

# Radical vulvectomy with inguinal lymph node dissection for a giant vulvar tumor

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## ABSTRACT

Vulvar cancer is a common gynecologic malignancy affecting especially elderly women worldwide, which is usually diagnosed in patients with HPV positive cytology. The most frequently seen histopathological subtype remains squamous cell vulvar carcinoma. We present the case of a 73 year old patient who presented with a giant vulvar carcinoma in which a radical hemivulvectomy with bilateral inguinal lymph node dissection was performed

**Key words:** giant vulvar tumor, squamous cell vulvar carcinoma, vulvectomy, inguinal lymph node dissection

## INTRODUCTION

Vulvar cancer is the fourth gynecologic malignancy among women worldwide, which usually affects elderly patients, with an estimated incidence of 2 newly diagnosed cases of 100.000 women every year (1-5). The golden standard in treating vulvar cancer remains achieving a good local control of the disease which seems to be best obtained when ontogenic principles of anatomy are entirely respected (6,7). When it comes to tumor spread, studies have shown that microscopic involvement of the surrounding tissues might be seen; for this issue a macroscopic radial margin of 2 cm is indicated in order to perform a complete resection. In cases presenting large tumors with posterior development this might necessitate performing a posterior infralevator exenteration. However, if after resection histopathological examination reveals the presence of positive resection margins, adjuvant radiation therapy might be needed (8,9).

## CASE REPORT

We present the case of a 73 year old female who presented for a giant vulvar tumor involving the right labia majora. We performed a radical right hemivulvectomy associated with bilateral inguinal lymph node dissection.

Histopathological examination confirmed the presence of a moderately differentiated squamous cell vulvar carcinoma, with 5 of 10 positive lymph nodes on the right side and negative lymph nodes on the left side. The specimen was resected with oncological limits of at least 2 cm of healthy tissue. A direct wound suture was performed. (figures 1-5)

## DISCUSSIONS

Current surgical treatment for vulvar cancer consists in the wide resection of the tumor with negative resection margins (at least 2 cm from the macroscopic tumor borders) without involving any deeper tissues, with per-primam suture of the wound associated with inguinal lymph node dissection (7,8). When it comes to the most appropriate incision to perform a total vulvectomy with bilateral groin lymph node dissection, initially it was thought that an unique incision for the three therapeutic gestures is enough; however the local complications including leg oedema or wound dehiscence were very often seen, so a triple butterfly incision was proposed with better results in terms of local healing and postoperative complications (4,6,7).

Some authors recommend that the deep resection margin should be the inferior surface of the uro-genital diaphragm and the fascia covering pubic symphysis (9-11). Five year overall survival rates range between 70-91% for cases with negative inguinal lymph nodes and 25-41% for cases with positive nodes; however, in cases with positive inguinal lymph nodes, pelvic lymph node dissection might be needed due to the fact that up to 20% of patient with positive groin lymph nodes will report positive pelvic nodes (12-16).

In order to improve the late postoperative outcomes and to decrease the recurrence rate, Hockel et al implemented the principles of ontogenetic anatomy and compartment resection based on the presence of compartmental borders. The authors demonstrated the presence of a vulvar field resection which should be removed whenever a vulvar tumor is present (7). These findings are somewhat similar to those proposed by the same author regarding complete mesometrial excision in cervical cancer which seems to decrease the local rates of recurrence (17,18). According to Hockel's study, ontogenetic vulvar compartment derived from vulvar anlage, the labia majora lateral to the interlabial sulcus and the anus except its ventral segment report different origins from different precursor tissues. The ontogenetic vulvar compartment is further divided into three subcompartments based on primordial mesenchyme: the inner (vestibulum) subcompartment, the middle



Figure 1 - initial aspect of the giant vulvar tumor

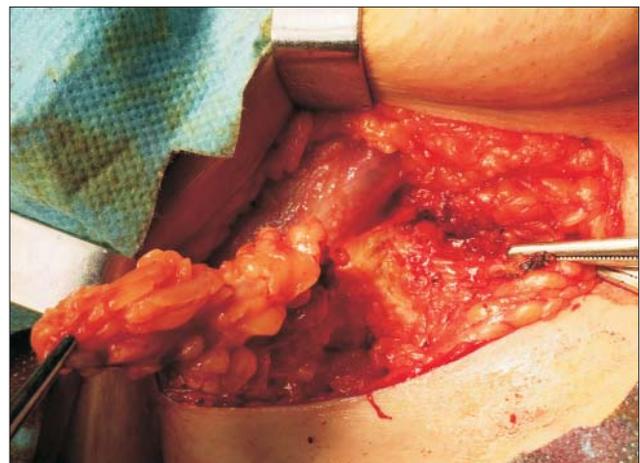


Figure 2 - Inguinal lymph node dissection

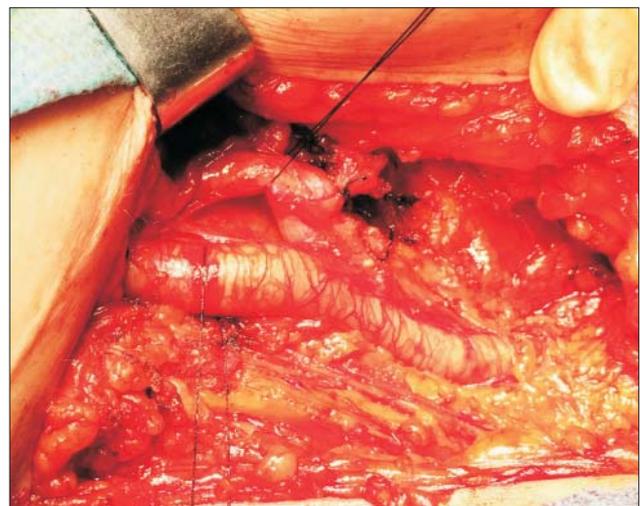
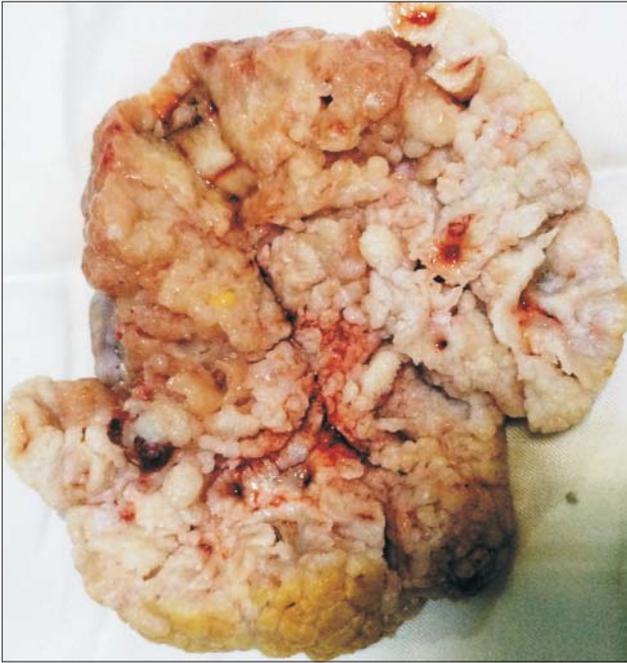
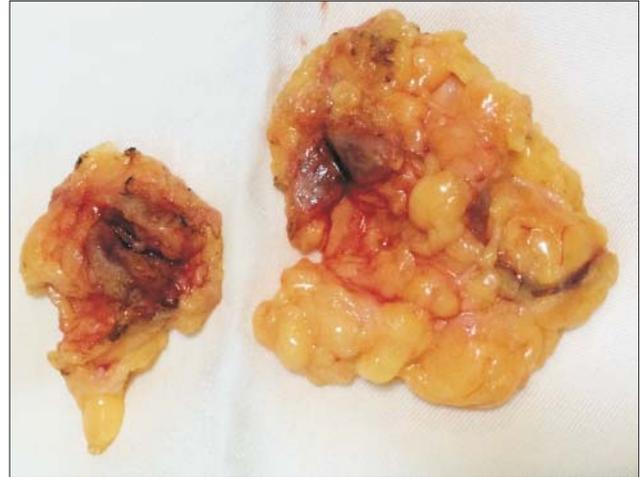


Figure 3 - Femoral artery and vein dissection



**Figure 4 - specimen of radical hemi-vulvectomy**

(gans/labial) subcompartment and the outer (interlabial) subcompartment. However, when it comes to radical vulvar resection the labia majora lateral to the interlabial sulci, the perineal body, the anal sphincter, and the anus except its anterior segment should be conserved. The labia majora is sharply dissected from the vulvar compartment along the smooth surface of Dartos stroma plan. The deep vulvar structures including the vestibular bulbs, corpus and crura of the clitoris, and greater vestibular glands should be included into the vulvar field resection whether the tumor has arisen from the vestibulum subcompartment, otherwise they should be preserved. In selected cases the authors sustain the idea that vulvar field resection might be extended by including the distal thirds of the vagina and urethra without impeding further anatomical reconstruction (7). In Hockel's study 38 patients treated on the principles of vulvar field resection: a partial vulvar field resection was performed in 21 cases, total vulvar field resection was performed in 7 cases while in other 10 cases extended resections including distal urethra, distal vagina or the anterior rectal wall were performed; inguinal lymph node dissection was associated in 33 cases. Reconstructive procedures including creation of muscular flaps were performed in all cases; however, in three patients flap necrosis occurred – in two cases per-secundam healing after minor re-interventions while in the third case an extensive debridement was needed. At a median observation time of 19 months three deaths occurred due to



**Figure 5 - removed inguinal lymph nodes**

regional or distant metastases in cases in which the initial diagnosis showed a pT3N2 or pT3N1 tumors. None of the patients treated with vulvar field resection developed local recurrence (7).

The same study concluded that the corpus and crura of the clitoris, vestibular bulb and the greater vestibular glands should be removed in cases presenting vulvar tumors originating from the inner vulvar subcompartment due to the common ontogenic origin in the derivatives of the superficial urogenital sinus. In selected cases presenting local invasion resection of the distal vagina or distal urethra leading to an extended vulvar field resection might be needed (7).

In their study, Weikela et al included 213 patients diagnosed with primary vulvar cancer; only in 13 cases the authors decided to perform a local excision of the tumor, in all the other cases extended resections being needed: hemivulvectomy was performed in 63 cases, radical vulvectomy was performed in 112 cases while in the other 25 cases more extended surgical procedures such as partial colpectomy or even pelvic exenteration were needed. The authors established a proportional correlation between the tumor surface, the dimension of the excised specimen and the type of reconstructive procedure. In 60% of patients direct closure of the defect was possible. Twothirds of the patients included in this study reported vulvar tumors larger than 2 cm which imposed an excision surface area of up to 4 cm<sup>2</sup>. In cases with tumor dimension larger than 2 cm a radical vulvectomy was the method of choice while pelvic exenterations and colpectomies were needed for very large tumors. When it comes to the choice of the most appropriate reconstructive procedure, local flaps were performed in up to 33% of cases submitted to radical vulvectomy while regional flaps were inserted in

28% of the patients who had undergone pelvic exenteration or colpectomy. Regional flaps were used in up to 70% of patients diagnosed with large surface tumor areas (larger than 16 cm<sup>2</sup>). When studying the early postoperative outcomes after direct wound closure and flap insertion, similar rates of complications were encountered; however, in both groups the healing process was significantly influenced by the presence of other systemic diseases such as diabetes mellitus, arterial hypertension or other cardio-vascular comorbidities. The same study concluded that although not statistically significant, the relapse rate was 10% lower in cases in which surgical reconstructions were performed. The overall 5-year survival rate was 69%, with a reported relapse-free survival rate of 55.7%. When studying the influence of the surface tumor excised area on the overall survival, a poorer outcome was reported for cases diagnosed with larger lesions (19).

## CONCLUSIONS

Current therapeutic options for tumors involving external female genital tract include radical resections based on ontogenetic principles of anatomy in order to provide a good local control of the disease. In cases presenting with large tumors a bilateral inguinal lymph node dissection should be applied to impede tumor spread via lymphatic channels; a more advanced lymph node dissection including pelvic lymph node should be performed only in selected cases with high probability of positive nodes. In cases diagnosed with large surface tumors in which a simple wound closure is not possible, surgical reconstructions using flap insertion might be needed. In our case, although a giant vulvar tumor was encountered, per-primam simple wound closure was possible due to a rather exophytic development of the tumor.

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