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Case Report

Case Report: Radical Vulvectomy V-Y Flap Surgical Procedure in a Woman with Vulva Cancer

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ABSTRACT

Introduction: Vulva cancer is one of the relatively rare malignancies, accounting for only 4% of all malignancies in gynecologic organs. Vulva cancer is often asymptomatic. Surgery is the basic management in patients with earliest-stage vulvar cancer and frequently requires a combined radical vulvectomy followed by inguinal LN dissection through a separate incision. Therefore, the author hopes this case can add insight into the knowledge related to early detection and comprehensive management of vulva cancer.

Case Presentation: A woman, 67 years old, referred from Gambiran General Hospital Kediri with a vaginal biopsy result of vulva cancer, came to the Saiful Anwar General Hospital oncology clinic. The patient complained of pain in the pubic area accompanied by tissue growth around the pubic area since August 2023. History of weight loss (+) 10 kg in the past year. History of menopause since 18 years ago. The examination results obtained vital signs: BP 132/79 mmHg, pulse 128x/min, RR 20x/min, temperature 36.5C, height 155 cm, weight 40kg, and BMI 16.64 kg / m2 (underweight). Physical examination of external genitalia revealed a 12x8 cm mass on the right vulva, odour (+). The results of the vulvar biopsy examination on 25/08/2023 were found to be squamous cell carcinoma, well differentiated. The patient is planned for elective-wide excision. The management performed was radical vulvectomy with V-Y flap reconstruction surgery.

Conclusion: In this case, it can be concluded vulva cancer is a relatively rare malignancy. The subtype often found is SCC (90-95%). This patient planned for radical vulvectomy using the V-Y flap reconstruction technique with SAB.

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INTRODUCTION

Vulvar carcinoma or vulva cancer is a relatively rare malignancy, accounting for only 4% of all gynecological cancers. The most commonly encountered subtype is squamous cell carcinoma (SCC), which constitutes 90-95% of cases. There are several etiopathogenic pathways involved in the development of vulvar cancer, including those associated with HPV infection and pathways linked to skin conditions such as lichen sclerosus. These different pathways highlight the complex nature of the disease's onset and progression [1,2]. Vulva cancer is often asymptomatic in its early stages. Patients with vulva cancer may report persistent itching and vulvar pain or notice the presence of new growths or ulcers on the vulvar region. The definitive diagnostic procedure involves a tissue biopsy followed by histopathological examination. This thorough diagnostic approach is crucial for accurate identification and subsequent management of the condition, ensuring appropriate therapeutic interventions are administered in a timely manner [3].

Surgery serves as the fundamental treatment for patients with early-stage vulvar carcinoma. This often necessitates a combination of radical vulvectomy and inguinal lymph node dissection through separate incisions. In cases where the lesion is extensive, vulvar reconstruction using a flap is required to restore

anatomical structure and function. This comprehensive surgical approach underscores the importance of meticulous planning and execution to achieve optimal therapeutic outcomes and maintain the patient's quality of life [2,4]. Reconstructive surgery can yield favorable outcomes for patients with vulvar carcinoma, particularly in cases involving large tumors. Among the reconstructive techniques available, the V-Y flap is commonly employed. The V-Y flap is a local fasciocutaneous flap designed as a triangle, with its base aligned along the edge of the perineal defect and its apex reaching up to the gluteal fold. This flap is created by mobilizing adjacent skin and subcutaneous tissue to cover the primary defect or lesion. Post-operative care following a radical vulvectomy is essential, especially to prevent complications related to the surgical wound, flap, genitourinary system, and to address potential sexual and psychosocial dysfunctions. Routine post-operative management ensures proper healing and helps mitigate any adverse effects that could impact the patient's recovery and quality of life [2,4,5].

Vulvar carcinoma is a relatively rare malignancy compared to other gynecological cancers. Consequently, the author hopes that this case will contribute to enhancing knowledge regarding early detection and comprehensive management of vulvar carcinoma. By doing so, it aims to prevent mortality and morbidity in the treatment of similar cases in the future. This case study underscores the importance of awareness and education among healthcare professionals, which can lead to improved outcomes through timely and effective intervention.

CASE PRESENTATION

A woman, 67 years old, referred from Gambiran General Hospital Kediri with a vaginal biopsy result of vulva cancer, came to the Saiful Anwar General Hospital oncology clinic. The patient complained of pain in the pubic area accompanied by tissue growth around the pubic area. The patient complained of pubic pain since November 2022, when he had never been examined.

Investigation

The patient complained of pain and tissue growth in the pubic area since August 2023. History of weight loss (+) 10 kg in the past year. History of menopause since 18 years ago. The examination results obtained vital signs: BP 132/79 mmHg, pulse 128x/min, RR 20x/min, temperature 36.5C, height 155 cm, weight 40kg, and BMI 16.64 kg / m2 (underweight). Physical examination of external genitalia revealed a 12x8 cm mass on the right vulva, odour (+). Complete blood test results obtained Hb 7 g/dL. The results of the vulvar biopsy examination on 25/08/2023 were found to be squamous cell carcinoma, well differentiated.

Treatment

The patient is planned for elective-wide excision. The management performed was radical vulvectomy with V-Y flap reconstruction surgery. In the durante op, inguinal LN gland excision was also performed, and then the vulvar excision tissue and inguinal LN were sent for histoPA examination.

Outcomes and Follow-Up

From the examination of vulvar tissue and inguinal LN, the results showed keratinizing squamous cell carcinoma vulva and metastasis of 3 out of 5 LN. The patient was planned for EBRT adjuvant therapy after waiting for the results of the abdominal ultrasound examination scheduled for February 16, 2024.

DISCUSSION

Malignancies of the vulva most frequently occur on the skin of the labia. In contrast, cancers involving the clitoris and vestibular glands are exceedingly rare. This distribution pattern underscores the need for targeted vigilance and diagnostic scrutiny in the more commonly affected areas while still maintaining an awareness of the possibility, albeit low, of malignancies in the less commonly affected regions [5,6]. Vulvar carcinoma is a relatively rare malignancy, accounting for only 4% of all gynecological cancers. The most frequently encountered subtype is squamous cell carcinoma (SCC), comprising 90-95% of cases. Although typically considered a disease of postmenopausal women with a median age of 67, the average age of onset has declined in recent years due to the global rise in Human Papilloma Virus (HPV) infections. An epidemiological study across 13 developed countries reported an incidence rate of vulvar carcinoma at 14% [7,8].

Vulvar carcinoma is often asymptomatic initially. Patients may report persistent itching, vulvar pain, the appearance of new growths or ulcers on the vulva, vaginal bleeding, or discharge. In advanced stages, patients might notice lumps in the groin due to lymph node metastasis. A thorough medical history and physical examination are essential in assessing the size, number, position, mobility, infiltration, and margins of the lesions or new growths. Vaginal and rectal examinations (vaginal touche and rectal touche) can determine vaginal or rectal involvement. Palpation assesses lymph node involvement, particularly in the inguinofemoral region, evaluating size, mobility, and consistency [9,10]. Assessment of lymph node involvement in vulvar carcinoma primarily involves

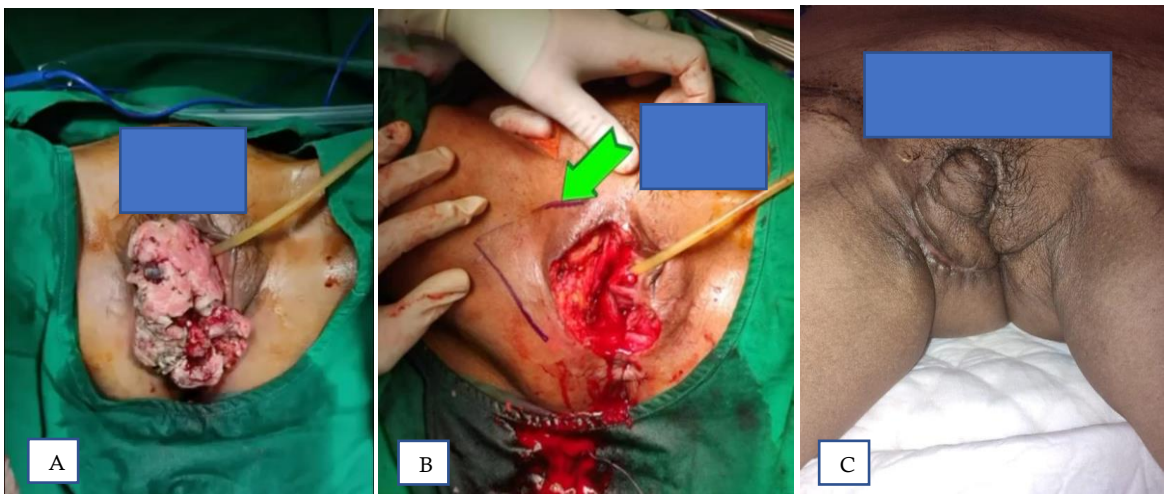

Fig. A. Clinical Examination of the Vulva before Surgery; **B.** Radical Vulvectomy with V-Y Flap Reconstruction Procedure in Patient Ended by Simple Interrupted Suture; **C.** The Clinical Examination Results at the Fourth Follow-up Demonstrated Excellent Outcomes of the Surgery Area.

physical palpation, which has a sensitivity of 9% preoperatively and 55% intraoperatively. Inguinal lymph node evaluation can also be performed using ultrasonography (USG), with sensitivity and specificity rates of 76.3% and 91.3%, respectively. If lymph node involvement is suspected, fine needle aspiration biopsy (FNAB) and cytological examination are conducted [3,11].

Reconstructive surgery can yield favorable outcomes for patients with vulvar cancer, particularly for large tumors. Optimal oncological outcomes and improved cosmetic results are expected with reconstruction. The duration of hospitalization and complication rates depend on the chosen reconstruction technique, such as the V-Y flap, rhomboid flap, or myocutaneous flap using the gluteus maximus muscle. Flaps involve transferring tissue from a donor site to a recipient site while maintaining blood supply. The donor site is where tissue is harvested for transplantation, and the recipient site is where the graft/transplant material is placed [2,4].

Vulvar reconstruction using a V-Y flap can be performed in such cases. Anesthesia is administered via subarachnoid block (SAB). The V-Y flap is a local fasciocutaneous flap formed in a triangular shape with its base along the edge of the perineal defect and its apex extending to the gluteal fold. It involves transferring adjacent subcutaneous tissue to cover the primary defect or lesion. The "V" represents the V-shaped incision made around the skin to be moved over the primary vulvar defect, while the "Y" denotes how the skin is closed/sewn. V-Y flap is considered relatively safe due to its extensive vascular supply. Within 3-6 months post-operation, the surgical scar may appear erythematous and edematous [12,13].

The rhomboid flap is a cutaneous flap applicable to moderate-sized vulvar defects where surgical closure might alter the shape of the skin. It's relatively easy to apply and inspired by lateral transposition flaps. The rhomboid flap maintains uniform dimensions on all sides. The myocutaneous flap or gluteal thigh flap is a transposition flap located on the mid-posterior axis of the femoral region. It's relatively safe due to the axial vascularization from the inferior gluteal artery. The mid-posterior femoral region is predominantly vascularized by this artery, facilitating the creation of flaps up to 20 cm in length [14].

The use of occlusive dressings is deemed to expedite reepithelialization and wound healing by creating a moist environment around the wound. Occlusive dressings also reduce surgical wound complications such as redness, swelling, and crust formation. Currently, vacuum-assisted closure (VAC) or negative pressure dressing is being routinely employed for post-operative perineum and vulva recovery after radical excision. VAC dressing reduces wound healing time and increases granulation tissue deposition. However, its use may be compromised by the risk of contamination with feces and urine. Solutions include urinary catheterization, anti-motility drugs (Imodium, codeine), and rectal tube usage to minimize wound contamination. Additionally, waterproof dressings (duoderm) can be utilized beneath the VAC adhesive layer [15].

Several studies recommend post-operative vitamin supplementation, including vitamin C, which has been found to effectively reduce post-operative pain scores at various intervals. Vitamin C serves as an antioxidant, aids in hormone and enzyme biosynthesis, and enhances iron absorption. Being water-soluble with low toxicity,

it shows promise as an adjunct to conventional analgesics. Additionally, vitamin C contributes to platelet aggregation and prevents platelet count decline during hemostasis. Patients with plasma vitamin C concentrations <0.6 mg/dL may experience spontaneous bleeding due to vascular integrity damage from collagen formation defects [16].

CONCLUSION

In this case, it can be concluded: (1) Vulva cancer is a relatively rare malignancy. The subtype often found is SCC (90-95%). This type of cancer is commonly associated with postmenopausal women, typically around the age of 67 years; (2) The diagnosis of Vulva cancer in the patient was based on anamnesis (pubic pain accompanied by tissue growth), physical examination (a mass measuring 12 cm x 8 cm on the left vulva and smelling), and supporting examination (biopsy and well-differentiated SCC results); (3) This patient was then planned for elective surgery. Radical vulvectomy using V-Y flap reconstruction technique with SAB; (4) Routine wound care recommendations are using dressings, a urinary catheter, hyperbaric oxygen therapy, adequate inguinal drainage, and vitamin C supplementation; (5) Complications that can occur after radical vulvectomy surgery include complications from the surgical wound, flap, genitourinary system, and sexual and psychosocial dysfunction.

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CONFLICT OF INTEREST

The authors declare there is no conflict of interest.

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