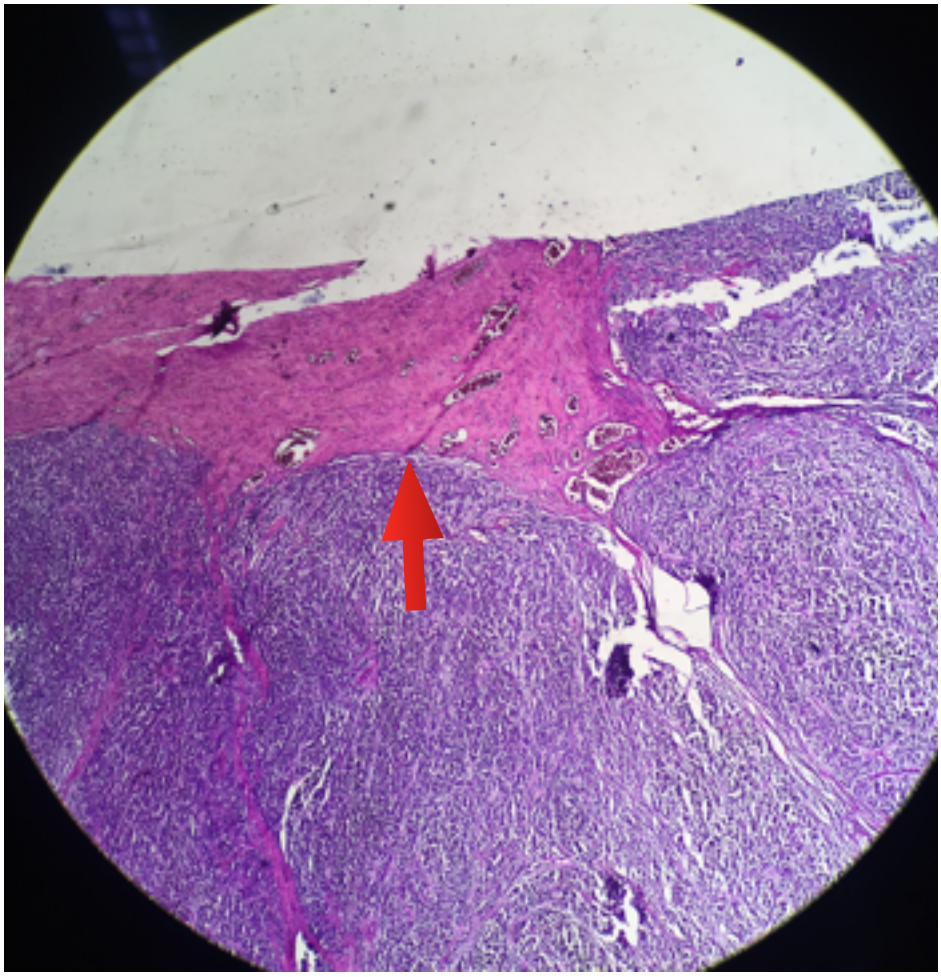


FIGURE 10. Histologic specimen of rectal tissue showing atypical melanocytes of round, ovoid to spindled appearance exhibiting moderately enlarged pleomorphic vesicular nuclei, and scant to moderate pale eosinophilic cytoplasm . In several areas, cells exhibit cytoplasmic melanin.

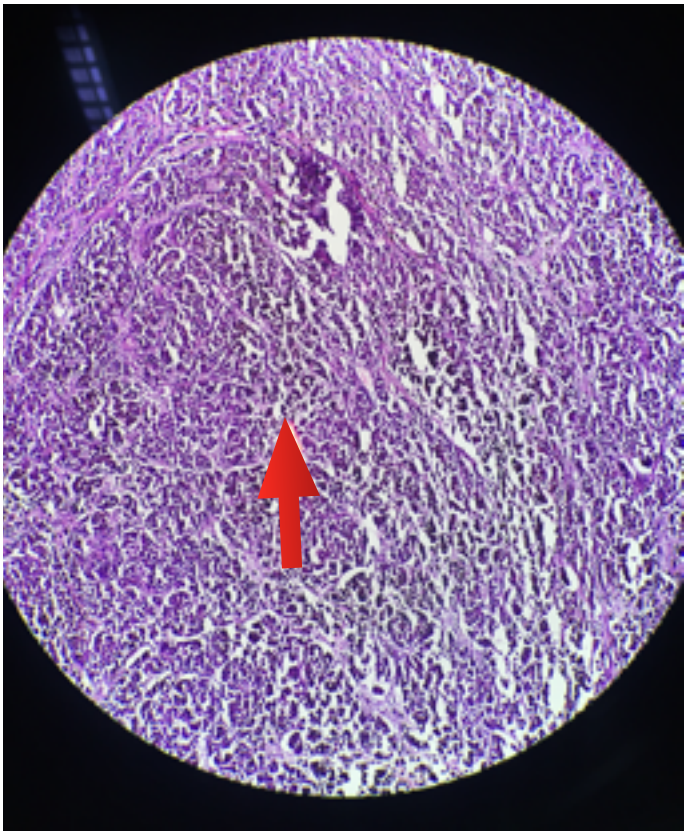


Figure 11a

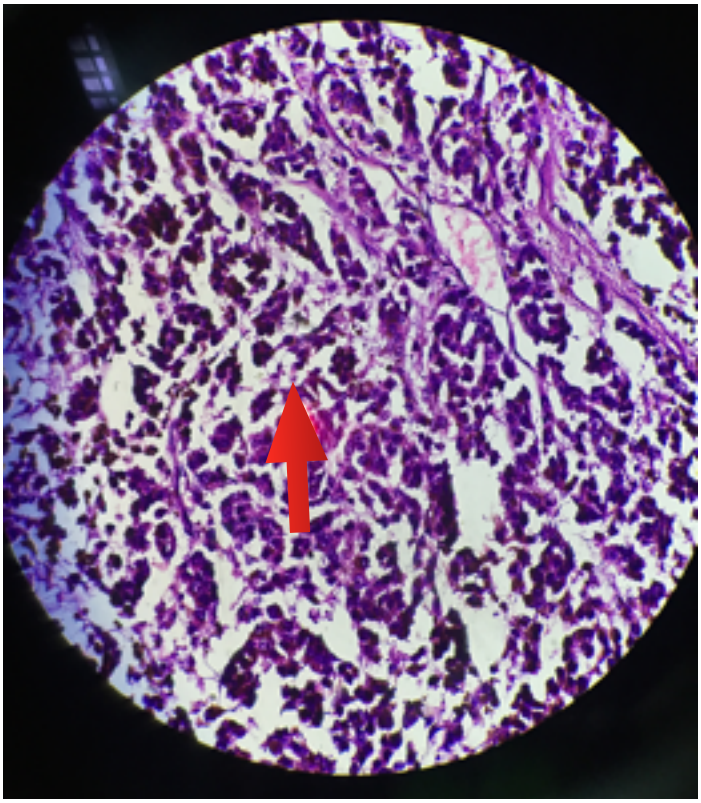


Figure 11b

FIGURE 11a and b. Superficial inguinal lymph node biopsy showing tumor involvement

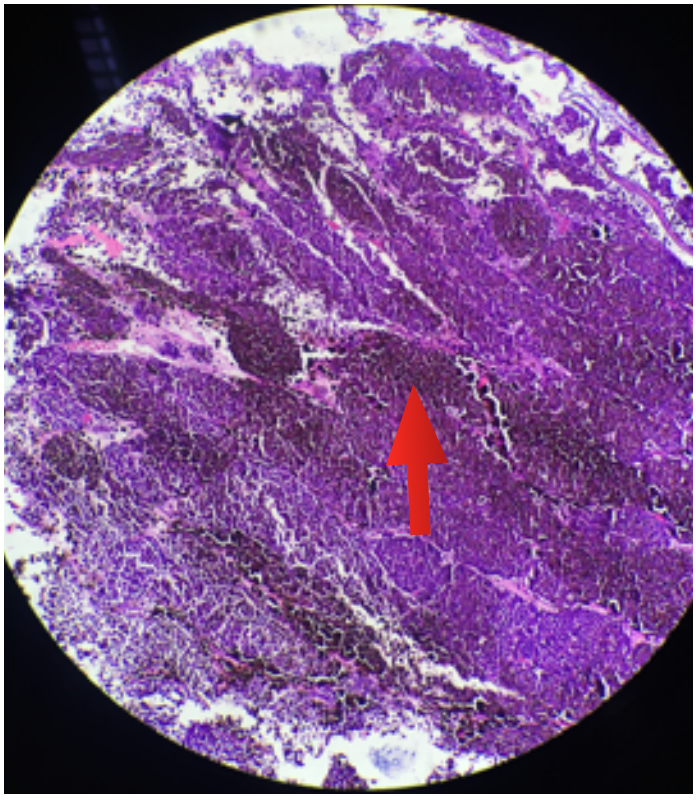


Figure 12a

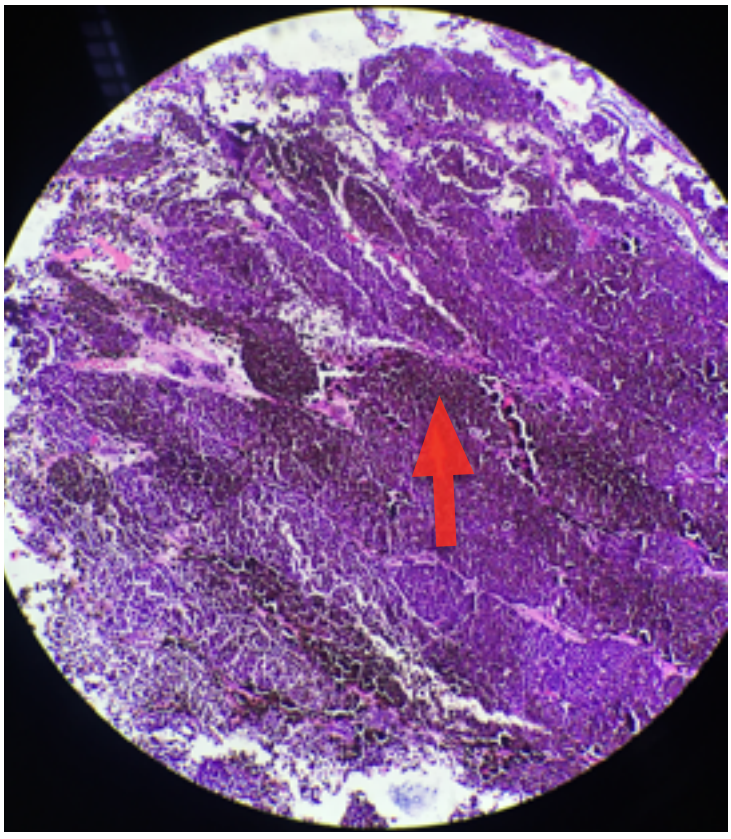


Figure 12b

FIGURE 12a and b. Superficial inguinal lymph node biopsy showing tumor involvement

Discussion

Background

Primary rectal melanoma is defined as any melanoma that occurs in the rectum above the dentate line. The incidence rate has been reported to be 0.1%-4.6% of all anorectal malignant neoplasia and 0.4%-3% of all melanomas. It usually appears in elderly patients with clear female predominance, varying from 54%-76%[2].

a. Family history

The only relevant and pertinent family history was the colon cancer of the patient's older brother. However, as to the type of colon malignancy, it was unrecalled.

A positive family history is an established risk factor for developing melanomas. In population based studies, 1 - 13% of cases have reported melanoma in at least one first-degree relative[1].

b. Gastrointestinal involvement

In our patient, the malignant melanoma is located at the rectum which constitutes only 2 percent of all gastrointestinal melanomas.

According to Tanju et al, the areas of the GI tract that can be involved in melanoma and their frequencies are as follows: small bowel (58-71%), stomach (20-27%), colon (22%), esophagus (5%), and rectum (2%)[3].

Pathogenesis of primary melanoma of the colon

a. Relation to neural crest cells

Neural crest cells are found extensively in the intestines, and are believed to have developed from caudal branchial arches during embryogenesis. In vitro, the bowel has been shown to favor the differentiation of these cells into mature melanocytes. However, this effect has not been successfully replicated in vivo which explains the absence of mature melanocytes in the intestines[4].

Precursor cells of melanocytes have been identified in human skin, but these cells have been minimally characterized. It has been suggested that at least two precursor stages of melanocytes, early and intermediate, exist in the skin. Functional maturation of melanocytes, i.e., the process by which cells express all the specific properties characteristic of this cell type, may occur through these preliminary defined stages. Cells of each maturation form may transform to either a nevus or a malignant melanoma. Hence, it is no surprise that these tumors are predominantly found in the skin. This also explains why they rarely arise in the colon[17].

b. Model of tumor regression

The presence of potentially metastatic melanomas in the colon with unknown primaries can be explained by the model of tumor regression. A variation in immunologic status, such as infection or pregnancy, can be associated with spontaneous regression of melanomas in their primary sites. In a study of 437 cutaneous melanoma cases, 12.3% of all tumors showed at least partial regression. Histologic findings seen in cases of tumor regression include dermal lymphocytic infiltration with melanophages, vascular proliferation, absence of malignant melanoma cells and reparative fibrosis[4].

c. Ectodermal differentiation

The probable genesis of such tumors involves a concept of “ectodermal differentiation” - that ectodermal cells are capable of differentiation into multiple cell lines and may variably migrate into the colon during the embryologic stages to develop into melanocytes. The omphalomesenteric duct may provide one potential route for this transfer of cells. Such a process may also drive the melanoblastic cells from the anal region into the distal colon. Finally, primitive stem cells localized within the gut wall may also give rise to heterotropic melanocytes in the colon and these in turn can give rise to the primary melanoma of the colon. However, despite these theories, the true pathological basis for the occurrence of melanocytes within the colon remains speculative[4].

History and Physical Exam

A thorough history and comprehensive physical examination are primary tools in this regard. Oculocutaneous melanomas, being the most common primary melanomas, should be excluded first. Our patient did not have skin lesions consistent with cutaneous melanomas.

An examination of all the major lymph node groups should be undertaken as the presence of regional lymphadenopathy in a particular area may give a clue to the site of the primary melanoma if anatomic knowledge of the usual routes of lymphatic drainage is applied to the clinical scenario[4]. Our patient, however, did not have any lymphadenopathies on physical examination.

As mentioned, during rectal exam, there was a note of 2 cm mass at 2 cm from anal verge with fresh blood on examining finger. According to Khalid et al, abdominal examinations (including rectal examination +/- proctoscopy) should be performed in

patients, especially if they have inguinal lymphadenopathy. Otolaryngologic and ophthamologic examinations should be done as well; however the recommendations regarding the performance of these are not uniformly described. In addition to the complete assessment of the skin, any previous skin biopsies should be reviewed [4].

Highlighting the salient features based on the patient's history, she presented with hematochezia and significant weight loss. Upon doing the rectal exam, there was a note of bleeding rectal mass. Complete assessment of the skin was done which was unremarkable. No previous skin biopsies were taken, She had an elder brother diagnosed with colon cancer however, exact histopathologic diagnosis was unrecalled.

Laboratory and Radiologic Investigations

Tests should include basic hematologic parameters, chest x-ray and abdomen ultrasound. Bone scan, MRI or CT scan of the head and either whole body CT may also be done. However, such investigation should still be based on the presentation profile of the patient since practice guidelines for colonic malignant melanoma are still not established [13].

Clinical Parameters

a. Age

The median age at presentation is 55 years, although the range is wide, 29 to 91 years old[9]. In another study, the average age of patients on presentation was calculated to be 60.4 years[4]. In our case, the patient is 78 years old which is within range in relation to previous case report of Tchernev et al.

b. Gender

Our patient is a female. Such gender is also predominant in studies done by Tchernev and Khalid. According to them. there may be a female predominance but individual series are too small to make definitive conclusions, and most publications do not suggest significant gender differences[9].

c. Sites of Involvement

Right colon and cecum were found to be the most common sites for the occurrence of primary colonic melanomas. This was slightly different from the data on metastatic colonic melanomas, where ascending colon and descending colon were reported as the predominant sites involved[4]. However, our patient presented with rectal melanoma which is a very rare site for mucosal melanomas which only account for less than 2 percent of colonic melanomas.

d. Signs and symptoms

In one case series by Kim et al, the most common symptom at presentation was defecation difficulty (63%), followed by rectal bleeding (50%), constipation (38%), decreased stool caliber (25%), weight loss (25%), and palpable inguinal mass (13%)[8]. However, in a study by Barbus et al, it was stated that rectal bleeding is the most common presenting symptom in 80 to 90 percent of cases[1]. Our patient primarily presented with rectal bleeding and weight loss which are also two of the most common manifestations.

Diagnosis

a. Colonoscopy

Our patient had colonoscopy and findings include a firm and friable mass at the left side just above the dentate line measuring about 2 cm. In a study by Kim, among eight patients, the tumors appeared as large polypoid or fungating masses involving the far distal rectum just above the dentate line. Surface ulceration was seen in three patients. One patient had multiple discrete satellite lesions adjacent to a large fungating mass[8].

CT Scanning and Image Evaluation

Our patient had abdomen CT-scan which showed enhancing, intraluminal rectal mass approximately 2 x 2 cm in the left side of the colon with concomitant wall thickening, minimal calcifications within, and narrowing of the involved segment. This CT-scan picture is also similar with other case reports. In one case series, melanomas usually appear as polypoid or fungating intraluminal masses (seven of 8 patients, 88%); bulky intraluminal fungating masses that focally expanded and obscured the rectal lumen without causing colonic obstruction in five (63%) patients. This finding was correlated with the findings of endoscopic or histopathologic examinations, which showed that the tumors were located in the distal rectum just above the dentate line, without evidence of a synchronous lesion in the anal epithelium. Perirectal infiltration commonly extended to the pelvic side wall or to the presacral space (grade 3, 63%). Among the five patients in which this occurred, three underwent abdominoperineal resection and were proved to have diseases with extension to perirectal adipose tissue; the other two patients did not undergo surgery. All eight patients had evidence of lymph node metastases on CT scans; this was also surgically and histopathologically proved in the six patients who underwent surgery. The metastatic lymphadenopathy most commonly involved the perirectal lymph nodes and was larger than 3 cm in diameter in three (38%) of the patients. When radiologists encounter a large

intraluminal rectal mass with prominent perirectal infiltration and perirectal and regional lymphadenopathy on CT scans, the major consideration in the differential diagnosis is adenocarcinoma, because it is the most common malignancy of the rectum. It is uncommon for adenocarcinoma of the rectum to appear as an expansile rectal mass without causing an obstruction, however, because this tumor tends to infiltrate, narrow the lumen rather than expand it, and cause obstruction[8].

c. Histopathology and Immunohistochemistry

In our patient, tissue biopsy was done during colonoscopy and findings showed large vesicular nuclei, prominent nucleoli and moderate cytoplasm. Many cells show cytoplasmic melanin with clumps of extracellular melanin pigment noted which were suggestive of malignant melanoma.

Post-operatively, rectal tissue showed atypical melanocytes of round, ovoid to spindled appearance and in several areas, cells exhibit cytoplasmic melanin. Three of five superficial inguinal lymph nodes also exhibit melanoma involvement. This histopathology agrees that with Khalid. According to him, these tumor cells show varying proportions of epitheloid areas and spindle cells. There may be in situ change in the overlying or adjacent GI epithelium, which is identified histologically by the presence of atypical melanocytic cells in the epithelial basal layer and extension in a “pagetoid” fashion into the more superficial epithelium. This feature is reported in 40% to 100% of all primary GI melanomas. The tumor cells may either show abundant melanin pigment or may be completely amelanotic[4]. More frequently, however, pigmentation is not apparent at visual inspection; sometimes it

is completely absent in amelanotic melanomas, even when viewed with microscopy. In these cases, immnunohistochemical studies that do not depend on the presence of the melanin pigment are required to confirm the diagnosis. Although quite sensitive, antibodies to S-100 protein are not melanoma-specific and react with a diverse set of mesenchymal tumors, as well as a subset of carcinomas. On the other hand, HMB-45, which is another monoclonal antibody, is specific for melanocytic tumors. Although HMB-45 is not useful in distinguishing benign and malignant melanocytic proliferations, the absence of false-positive reactions with other malignant tumors allows one to identify with certainty any undifferentiated malignancies that react with this antibody as melanomas[8]. However, immunohistochemical staining of melanoma antigen such as HMB#45 and S#100 protein are adjunctive for diagnosis[10]. Immunostains are useful in determining melanocytic differentiation, which is helpful in differentiating melanocytes from cells of non-melanocytic origin. However, immunohistochemical staining is of limited value in distinguishing between benign and malignant melanocytes.Therefore, even in the presence of a broad immunohistochemical panel, a definitive diagnosis of malignancy must be ultimately based on morphological features[11].

According to Meng Su et al, immunohistochemistry should be a routine examination during colonoscopy pathology so as not to miss mucosal melanomas[7].

Immunohistochemical staining was not done in our patient because malignant cells were already identified on biopsy with the presence of melanin pigment which are highly suggestive of malignant melanoma.

Once the definitive diagnosis of rectal melanoma has been established by histopathology, the next question is the determination of the primary or metastatic origin of the neoplasm. According to the criteria proposed by Ozdemir et al, (1) the lesion must be solitary in the surgical specimen (2) there must be no previously excised skin tumor (3) no previous ocular tumor (4) morphology must be compatible with primary tumor (5) there must be no other demonstrable melanomas at the time of surgery (6) findings should be confirmed by careful autopsy. Colonic melanomas not fulfilling these criteria should ideally be termed secondary[4]. In our patient, all these criteria were met except for the sixth criterion, which is confirmation by autopsy.

Management

Surgery

Our patient undergone abdominoperineal resection with superficial inguinal lymph node dissection. Abdominoperineal resection (APR) completely removes the distal colon, rectum, and anal sphincter complex using both anterior abdominal and perineal incisions, resulting in a permanent colostomy[18]. There is no standard treatment approach, and guidelines for for rectal melanoma are scarce. Aggressive surgical resection has traditionally been the mainstay of treatment for most melanomas that have not disseminated at the time of diagnosis. This may be followed by postoperative radiation therapy, chemotherapy and immunotherapy for any residual disease or nodal involvement [4].

In another study, the main therapeutic modality is surgical excision, either WLE (wide local excision) or APR (abdominoperineal resection), with or without chemotherapy and adjuvant immunotherapy. Curative surgical resection is recommended for stage I disease, and stage III patients receive only palliative surgery. Several studies compare the results from the two types of surgical interventions, but significant advantage of any of the techniques has not been shown and the best approach is still a matter of debate. In some publications, it was, however, shown that the choice of surgical intervention does not affect the overall survival [9].

Falch et al studied a total of 2,652 cases of anorectal melanoma published in the literature for a period of 45 years. They devised a stage-based treatment approach according to their staging system. For stage I they proposed APR, for stage II—WLE plus adjuvant radiotherapy or APR in palliative setting, for stage III—WLE plus adjuvant radiotherapy, and for stage IV—WLE plus adjuvant radiotherapy or APR in palliative setting[9].

Weyandt et al proposed treatment guidelines according to the stage of disease and level of invasion. They suggested a local sphincter saving WLE with 1 cm safety margin for early disease with tumor thickness below 1 mm; a local sphincter saving WLE with 2 cm safety margin for a tumor thickness between 1 and 4 mm without internal sphincter muscle involvement; and APR or additional measures to control local tumor reoccurrences in combination with a WLE for anorectal melanomas with tumor thickness above 4 mm. Only in the last group of patients, WLE is associated with risk of local recurrence and complications necessitating further surgery [9].

There is no statistically significant survival advantage that has been demonstrated for APR over wide local excision when patients are compared by similar stages. Yap et al reviewed 17 large case series and concluded that APR should only be reserved for lesions not amenable to local excision or for palliative treatment of large obstructing tumours[10].

For anorectal melanoma, incidence rate for locoregional lymph node involvement is 61% and distant metastases is 29%[9]. Our patient had superficial inguinal lymph node involvement which just proves the higher incidence rate of involvement in mucosal melanomas than the cutaneous melanomas. In a study by Carcoforo et al, the presence of regional lymph node metastases has not been shown to affect recurrence patterns, lending further support to the avoidance of lymphadenectomy[12]. Such idea is in contrary with the clinical practice guidelines for management of melanoma in Australia and New Zealand wherein lymphadenectomy is indicated for proven regional lymph node involvement. Our surgical management follows that of the latter.

Despite the controversial results of these studies, most authors carry out WLE in local disease and APR when regional lymph nodes are affected[9].

Non-surgical management

a. Chemotherapy

Melanoma is generally believed to be a chemotherapy-resistant neoplasm. Nevertheless, several chemotherapeutic agents have shown activity ranging from 10% to 25%. Numerous combination chemotherapy regimens have also been evaluated, but survival benefit is yet to be demonstrated. Furthermore, chemotherapy appears to have a role in only the disseminated cases of primary malignant melanoma. Dacarbazine has remained the standard of care for metastatic melanoma over the last four decades. Temozolamide is another option that was found to have a response rate comparable to that of dacarbazine in a randomized control trial. It offers two potential advantages as it readily crosses the intact blood-brain barrier and can be used as an oral agent. It was also used in one of the patients in our review, who presented with brain metastasis. Other promising options for chemotherapy in melanoma include cisplatin, carboplatin, nitrosoureas, docetaxil and pacetaxil[4].

The combination of chemotherapeutic agents have been developed including BOLD (Bleomycin, Vincristine, Lomustine, and DTIC), CVD (Cisplatin, Vinblastine, and DTIC), The Dartmouth regimen (DTIC, Cisplatin, Carmustine, and Tamoxifen). The response rate was improved, but no difference in survivals compare to DTIC alone. Moreover, the toxicity was increased when used of the combined regimens[9].

Our patient was strongly advised for chemotherapy after abdominoperineal resection but as of this time, she is still undecided.

b. Vaccines

Melanoma has a unique relationship to the immune system with the development of spontaneous tumor-specific immune responses in patients. For this reason, melanoma has been a frequently targeted disease in the development of cancer vaccines. The various vaccines were used in the treatment of melanoma including DNA vaccine, dendritic cell vaccines, peptide-based vaccines, and viral vaccines. Although vaccines have been demonstrated to produce immunologic responses, unfortunately, no clinical benefit has been demonstrated in the previous large randomized vaccine trials performed in melanoma in the adjuvant setting[10].

c. Radiotherapy

Although melanoma is a relatively radioresistant tumor, undoubtedly, radiation is an effective palliative treatment for the 40 -50% of patients who develop unresectable, locally recurrent, and/or metastatic disease resulting in bone pain, spinal core compression, tumor hemorrhage, and central nervous system dysfunction secondary to cerebral metastases[10]. Another study done by Uner et al reported a case of primary anorectal malignant melanoma receiving radiation as the primary treatment rather than surgery and it exhibited a similar outcome, indicating that neoadjuvant therapy, may be beneficial[7].

Prognosis

The prognosis of primary malignant melanoma of the colon appears to be better than other types of primary mucosal melanomas. However, both tend to be more aggressive than their cutaneous counterparts. According to a study on colonic melanomas, the overall mortality was 47%, with one-year and five- year survival rates of 60% and 33% [4]. However, according to Tomioka et al, the reported 5-year overall survival rate is 6% to 15% of patients after surgery [5]. The main determinants of survival are the depth of invasion and stage of disease. According to Barbus et al, risk factors for poor prognosis include advanced disease at diagnosis, ulceration, tumor length of more than 4 cm and thickness of tumor more than 4mm, rich vascularisation of rectal mucosa[1].

Future directions

The past few years have seen numerous advances regarding the cell signaling pathways that propel melanoma in humans. The RAS/RAF/MEK/ERK is one of them, which plays an essential role in melanoma cell growth, invasion, and survival. This has been the focus of investigation as a novel therapeutic target with drugs such as Sorafenib. Such agents have also been combined with other chemotherapeutic drugs such as Dacarbazine with reasonable results. However, the major limiting factor is that not all melanoma patients have the mutation which is essential for Sorafenib to work. In any case, the emergence of targeted therapies looks very promising for the management of melanoma in the years to come [4].

Conclusion and Recommendation

Primary melanoma of the rectum is an extremely rare type and very aggressive with an over-all 5-year survival rate of less than 20%. Despite its rarity, clinicians should still consider anorectal melanoma in patients presenting with blood in the stool. It is advised that further studies are needed to document the long term follow-up, survival advantage and safety profile of the management approaches in patients with primary rectal melanoma. An expeditious diagnosis involving a multidisciplinary team can have an important bearing on prognosis. Based on the current data, it appears that the management of primary rectal melanomas should focus on surgical resection unless the disease has metastasized where surgery only plays a palliative role. Targeted biological therapies show promise in the management of primary rectal melanoma in the near future and should be further studied.

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