

# Survival rate and prognostic factors for patients who underwent surgical procedures for invasive carcinoma of the vulva in Serbia

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## Summary

**Objectives:** To determine five-year survival rate and prognostic factors for patients who underwent radical surgery for carcinoma of the vulva. **Material and Method:** 94 women were operated on from 1989 to 1996 at the Clinical Centre of Serbia. **Results:** Five-year survival was 78.56% for Stage I, 73.5% for Stage II, for Stage III - 14.28%, and for Stage IV - 7.14%. Five-year survival rate for tumor size between 2 cm and 5 cm was 57.14%, and for tumors larger than 5 cm, 28.57%. Five-year survival rate was 64.28% if no lymph nodes were involved, 21.43% if there were unilateral metastatic lymph nodes and 14.28% if bilateral lymph nodes had metastatic disease. Histologic grades of the tumor showed that for grade 1, five-year survival was 64.28%, for grade 2, 35.71% and there were no survivors five years after surgery among patients with grade 3 tumor. **Conclusion:** FIGO stage, size of tumor, lymph node involvement and grade of tumor are significant prognostic factors for survival of patients after surgery.

**Key words:** Carcinoma of the vulva; Prognostic factors; Five-year survival rate.

## Introduction

Vulvar carcinoma is a disease occurring in elderly women, with a peak incidence in the seventh decade of life [1]. Approximately 90% of vulvar cancers are of squamous origin, and the average age at diagnosis is about 65 years. Risk factors are advanced age, an immunocompromised status, longstanding vulvar dystrophy, VIN, a history of vulvar human papillomavirus infection, and a history of cervical cancer. Vulvar cancer should be detected in an early stage since it is localized on skin and therefore visible. However, because of patient and doctor delay, one in three vulvar cancers is not treated before an advanced stage. The tumor metastasizes mainly through the lymphatics. Spread starts in the inguinal lymph nodes. The presence of lymph node metastasis is the most important prognostic factor in vulvar cancer [7-14]. Patients with nodal metastases more than 50% have poor survival [9, 13-17].

Surgery is the primary treatment modality for vulvar cancer [4-6].

En bloc dissection of the vulva and inguinal lymph nodes has been the standard surgical procedure for treatment of vulvar cancer. As a result, considerably improved survival rates were achieved: up to 90% 5-year survival rates for patients without lymph node metastases [5-7, 9, 18]. However, complication rates were high. Wound breakdown is reported in up to 85% of patients and chronic edema of the legs in 30-70%. Genital prolapse or relaxation and vaginal stricture occur in 15-20% of

patients [1-3, 7-9, 19, 20]. In recent years, a more individualized approach has replaced the standard treatment. The most important modification in the surgical management of early stages of vulvar cancer has been the use of separate groin incisions for groin lymphadenectomy. Another modification has been the performance of a radical local excision rather than a radical vulvectomy for patients with primary tumors up to about 3 cm in diameter [1-3, 9, 21, 22, 25-28]. Surgical treatment now depends on the localization, size and extent of the tumor, and is followed or preceded by radiotherapy in selected cases. No difference in survival was observed between those managed by radical wide local excision and those managed by radical vulvectomy [9, 15, 21]. The most important success in the treatment of vulvar cancer in recent years has been the maintenance of high survival rates despite considerably less extensive surgical treatment, resulting in lower complications rates.

Vulvar cancer in Serbia is still seen as an advanced illness since no sufficient screening program has been developed and women often visit doctors with substantial delay. After being diagnosed with invasive vulvar carcinoma patients are referred to the Clinical Centre of Serbia treatment.

## Material and Methods

Data from the files of 94 patients with vulvar squamous cell carcinoma who were operated on at the Institute of Gynecology and Obstetrics, Clinical Centre of Serbia between January 1988 and December 1996 were evaluated. Several figures were analyzed: mean age at the time of diagnosis, presenting symptoms, stage of disease at the time of diagnosis, histology reports from the operation, and 5-year follow-up. We selected 94 patients who met the following criteria: (1) International Federation of

Gynecology and Obstetrics (FIGO) Stage Ib-IVa, (2) primary treatment - radical vulvectomy and bilateral groin dissection, (3) histology reports and (4) follow-up reports. Files were retrieved for retrospective analysis. By means of univariate analysis and multivariate analysis (Cox proportional hazards model) data were analyzed.

## Results

Mean age at diagnosis was 69 years. The most common presenting symptoms were vulvar ulcer and itching. Mean patient delay in seeking medical help was three years.

Five-year survival rate was 78.56% for Stage I, 73.5% for Stage II, 14.28% for Stage III and 7.14% for Stage IV (Table 1).

Table 1. — *Stage and five-year survival rate.*

Stage	5-year survival rate
I	78.56%
II	73.5%
III	14.28%
IV	7.14%

Five year survival rate for tumor size between 2 cm and 5 cm was 57.14% and 28.57% for tumors larger than 5 cm (Table 2).

Table 2. — *Tumor size and 5-year survival rate.*

Tumor size	5-year survival rate
2-5 cm	57.14%
> 5 cm	28.57%

Five-year survival rate was 64.28% if no lymph nodes were involved, 21.43% if there were unilateral metastatic lymph nodes and 14.28% if bilateral lymph nodes had metastatic disease (Table 3).

Table 3. — *Lymph node involvement and 5-year survival rate.*

Lymph node involvement	5-year survival rate
Negative	64.28%
Unilateral positive	21.43%
Bilateral positive	14.28%

Table 4. — *Histologic grade of tumor and 5-year survival rate.*

Histologic grade of tumor	5-year survival rate
1	64.28%
2	35.71%
3	0

Histologic grade of the tumor affected survival rate significantly: for grade 1 tumor, 5-year survival rate was 64.28% and for grade 2, 35.71%; there were no survivors after five years from operation among patients with grade 3 tumor.

By means of univariate analysis, a significant worsening in survival was demonstrated with advancing stage of disease ( $p < 0.001$ ), tumor  $> 5$  cm ( $p < 0.001$ ), and with respect to histology grade ( $p < 0.0001$ ).

In a multivariate analysis (Cox proportional hazards model) in the group of 94 patients, stage of disease was the strongest predictor of survival ( $p = 0.0098$ ).

## Discussion

Vulvar carcinoma is a disease occurring in elderly women, with a peak incidence in the seventh decade of life [1]. Approximately 90% of vulvar cancers are of squamous origin, and the average age at diagnosis is about 65 years. Risk factors are advanced age, immunocompromised status, longstanding vulvar dystrophy, VIN, a history of vulvar human papillomavirus infection, and a history of cervical cancer. Vulvar cancer should be detected in an early stage since it is localized on skin and therefore visible. However, because of patient and doctor delay, one in three vulvar cancers is not treated before advanced stage. The tumor metastasizes mainly through the lymphatics. Spread starts in the inguinal lymph nodes. The presence of lymph node metastasis is the most important prognostic factor in vulvar cancer [7-14]. In patients with nodal metastases more than 50% have poor survival [9, 13-17].

Surgery is the primary treatment modality for vulvar cancer [4-6].

Invasive vulvar cancer is still one of the leading problems in Serbia due to substantial delays in obtaining diagnosis and starting adequate treatment. Due to insufficient check-ups and economic problems (patients from distant parts of the country are referred to the Clinical Centre of Serbia in Belgrade) many patients are seen at advanced stages of the disease. They are often treated with radical vulvectomy with bilateral groin dissection. Triple incision technique of the vulva and inguinal lymph nodes has been the standard surgical procedure for treatment of vulvar cancer in Serbia as well. In our results from this retrospective analysis it is obvious that we have a significantly lower 5-year survival rate compared to numerous reports, especially for Stage I and II where we expected better survival figures. Even with en bloc operations which have been performed for years, the overall survival was up to 90% for patients without lymph node metastases [5-7, 9, 18]. Histologic grade of tumor significantly affects survival of patients and we found that 68% of tumors in Stage I were grade 3, which might be an explanation for the poorer survival rates than in most hospitals in the world. Biology of the tumor might be the most important prognostic factor apart from stage of disease. More studies have to be conducted in this part of Europe to determine whether there is a geographically specific pattern for carcinogenesis of vulvar cancer. Biological aggressiveness could be a reason for the unsatisfactory outcome of patients with vulvar cancer. Molecular technologies used for detecting micrometastasis could have an important place in detecting patients at risk for recurrence [28]. It is not likely that the surgical technique affected survival since there is no difference in the survival observed between those managed by radical wide local excision and those managed by radical vulvectomy

[9, 15, 21]. Regarding nodal involvement, our results are consistent with the literature data showing poor prognosis in patients with nodal metastases [9, 13-17]. Size of the tumor has also been evaluated and a significant poorer survival was demonstrated in tumors larger than 5 cm.

Since stage of disease was the strongest predictor of survival in our cases it is necessary to improve the survival of patients in Serbia by detecting and treating vulvar cancer in early stage.

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