Vulvar primitive melanoma and sentinel lymph node: case report

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Summary

The case of a 54-year-old woman who developed vulvar melanoma arising from a melanocytic lesion, extending from the clitoris to the left labium minor, without clinical involvement of the groin node station bilaterally is presented.

The patient first underwent an incisional diagnostic biopsy that revealed a melanoma 4 mm in thickness; subsequently preoperative lymphoscintigraphy with 99m Tc Nanocoll was executed. Surgery consisted of a radio-controlled lymphadenectomy and radical vulvectomy. Two bilateral subgluteus soft-tissue flaps were made to reconstruct the surgical defect, anastomosing the urethral and vaginal stump. At 36 months follow-up the patient was negative for neoplastic recurrence.

Key words: Vulvar melanoma; Lymphoscintigraphy; Sentinel node biopsy; Vulvectomy.

Introduction

Vulvar melanoma is a rare genital neoplasia occurring frequently in older women with a poor prognosis [1].

In the past radical vulvectomy was the most important treatment associated with bilateral inguinofemoral lymphoadenectomy. However, global survival was poor despite such a radical approach [2]. Over the past 20 years the treatment for vulvar melanoma has changed dramatically to a much less extensive vulvectomy and selective groin resection [3].

Several authors have more recently focused attention on conservative treatment, by local wide excision and a selective radio-controlled lymphoadenectomy (SLN) to end clinical staging and obtain local disease control [4, 5]. Lymphatic mapping and sentinel lymph node (SLN) biopsy represent revolutionary oncological surgery in recent years for malignant gynecological treatment and one of the main research interests in gynecological oncology. The sentinel node, in fact, is the first node that drains the primary tumor and its pathological involvement appears to be an accurate predictor of the status of the entire lymphatic system [6].

It is generally accepted that locoregional lymphadenectomy is indicated in patients with clinical node involvement. Controversy exists as to whether performing early lymph node dissection is therapeutically advantageous patients without clinical node involvement. SLN appears to offer a new mininvasive surgical management in patients with vulvar melanoma without clinically palpable locoregional relapse.

Unfortunately, still today, large and multi-service trials are insufficient to define the implementation of sentinel node biopsy in vulvar melanoma [6, 7].

The case of a middle-aged woman who developed a melanoma arising from a vulvar melanocytic lesion is reported together with the surgical procedure and follow-up.

Case Report

A 54-year-old woman developed a vulvar nodular lesion, permeating the periclitoral region, arising from a melanocytic lesion and extending from the clitoris to the left labium minor without clinical involvement of the groin nodal station bilaterally.

The patient underwent local incisional diagnostic biopsy. A vulvar lesion was identified at histological evaluation which was diagnosed as nodular invasive ulcerated melanoma with a thickness of 4 mm, Clark level V, arising from a vulvar melanocytic lesion (Figure 1).

Her hepatic enzymes were highly out of normal range so she underwent additional clinical tests to discriminate hepatic disease from secondary hepatic metastasis. Moreover, a radiodiagnostic test and ultrasound (US) were performed to evaluate vulvar tumor stage but they were all negative except for an 8 mm left lymph node discovered by ecography which had a 4 mm focal cortical thickness without vascular alteration at color Doppler, not assimilable to neoplastic recurrence.

The patient underwent presurgical lymphoscintigraphy with 99mTc-Nanocoll. Lymphoscintigraphy highlighted two inguinal regional lymph nodes, one on the left and one on the right. Their projection was marked on the skin and surgery was scheduled.

Ten minutes before the surgery 3,5 cc of patent blue was administered into the superficial derma, all around the nodular vaginal lesion with five injections.

Surgery consisted of SLN biopsy by a Scintiprobe MR100 Pol-Hi-Tech® which found two nodes, one on the left and one on the right with high mapping and five lymph nodes (3 right/2 left) of the saphenous vein chain not highly mapped. Moreover all five nodes were not absolutely patent blue marked. Therefore, radical vulvectomy (Figure 2) with 2-cm free margins was attempted, deep into the muscular fascia, and frozen section of the extemporary clitoral, urethral and perineal margins was carried out; all were negative for melanoma.

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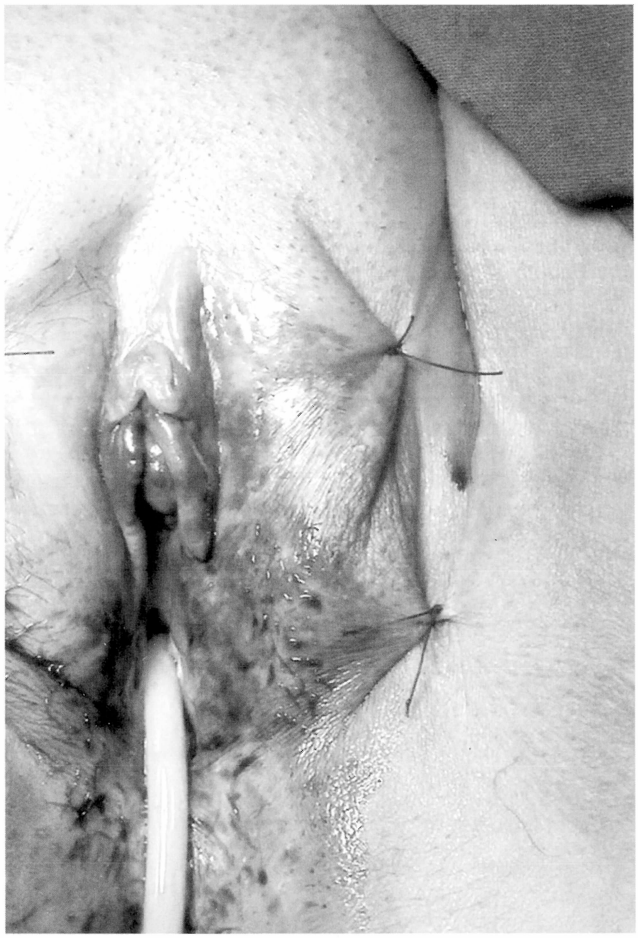
Fig. 1



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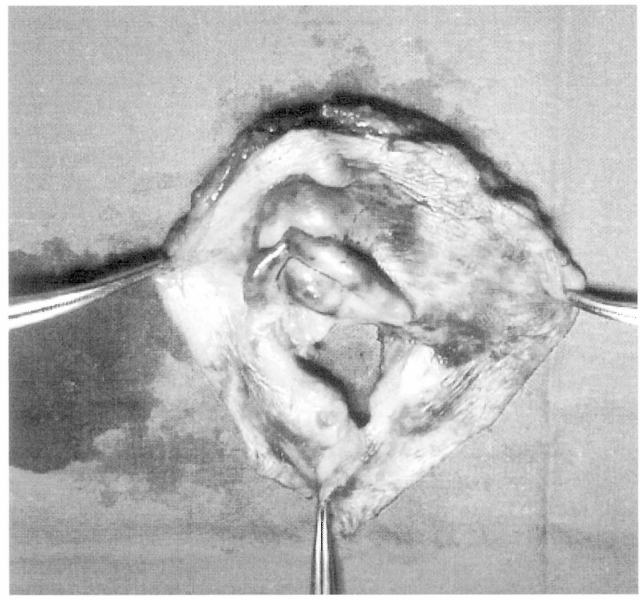

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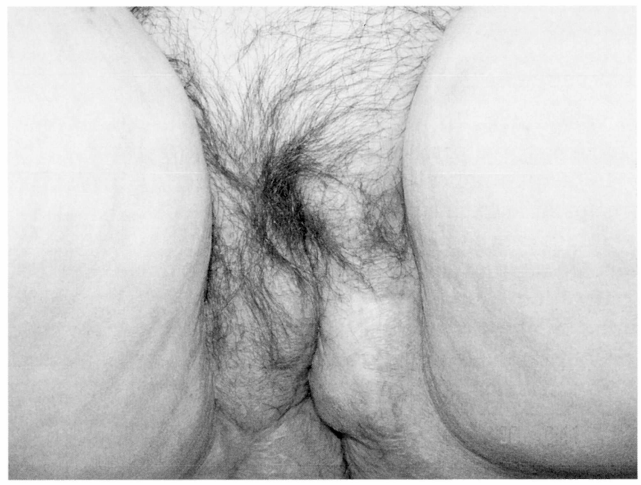

Fig. 3

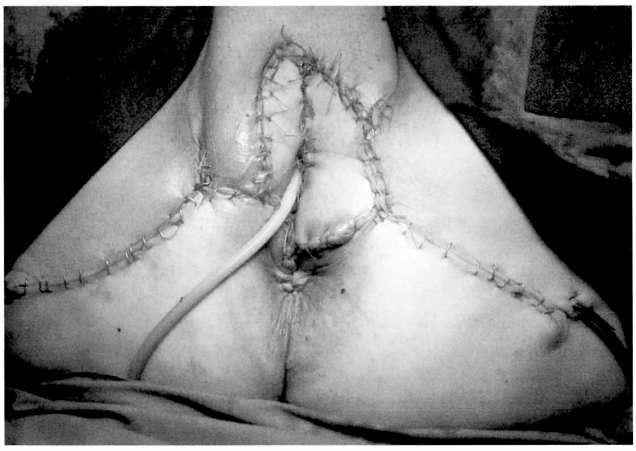

Figure 1. — Nodular invasive ulcerated melanoma arising from a vulvar melanocytic lesion.

Figure 2. — Vulvectomy.

Figure 3. — Subgluteus soft-tissue flaps to reconstruct surgical defect.

Figure 4. — Postoperative 36-month follow-up.

Two bilateral subgluteus soft-tissue flaps had been made to reconstruct the surgical defect, anastomosing the urethra and vaginal stump. Two drainage suctions were affixed (Figure 3).

Nine days later, the patient underwent intraoperative curettage and the margins were sutured to reconstruct a new right labium major with little dehiscence.

Results

Histological evaluation of the vulvar lesion highlighted ulcerated nodular melanoma (Clark level V, 4 mm thick). The urethral and clitoral margins were disease-free at microscopic evaluation.

Selective radio-controlled lymphoadenectomy indicated two inguinal highly reactive lymph nodes (one on the left and one on the right), three right inguinofemoral lymph nodes and two left inguinofemoral lymph nodes not highly mapped nor patent-blue stained.

All seven lymph nodes at histology (hematoxylin & eosin) and immunohistochemical (HMB45, MART1) evaluation did not indicate any focal micrometastasis.

Discussion

Melanoma of the vulva was first described by Hewitt in 1861 [8]. Vulvar melanoma is a rare genital neoplasia accounting for < 1% of melanomas and 1.0 to 2.3% of all female melanomas [2] and occurs more commonly in white women than Afro-American, Asian or other more heavily pigmented races [4]. Vulvar melanoma mainly strikes older women (63.2 mean age; range 10-93) [1, 2, 5, 9] and has a poor prognosis with a 5-year survival rate of 47% in the largest series [1, 2, 5]. The diagnosis is generally later than for cutaneous melanoma, although it is the second most frequent vaginal malignancy (3.4-10%) of vulvar neoplasias [1, 2, 10, 11]. Due to the poor prognosis this disease is a significant issue in women's health [2].

This neoplasm shows a tendency to local relapse as well as development of locoregional and distant metastases through lymph node and hematic dissemination [3].

In vulvar cancer locoregional node involvement seems to be the most important prognostic factor and survival mainly depends on the this status [4, 18]. Moreover, 10-26% of neoplasias clinically limited to the vulva present with inguinal adenopathies, but clinical exploration or imaging can not be relied on to detect nodal involvement [6, 7].

In the past radical vulvectomy was the most important treatment associated with bilateral inguinofemoral lymphoadenectomy, which was popularized between 1912 and 1950 through the work of Basset [12], Way [13], and Taussig [14]. However, incidence of wound breakdown represented a high morbidity rate, so a new surgical approach was proposed by Byron [15] in 1960. In fact, with three separate incisions he was able to preserve a skin bridge between the vulvar and inguinal wounds. This treatment allowed for "long-term survival", but the global survival of these patients was still poor despite such radical approach.

Several authors since 1993 have suggested a more conservative treatment, by local wide excision with 2-cm free margins and an inguinofemoral incision made separately to complete the lymphoadenectomy [1, 4, 5]. Moreover, bilateral inguinofemoral lymphoadenectomy has been shown to be unnecessary in 70% of Stage IB patients [6].

Since the recent use of SLN biopsy (introduced in 1992 by Morton [16] for cutaneous melanoma) for breast cancer and melanoma there has been diffuse research on the experimentation of this technique in most solid malignancies such as gynecological cancers. Studies on SLN biopsy in vulvar cancer have highlighted that sentinel node involvement is an accurate staging index of locoregional spread. In the last few years, several studies on the feasibility of SLN in cervical cancer have yielded promising results. Accurate histological examination of the sentinel node biopsy with ultrastaging and immunohistochemical or polymerase chain reaction analyses can identify nodal micrometastasis that traditional analysis would identify as negative for metastatic disease.

Indeed, since 1997 up to today, a new surgery for vulvar melanoma has been introduced: in vulvar melanoma > 1.0 mm, a 2-cm free-margin excision, or a 1-cm free-margin for < 1.0 mm thickness, associated with SLN biopsy. Elective SLN biopsy for < 0.76 mm tumor thickness does not seem to offer any advantage biopsy survival rate [4].

Lymphoscintigraphy and SLN biopsy in have been growing in interest as a conservative surgical procedure to end-clinical stage (the main contribution is in the ability to identify micrometastasis smaller than 2 mm [6]) and to obtain local disease control in patients without manifest inguinofemoral lymph nodes or distant metastases. Moreover the addition of patent blue presurgically, locally injected to visually enhance lymph node drainage, has had an increased success rate in identifying sentinel nodes [9]. For tumor thickness > 4.0 mm, SLN biopsy does not appear to be clearly safe in vulvar neoplasms and in metastasis local control [1, 17].

Conclusions

SLN biopsy is highly enforceable in vulvar melanoma, allowing surgical trauma and morbidity for the patient to be reduced. Moreover, a mininvasive surgical procedure warrants better tropism of the flaps used to reconstruct the residual defect.

In our case presurgical patent blue local injection and intraoperative lymph node gamma camera evaluation were greatly predictive and confirmed the histological examination. Nonetheless vulvar melanoma is such a rare cancer that knowledge of the disease and its SLN are not so representative and are frequently based on meta-analyses and case series of two or more decades [18]. Lack of large case studies does not permit clear answers to this aggressive neoplasia, its etiology, risk factors, and biological behavior [19-21].

Finally, correct management of vulvar melanoma still does not appear to be properly encoded. SLN biopsy leads, at least, to a more conservative surgery with a lower morbidity and at the same radicalization despite a wider surgical procedure with a high morbidity and great disabling for patients. Lymphoscintigraphy and gamma-probe-guided localization nodes guide the surgeon to obtain accurate sentinel node localization; once localized, its swift and simple, through a small skin incision, to remove sentinel nodes, especially if they are emphasized by patent blue staining [7] .

Due to patient's non acceptance of the oncological disease, the consequent highly aggressive surgery and the absence of clinically palpable locoregional relapse, we prefer the SLN surgical procedure without bilateral lymphoadenectomy as codified in most large series [6-11], even if this conservative surgical technique still requires validation.

Postoperative patient morbidity such as infection, bleeding, wound breakdown and partial/total flap failure did not occur except for the new right labium major with insignificant slight dehiscence.

At 36-month follow-up, the patient is disease-free and has not shown any clinical or local or distant neoplasm

relapse at radiodiagnostic evaluation. Her quality of life is satisfactory and her urological functioning has been preserved (Figure 4).

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