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Melanoma *in situ* of the penis: A very rare entity with an even rarer presentation

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ABSTRACT

Penile melanoma *in situ* is a very rare malignant neoplasm. Surgical treatment is the standard approach, although there are no recommendations regarding the extent and best technique.

A 28-year-old male presented with a dark-brown macule on the glans, whose biopsy revealed melanoma *in situ*. A local excision followed by a partial resurfacing was performed, with follow-up revealing no sign of recurrence and good quality of life.

Melanoma is a very dangerous tumor due to its metastization potential. The main challenge is early diagnosis. Surgical treatment is the best approach, although it is difficult to balance resection and organ preservation.

1. Introduction

Primary penile melanoma is a rare malignant neoplasm, representing no more than 0.1% of all extraocular melanomas and less than 1.5% of all primary penile malignant tumors, with little more than 200 cases reported.[1]

Depending on its location, it can be divided into cutaneous (located in the skin or foreskin) or mucosal (located in the glans, meatus, urethra, crown or internal foreskin). Both have distinct etiologies, risk factors, genetic profiles, presentation and outcome. Mucosal melanomas are unrelated to ultraviolet light exposure and more aggressive, with consequently poorer prognosis, probably because most present with advanced disease.[2]

The most common locations are the glans (55%), foreskin (28%), penile shaft (9%) and urethral meatus (8%). It mostly affects elderly people, in the sixth decade of life.[3] It can present with a painless pigmented macula or papule with progressing growth and/or ulceration.[4] The definitive diagnosis requires histopathology examination showing increased activity of atypical junctional melanocytes.[4] Additionally, size and asymmetry of the lesion, confluence of nest cells, atypical cells and melanocyte help in diagnosis.[4]

To the best of our knowledge, penile melanoma *in situ* is even rarer, with few cases reported. Thereby, no worldwide recommendations regarding the standard approach and follow-up are available, since data is based on case reports and small case series.[4,5]

In most melanoma cases, the prognosis is poor, with an overall survival of 33% at five years.[3] Multiple reasons can delay the diagnosis and lead to advanced disease.[5] Regarding melanoma *in situ*, literature reported favorable long-term follow-up without recurrence.[3–5] Therefore, early diagnosis is of paramount importance.

The authors present an extremely rare case of melanoma *in situ* of the penile glans in a young patient, treated surgically with partial glans resurfacing using a thigh skin graft.

2. Case report

A 28 years-old caucasian male, with no relevant past medical history, presented as an outpatient to the dermatology appointment with a pigmented lesion in the penile glans, that enlarged in diameter during the previous 2 months. It consisted in a long standing 8-mm dark-brown macule on the glans, 10 mm away from the urethral meatus, with the development of an irregular black central dot (Fig. 1). Physical examination didn't reveal enlarged inguinal lymph nodes or other skin or mucosal alterations. A biopsy in the most pigmented center of the lesion was performed which showed proliferation of atypical melanocytes arranged mostly as single units and in small nests migrating to the upper epidermal layers, consistent with the diagnosis of melanoma *in situ* (Fig. 2).

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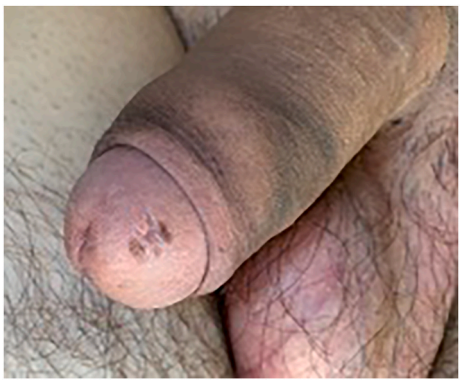

Fig. 1. Penile dark macule in the patient's glans after central black dot biopsy.

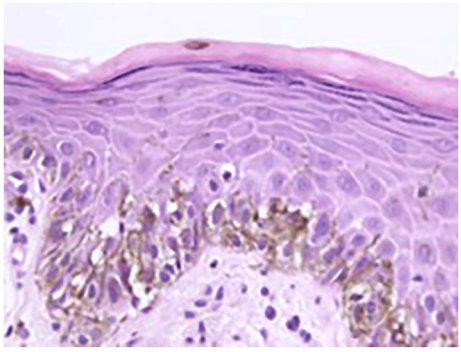

Fig. 2. Histological aspect of melanoma *in situ* of the glans: the melanocytes are aligned in single units and have elongated and thickened cytoplasmatic dendrites (H&E 400x).

After evaluation by a multidisciplinary team, including Urology, Dermatology and Oncology, it was decided to perform conservative surgical treatment with local excision of the neoplasm, with 5 mm of safety margins, considering the age of this patient.

Local excision of the lesion was successfully performed removing the lesion quadrant. and Frozen section of the underlying tissue didn't reveal any tumor cells. Then, a partial resurfacing of the glans was performed using a split thickness skin graft from the thigh (Fig. 3).

Four weeks after surgery, the patient presented with scaring of the surgical wound and had already resumed his normal lifestyle.

One year after surgery, the patient is asymptomatic, without neither local recurrence nor any concerns or symptoms regarding urinary or sexual activity, and in the future he will be clinically checked on a regular basis, following penile cancer guidelines, since there is no specific orientation.

3. Discussion

Melanoma is one of the most dangerous tumors due to its potential of systemic metastization. The main challenge in penile melanoma is its early diagnosis, since it has major impact in overall survival. Since hiperpigmented lesions on the penile glans are common, there should be a special awareness regarding changing features, like enlargement or ulceration, that could develop into melanoma.[5]

Surgical approach is the standard treatment of localized penile melanoma.[4] Controversy exists in the extent of surgery, with recommendations varying from imiquimod topical treatment or surgical excision, to total penectomy with bilateral radical inguinal lymph node dissection. A limited number of cases was reported, thus there is no standard approach.[5] Despite the technique, the main objective is achieving negative margins as it reduces recurrence and improves

Fig. 3. Partial resurfacing of the penile glans with tight skin graft.

long-term survival.[5] Additionally, male genital location is a risk factor for subclinical spread and positive margins, since maximum organ preservation is a concern with maximum organ preservation.[1,5]

In this case, the authors opted for surgical excision since it is stated as the mainstay option, although literature reported favorable results with imiquimod.[5] Although Moh's micrographic procedure could be an option, the concern of the frozen section correct analysis, since keratinocytes can obscure melanocytes. Also, it has been stated as better for indistinct or larger lesions. So, the authors opted for glans resurfacing.[5] In melanoma *in situ*, there is lack of consensus regarding the optimal surgical margins, ranging from 5 to 10 mm.[3,5]

As for all the other locations, the efficacy of surgery for primary melanoma depends on local recurrence rate. Importantly, it is possible to increase disease-free survival with treatment in its early stages, like the cases of penile melanoma *in situ*, with no reported disease recurrence for long follow-up periods.[3–5]

Regarding the existing data, the authors followed the recommendations of the melanoma *in situ* at other locations adopting an organ-sparing approach, in order to minimize the negative impact on aesthetic, functional and psychological outcomes as well as in overall quality of life of such a young patient.

4. Conclusion

Melanoma is one of the most dangerous tumors due to its potential of systemic metastization. The main challenge in penile melanoma is early diagnosis. There should be a global awareness regarding pigmented lesions in the penile glans with changing features, since they can represent cases of melanoma in its earliest stages. Surgical treatment is considered the best approach, although may be difficult to balance a wide resection with maximum organ preservation.

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Statement of ethics

The patient gave a written informed consent to publish this case report, including clinical information and pictures.

Declaration of competing interest

The authors have no conflicts of interest to declare.

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