

Malignant melanoma of the anal canal: a case report

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Abstract

This article is one case report of 49 year-old woman diagnosed with malignant melanoma of the anal canal. The tumor was detected at early stage and initially treated with local excision, followed by adjuvant interstitial brachytherapy. Since the patient complained of painful local ulceration and atypical cells were found at biopsy, abdominoperineal resection of the rectum was performed and a sterile specimen was obtained, proving the efficacy of adjuvant brachytherapy for local control. Patient is now considered disease free for 30 months after primary treatment.

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Key words: anal melanoma, adjuvant brachytherapy, conservative resection.

Purpose

Primary malignant melanoma of the anorectal region accounts for only 0.4-1.6% of all melanomas and less than 1% of anal canal tumors. These tumors which commonly originate from the squamous epithelium of the anal canal or the squamous-columnar junction have a poor prognosis with 5-year survival rate of 0-22%. Anal melanoma tends to occur more often in women than men. Since it is so rare, no consensus has been established regarding the best treatment option. We present a case report encompassing endoanal excision with adjuvant brachytherapy and discuss other treatment options.

Material and methods

A 49 year-old women consulted her gynecologist in January 2007 for vaginal and intermittent rectal bleeding. Clinical examination of pelvic revealed an enlarged uterus with multiple nodules and an exophytic tumor located in the lower rectum and anal canal. The patient was referred to a surgical oncology department. Clinical findings showed a well-defined, mobile, non-ulcerated anorectal tumor of 4 cm × 3.5 cm, involving the posterior part of the rectal wall, located within 1 and 5 cm from the anal verge. Endovaginal ultrasound revealed a large sessile polypus tumor of the rectum involving both mucosa and submucosa, with intense vascularisation of both intraluminal component and rectal wall without perirectal lymphnode (Fig. 1). Chest X-ray and abdominal ultrasound

results were normal. A biopsy of the tumor was performed and the immune-histopathological (IHC) finding conformed malignant melanoma with IHC positive for S100 and HMB45 (Fig. 2). No suspicious malignant skin lesions were noted.

Patient was staged as a clinical stage I rectal cancer using the AJCC staging system based on clinical exam, endorectal ultrasound, chest X-ray and pelvi-abdominal scanner. In February 2007 an endoanal resection of the tumor was performed with the clear scope of sphincter preservation, as the patient refused rectal

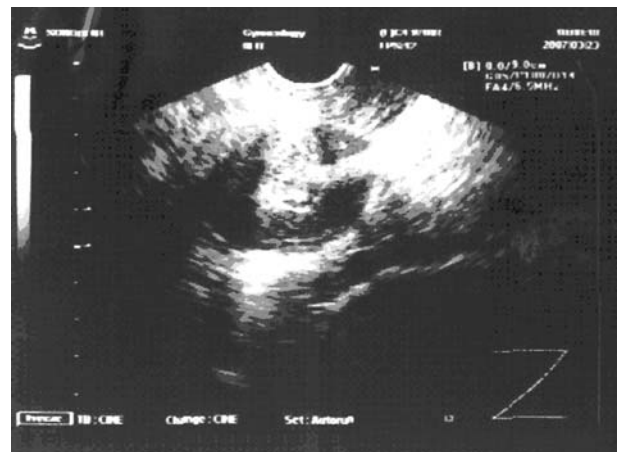


Fig. 1. Endovaginal ultrasound image of the tumor on the posterior rectal wall

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amputation. The resection margins were carefully examined and assessed as negative. Between March and May 2007 after an extensive discussion with the patient and informed consent, an adjuvant radiation therapy was carried out, leaving the option of rectal amputation open as a salvage therapy after irradiation. Adjuvant treatment of interstitial brachytherapy with transperineal guidance – horseshoe plaque was performed under local anesthesia by placing 5 metallic needles of 12 cm length, covering the area located between 0 and 6 cm from anal verge in the posterior aspect of rectal wall (Fig. 3), followed by intracavitary brachytherapy with 30 mm cylinder, irradiating only the posterior arch between 270 and 90 degrees with 6 cm active length. Four fractions of 7 Gy using Nucletron HDR afterloading system with Ir-192 active source were delivered at 5 mm outside the needles by interstitial brachytherapy and 2 additional fractions by intracavitary brachytherapy of 7 Gy at 5 mm from the cylinder applicator surface where the total dose at 5 mm was 60 Gy/6 fractions (fx). The cylinder was shielded frontally in order to spare the uninvolved half of the rectal circumference.

Four months after the end of radiation therapy the patient was admitted to the hospital and surgery was performed for the compressive uterine fibroma. Intraoperative findings included a uterine body of 12 cm

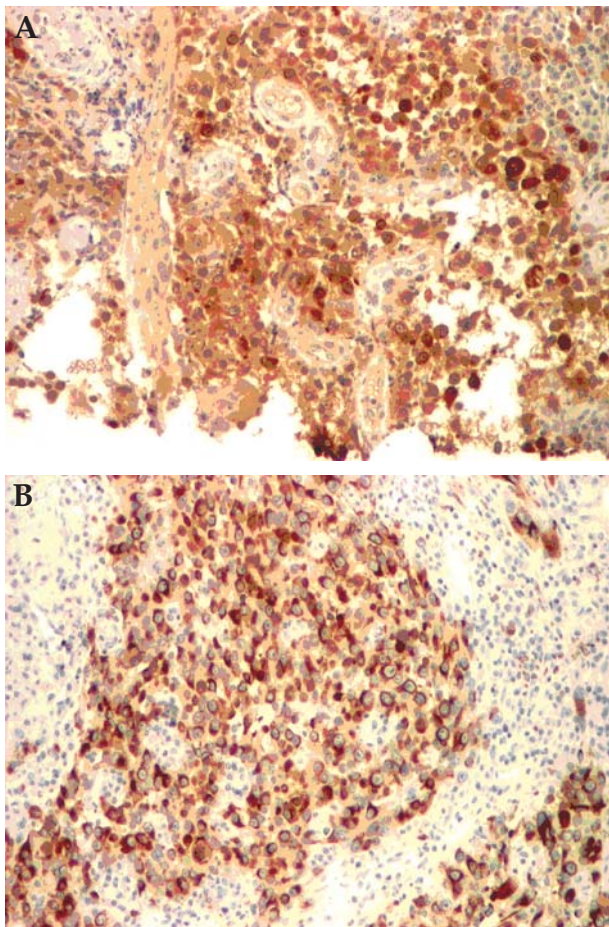


Fig. 2. Immune histochemistry: positive cells for HMB (A) and for S100 (B)

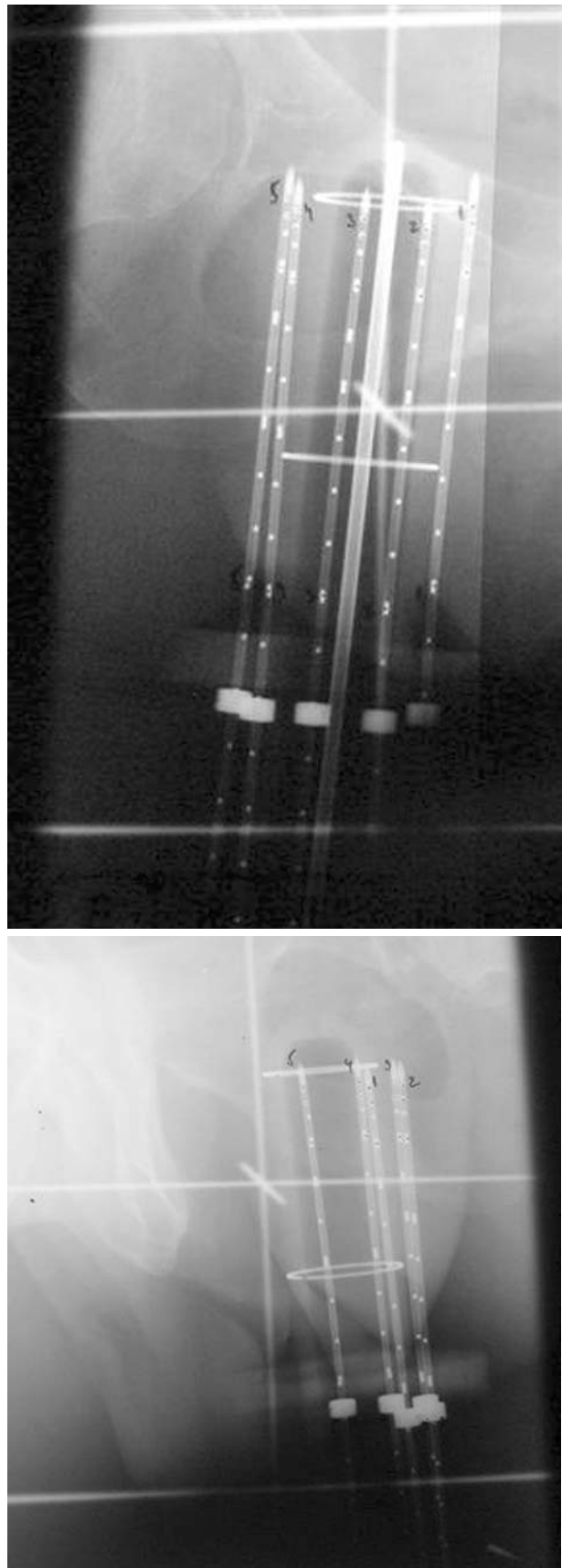


Fig. 3. Two orthogonal radiographs for needles reconstruction and dosimetry

diameter with multiple nodules and an asymptomatic discrete ulceration involving the inferior rectum, interpreted as a brachytherapy adverse effect. Total extrafascial hysterectomy with bilateral anexectomy was performed and the pathology report was favorable for leiomyoma. Three months later the patient experienced persistent rectal painful ulceration and minimal bleeding. Since the suspicion of local failure was raised, biopsy was performed, revealing unusual cells in pathology results. In December 2007, abdominoperineal rectal amputation was performed and the pathology report showed a macroscopic piece of recto sigmoid with anal fragment of 1.5 cm with 1.5 cm of anal vault and 3.2/1.5 cm ulceration with necrosis, free resection margins, 8 negative perirectal lymphnodes and negative IHC (yRo pTo No Mo Lo Vo). Till date, the patient did not receive any systemic treatment.

Results and Discussion

At 30 months since the initial excision, the patient is disease free. To our knowledge this is the first case reported where adjuvant brachytherapy after trans-anal excision for malignant melanoma was administered.

Large studies have confirmed a female predominance for anorectal malignant melanoma [1-5]. The lesion is often discovered in the fifth and sixth decades of life and rectal bleeding is the most common presenting symptom (80-90% of cases). Large series have shown that the five year survival rate is less than 20% [2]. Risk factors for such a poor prognosis usually include an advanced disease at diagnosis (delayed due to misdiagnosis), ulceration, tumor length > 4 cm and thickness of tumor > 4 mm, rich vascularisation of rectal mucosa with increased risk of distant metastasis and the great biological aggressiveness of this type of tumor. The Mayo Clinic reported a 5-year survival as 22% and cure as 16% in their patient population [4]. Most of the studies [5-7] did not find any difference in survival rate between patients treated with wide local excision (WLE) and those with abdominoperineal resection (APR). The Memorial Report favored APR with five year survival 27% vs. 5% for WLE, although the difference was not statistically significant. The benefit of adjuvant chemotherapy is still controversial [8].

There is no high level of evidence in establishing the role of adjuvant radiation therapy following local excision. Nevertheless, retrospective studies have shown that adjuvant radiation after wide local excision (WLE) improves local control which reflects in better median survival compared to WLE or even to upfront abdominoperineal resection (APR). As the prognosis is governed by high rate of distant metastases, we adopted a conservative initial approach for this anorectal melanoma with adjuvant irradiation. We decided for a 60 Gy (equivalent dose, $\alpha/\beta = 10$) brachytherapy (BT) after the Ro endoanal excision because of the small volume to be covered for a tumor with thin infiltration compared to carcinomas and the radiobiological advantages of high dose per fraction for a histology with low radiosensitivity. This scheme was able to secure local control but with severe late toxicity. However, the decision for radical

surgery (amputation) was proposed mainly because of suspicion of recurrence in view of the atypical cells on the "in BT field" anal ulceration biopsy and not for a possible complications due to BT. Nevertheless, 3 cm large ulceration seems difficult to heal spontaneously.

Endocavitary brachytherapy performed with increased dose at the mucosal surface was very likely to be the cause of necrosis as a late radiation complication, as the mucosa receives 140% of the dose prescribed at 5 mm from the surface of these applicators. The first 4 fractions of interstitial BT were switched to the last 2 fractions of endocavitary BT in order to spare an invasive and painful procedure. In order to avoid anal necrosis the doses or endocavitary BT fractions should most likely to be reduced by at least 30%, otherwise the whole BT procedure should be applied with the use of interstitial technique.

Conclusions

Rectal bleeding in female patients is a condition of possible malignant melanoma and in such cases a representative biopsy is mandatory. Whenever possible, wide local excision seems to be a better option for lesion removal and should be executed at first since there is no benefit in survival compared to trans-abdominal resection. The pathology report informs the clinician whether an adjuvant treatment should be delivered or not. The presence of high risk factors for local failure is a strong argument for adjuvant radiation therapy with a hypofractionated scheme delivering a high dose to the initial tumor bed, with large dose/fraction in concordance with radiobiological features of this type of malignancy. Interstitial HDR BT is an alternative for external beam radiotherapy. Furthermore, a sterile specimen obtained after adjuvant BT is a solid argument for the method. The optimal HDR scheme remains to be defined; however endocavitary technique in this type of treatment plan should probably be avoided.

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