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PRIMARY MALIGNANT MELANOMA OF THE FEMALE URETHRA

PRIMARNI MALIGNI MELANOM ŽENSKE URETRE

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Case report

Key words: female urethra, malignant melanoma

Summary. Primary malignant melanoma of the female urethra is a rare tumor that most commonly affects meatus and the distal urethra. The prognosis is poor. We report the case of 65-year-old woman who was refered by a gynaecologist due to an urethral mass mimicking a caruncule. The tumor was removed by a local exscision, and pathological analysis revealed malignant melanoma. After three months distal urethrectomy was performed with no evidence of residual tumor. The patient was uneventful during 6-year follow up period.

Prikaz bolesnice

Ključne riječi: ženska uretra, maligni melanom

Sažetak. Primarni maligni melanom ženske uretre je rijedak tumor. Najčešće je lokaliziran u meatusu i distalnom dijelu uretre. Prognoza je loša. Prikazujemo šezdesetpetogodišnju bolesnicu upućenu od ginekologa zbog tumorske promjene uretre nalik karunkulu. Tumor je odstranjen lokalnom ekscizijom, a patohistološkim pregledom je postavljena dijagnoza malignog melanoma. Nakon tri mjeseca učinjena je resekcija donje trećine uretre, pri čemu tumor nije nađen. Bolesnica je bez znakova recidiva, odnosno metastatskog širenja bolesti i nakon šest godina kliničkog praćenja.

Introduction

The most frequent locations of primary malignant melanoma are the skin and eye, while malignant melnoma of the lower female genitourinary tract is an uncommon malignancy.[1,2]

The urethra is the most common site of origin in primary malignant melanoma of the genitourinary tract. Most malignant melanomas of the female urethra are located at the meatus or in the distal urethra. Urethral melanoma shows its peak incidence in the older age group, the average patient's age is 63 years. The disease is three times more common in women than men.[3–5]

Reed[6] reported the first case of primary malignant melanoma of the female urethra in 1896. The tumor is usually pigmented, varying in colour from black to blue or light brownish lesions, which are firm, nodular, and often ulcerated. Grossly, the tumour may be easily confused with a caruncule.[7] Primary malignant melanoma of the female urethra tends to metastasize at the early stage via the superficial lymphatics to the vulva and vagina, by the deep lymphatics to the inguinal lymph nodes and occasionally to distant sites by the haematogenous route. Survival depends on the stage, location and size of the neoplasm at the time of diagnosis. Histological characteristics do not affect the prognosis significantly and all histological types are treated in a similar manner.[8,9] Despite major surgery, radiotherapy or immunotherapy; malignant melanoma usually has a poor prognosis.[10] Most patients do not survive more than three years. Only eleven patients have been reported so far who lived for 4 years and more.[4] We report an additional case of patient who is alive and well after 6 years.

Case report

A 65-year-old woman was refered by a gynaecologist due to an urethral mass with a gross apperance of a caruncule. Upon examination, a 3-cm wide, pedunculated, black pigmented, friable and hemorrhagic polyp was found at the posterior wall of the urethral meatus. The tumor was removed by a local excision. Histopathologic anlysis revealed polypoid tumor with surface partialy ulcerated and partialy covered with squamous and transitional epitehelia *(Fig. 1)*. The tumor was composed of loosely cohesive nests of atypical epiteheloid and spindle shaped melanocytes showing diffuse and nested growth pattern. The neoplastic cells had abundant eosinophilic cytoplasm, large hyperchromatic nuclei with prominent nucleoli, and brisk mitotic activity (15/10 HPF). Most of the tumor cells contained coarsly granular melanocytic pigment *(Fig. 2)*. Depth of tumor invasion, measured by digital microscopic camera Olympus DP10 is 3.57 mm. No vascular/lymphatic invasion was seen histologically. Immunohistochemically tumor cells showed strong cytoplasmatic reactivity for HMB45 *(Fig. 3)*.

The clinical examination revealed no history of previous cutaneous biopsy or existance of recent suspicious pigmented lesion of other localization, and a diagnosis of primary mealnoma was rendered. The low third resection of distal urethra was performed, in another institution, three months after initial surgery, with no evi-

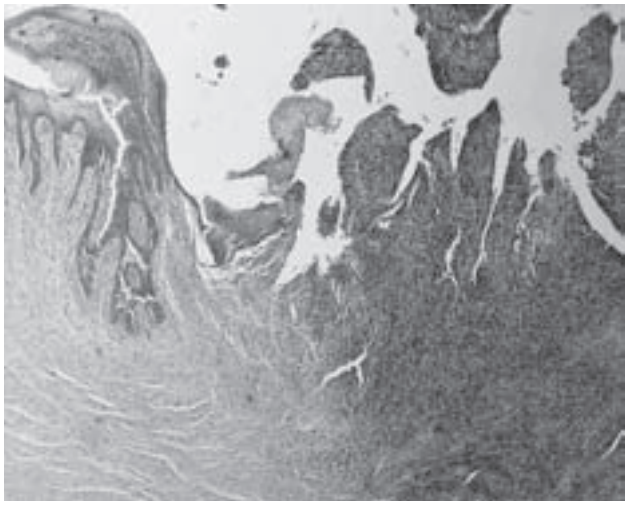

Figure 1. Polypoid, partially ulcerated melanoma of the female urethra (H&E ×40).
Slika 1. Polipoidni, djelomice ulcerirani melanom ženske uretre (H&E×40).

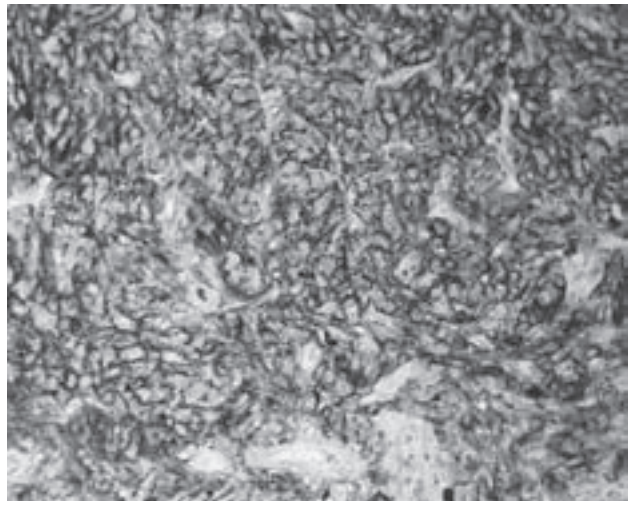

Figure 3. HMB45 expression in melanoma cells (HMB45, MSIP ×200).
Slika 3. HMB45 ekspresija u stanicama melanoma (HMB45, MSTP × 200).

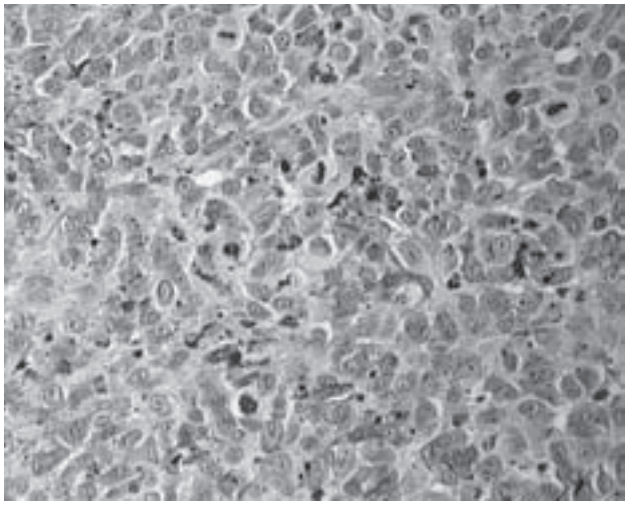

Figure 2. Nests of atypical melanocytes with the large nuclei showing prominent nucleoli, and numerous mitotic figures (H&E ×400).
Slika 2. Gnijezda atipičnih melanocita s velikim jezgrama koje pokazuju istaknute nukleole i brojne mitotičke figure (H&E × 400).

dence of residual tumor. Initial metastatic evaluation, including computerized tomography scan of the chest, abdomen and pelvis revealed no evidence of disseminated disease. Computerized tomography two years after initial diagnosis revealed two enlarged right parailiacal lymph nodes which remained unchanged at two subsequent CT controls performed four and six years later. The patient was uneventful during 6-year follow-up period.

Disscusion

Melanocytes are neural crest-derived cells located in the basal layer of skin, hair follicles, most squamous-covered mucosal membranes, leptomeninges, and several other sites. Their function is to produce an insoluble pigment known as *melanin* using tyrosine as a substrate and to transfer this product through the process of cytocrinia to the adjacent epithelial cells. Ultrastructurally, the hallmark of the melanocytes is the melanin-synthesizing organelle known as the *melanosome.*[11] Malignant melanoma is the tumor composed of atypical melanocytes. Histogenesis of melanomas arising in mucous membranes still remains in dispute and several theories have been proposed. In some animals it has been clearly demonstrated that melanoblasts originating from the neural rests may subsequently migrate with mesodermal cells to sites where they usually not exist. A possible alternative mechanism is the so-called »melanogenic-metaplasia« of the epithelium, in other words metaplasia of squamous and glandular epithelium into pigment-producing cells. Finally, neural crest elements may be transformed into melanocytes and nevus cells.

Primary malignant melanomas of the genitourinary tract are a very rare tumors, and represent less than 1% of all melanomas.[12] The tumor usually arises in the distal portion of the urethra. Symptoms of urethral melanomas rapidly develop and are not distinctive. They include urethral mass, nonspecific perineal pain, dysuria, frequency, incontinence, hematuria or local bleeding.[3] The prognosis is poor. Metastases to the inguinal lymph nodes occur early in the course of the disease, in 50% of the cases being already present at the time of the diagnosis. Rapid disseminaton renders treatment very difficult in spite of an early diagnosis.[4]

The thickness of the tumor and the mitotic index have to be taken into account on microscopic examination, since tumors more than 1.5 mm thick and with more than one mitotic figure in every high power field carry a worse prognosis.[13,14] Metastatic melanoma should be excluded, so detailed history, careful examination of skin, and evaluation of other visceral primary sites are required to confirm the primary nature of the lesion.

The presence of junctional activity in the area adjacent to the lesion is of primary importance in this determination. Histological appearance includes the whole range seen at other primary sites, including diffuse, nested, fascicular, and storiform patterns. Amelanotic melanomas cause the greatest diagnostic challenge, so epitheliotropism as well as pagetoid spread suggested a primary melanoma.[12] Urethral melnoma should be differentiated from benign pigmented lesions including genital lentiginosis, atypical melanocytic nevi and atypical lentiginous hyperplasia. Differential diagnosis include sarcoma, spindle cell carcinoma, small cell carcinoma, lymphoma and plasmocytoma.[12–15]

Two problems in planning the treatment should be recognized: local control and prevention of systemic disease. The local control is primarily surgical. Kim et al.[15] suggested that total urethrectomy with bilateral inguinal lymph node dissection should be the initial treatment in patients without evident distant metastases. Some authors recommend even more radical therapy including pelvic exenteration in case of melanoma with depth of penetration more than 3 mm.[16] Some authors suggest adjuvant treatment with β-interferon and systemic chemotherapy.[17]

According to our knowledge 89 cases have been reported in literature, but only few authors reported survival longer than 6 years.[18] Glenn reported the first case in 1953, of 45-year old woman with stage D_1 disease that underwent subtotal urethrectomy and lymph node dissection, and lived for 13 years without recurrent tumour.[19] In 1976 Katz reported a case of primary melanoma of urethra and bladder neck (stage C_3). Following radiotherapy and surgery patient survived disease-free for 10 years.[3] Another case of a patient with stage A primary malignant melanoma was reported by Mayer in 1987. Patient underwent partial urethrectomy and vulvectomy and remained disease-free for 15 years.[20]

Despite adverse histological features revealed in our case (brisk mitotic activity, necrosis, depth of invasion) and conservative treatment, our patient is still alive and uneventful after 6 years. Therefore we presume that conventional histopathological prognostic factors (tumour depth, level of invasion, mitotic rate, and ulceration) do not play as important role in predicting outcome and biological behaviour in the primary malignant melanoma of the female urethra as in the primary skin melanomas. In addition, more recently defined criteria, such as presence of melanoma cells in the peripheral blood have been shown to correlate with prognosis and overall survival as well.[12,21] However all of the abovementioned criteria are limited in their ability to predict outcome that is universally dependent on early diagnosis and subsequent aggressive surgery intervention.

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