INTRODUCTION

Malignant melanoma (MM) accounts for 3% of all cancers in Europe [1]. The incidence of MM in white females is 14.7 – 15.2 per 100,000, while it is less common in Asian and Black females [2]. However, MM of the genitourinary tract is very rare, accounting for 1% of all cases [3, 4]. In addition, primary MM of the urethra comprises 0.2% of all melanomas and 4% of all urethral cancers [5]. The MM of the urethra is rare due to its endodermal origin, as melanocytes arise from neuroectodermal tissue. However, the abnormal migration of melanocytes during the embryonic development may explain their occurrence in the urethra [6]. Malignant melanoma of the genitourinary tract is very rare, accounting for 1% of all cases. In addition, primary malignant melanoma of the urethra accounts for 0.2% of all melanomas and 4% of all urethral cancers. The abnormal migration of melanocytes during the embryonic development may explain their occurrence in the urethra. Also, vulva contains a relatively high concentration of melanocytes, so it may be the reason for higher incidence of malignant melanomas in females than in males, especially located at the meatus or in the distal urethra.

CASE REPORT

A 60-year-old woman presented with a solid tumor protruding through the vaginal introitus. Computerized tomography revealed a 5 cm large tumor of the urethra, infiltrating the bladder neck and the anterior vaginal wall. In addition, a bilateral pelvic lymphadenopathy was observed. The patient underwent anterior pelvic exenteration with urethrectomy, bilateral pelvic lymphadenectomy and bilateral ureterocutaneostomy. Followed by immunohemotherapy. Nonetheless, the patient died 10 months after the surgery.

CONCLUSION

Urethral melanoma is a tumor with a very poor prognosis and high recurrence rate (71%), even after wide surgical resection, adjuvant radiotherapy, chemo and immunotherapy.

KEY WORDS: Melanoma; Urethral Neoplasms; Female; Surgical Procedures, Operative; Treatment Outcome

Sažetak

Uvod. Maligni melanom čini 3% svih karcinoma u Evropi. Maj-ligni melanom genitourinarog trakta je vrlo redak tumor i javlja se u 1% svih slučajeva. Pored toga, primarni maligni melanom uretere predstavlja 0,2% svih melanoma i 4% svih karcinoma ureobre. Abnormalnom migracijom melanocita tokom embrionalnog razvoja se može objasniti pojava ovog tumora u ureteri. Pored toga, vulva sadrži relativno visoku koncentraciju melanocita, što mogu biti razlozi za češće pojavljivanje malignog melanoma kod žena nego kod muškaraca i za pojavu tumora u distalnoj ureteri i meatu. Prikaz slučaja. Sesdesetogodišnja žena se javila urologu sa solidnim tumorom koji je prolirao iz intoritusa vagine. Komputerizovana tomografija je pokazala tumor veličine 5 cm u ureteri, koji infiltrira vrat mokraće bešice i prednji vaginalni zid. Pored toga, postojala je bilateralna limfadenopatija male karlice. Pacijentkinji je učinjena prednja egzenteraza sa uretrakтомijom, bilateralna pelvična limfadenektomija i bilateralna ureterokutaneostomija. Nakon hirurškog lečenja primenjena je imunohemoterapija. Međutim pacijentkinja je preminula 10 meseci nakon hirurške intervencije. Zaključak. Maligni melanom uretere je tumor sa vrlo lošom prognozom i visokom stopom recidiva (71%), čak i nakon široke hirurške, adjuvantne radioterapije, hemoterapije i imunoterapije. Ključne reči: melanom; karcinom uretere; žena; operativne hirurške procedure; ishod lečenja.

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early metastasis [11–13]. At the time of diagnosis, about half of the patients have a metastatic disease. Melanomas may be confused with urethral polyps, mucosal prolapse or caruncles [14]. The histopathological diagnosis can be assisted by the use of immunohistochemical markers, such as HMB-45 and S-100. The MM is usually treated by extensive lesion excision and removal of the surrounding lymph nodes [15]. Surgery still remains the initial treatment of choice for localized disease. However, adjuvant local-regional and systemic therapy is necessary.

Case Report

A 60 year-old female complained of obstructive voiding symptoms, intermittent urethrorrhagia and a painful mass protruding from the vagina. Physical examination revealed a 4 to 5 cm white polypoid mass in the vaginal introitus, originating from the external urethral meatus (Figure 1).

Urethrocytostoscopy revealed a mass that infiltrated the whole urethra, up to the bladder neck. After the biopsy, MM was established by histopathological examination. Computerized tomography (CT) revealed a 5 cm-large tumor of the urethra, infiltrating the bladder neck and the anterior vaginal wall, and enlarged bilateral pelvic lymph nodes.

Figure 1. White polypoid mass in the vaginal introitus originating from the external urethral meatus
Slika 1. Bela polipoidna masa u introitusu vagine, poreklom iz spoljašnjeg meatusa uretre

The patient underwent anterior exenteration with urethrectomy, bilateral pelvic lymphadenectomy and bilateral ureterocutaneostomy (Figure 2). All lymph nodes were enlarged on both sides, and a total of 32 lymph nodes were removed, as the aortic branch was reached. Inguinofemoral lymphadenectomy was not performed, because metastases had already been found in all lymph nodes and the patient was already in poor physical condition, and an additional bilateral operation would compromise the earlier intervention without a positive benefit.

Pathological examination of the whole specimen confirmed MM of the urethra, infiltrating the anterior vaginal wall and the bladder neck, and all lymph nodes were positive for metastases (Figures 3 and 4).

Following the surgery, the patient was referred to the Institute of Oncology and Radiology of Serbia, where chemo and immunotherapy were applied according to MM protocols of this institution. Dacarbazine, 140 mg/m² was administered for 5 days, vincristine, 0.8 mg/m² on day one, and injection of inter-
when working up a patient with genitourinary complaints [18]. Microscopic examination of urethral MMs demonstrates a wide histologic spectrum with diffuse, nested, fascicular and storiform patterns of pleomorphic cells [10]. The histopathological diagnosis can be assisted by the use of immunohistochemical markers, such as HMB-45 and S-100. Due to its infrequency, there are no guidelines and recommendations for the diagnosis and treatment. It is usually treated by extensive lesion excision and removal of the contributory lymph nodes [15]. Sometimes, small urethral MMs are erroneously removed by local excision, since they may resemble caruncle. Distal urethrectomy following the excision did not reveal a residual tumor [16]. Amelanotic melanoma is a rare form of the urethral MM, and often resembles urethral caruncle. If the tumor is not locally invasive, radical surgery can be followed by continent urinary diversion and the reconstruction of the vulva [17]. Conventional prognostic factors, such as the depth of invasion or tumor stage, do not have an important role in predicting survival, due to the mucosal location and nodular growth, typical for this tumor. Melanoma of the urethra generally has a worse prognosis than the cutaneous melanoma [19]. This is mostly because of delayed diagnosis. Large, infiltrating, T4 tumors have poor prognosis, despite radical surgical treatment and postoperative immunochemotherapy [20]. DiMarco et al. reported a high recurrence rate of the primary urethral MM within the first year (60%) and advocated total urethrectomy in preference to partial, because of the associated high risk of relapse. In the series of 11 cases. DiMarco found that all women presented with a tumor in the distal urethra, while seven women had a local extension to the vagina. The authors described a 60% recurrence rate in the first year, and a cancer specific survival of 27–38% at 3 years [7]. The mean survival in two largest series was 16 months. Survival over 5 years was reported in 12 patients [7].

**Conclusion**

Urethral melanoma is a tumor with a very poor prognosis and high recurrence rate (71%), even after wide surgical resection, adjuvant radiotherapy, chemotherapy and immunotherapy.

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