CASE REPORT

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Diagnosis and management of grade IV pelvic organ prolapse with stage II vaginal carcinoma: a case report

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ABSTRACT

Aim: This case report aimed to illustrate the diagnosis and management of a rare case of grade IV pelvic organ prolapse (POP) and stage II vaginal carcinoma.

Background: Pelvic organ prolapse is common in older women, with its prevalence peaking at 5% in women aged 60-69. Long-term prolapse may increase the risk of malignant transformation. Vaginal carcinoma, accounting for 1-3% of gynecological cancers, is rare, and its occurrence alongside pelvic organ prolapse is exceptionally uncommon.

Case Report: A 77-year-old woman presented with discomfort due to a vaginal mass for 10 years. She was diagnosed with grade IV uterine prolapse, grade IV cystocele, and stage II vaginal carcinoma. The patient underwent transvaginal hysterectomy, anterior colporrhaphy, colpoperineorrhaphy, and bilateral inguinal lymphadenectomy. Histopathological examination revealed keratinizing squamous cell carcinoma (Grade 2, pT1 pN0 pMx).

Conclusions: Clinicians should consider vaginal carcinoma in patients with pelvic organ prolapse presenting with vaginal masses or bleeding. The Pelvic Organ Prolapse Quantification (POP-Q) system is recommended for prolapse assessment, while vaginal carcinoma staging follows the FIGO system. Surgical intervention is the primary treatment for advanced prolapse with symptoms. Early detection of vaginal carcinoma in prolapse cases can improve management and outcomes.

Clinical Significance: Vaginal carcinoma associated with pelvic organ prolapse is rare, and no standardized guidelines exist for the diagnosis and management of this complex condition.

Keywords: Pelvic organ prolapse, vaginal cancer, vaginal mass, vaginal bleeding.
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INTRODUCTION

Pelvic organ prolapse (POP) is a common benign condition in females that can cause vaginal bulging, urinary dysfunction, bowel movement dysfunction, and sexual dysfunction, which significantly impacts quality of life. The prevalence of POP increases with age, reaching 5% in women aged 60-69 years. The number of women with POP is predicted to rise by 46% to 4.9 million by 2050.[1-3] However, a review showed that the prevalence of POP based on recorded symptoms (3-6%) is much lower than the prevalence found by clinical analysis (41%-50%).[4]

The causes of POP are multifactorial, with pregnancy being the most common risk factor. Pelvic support is primarily provided by the levator ani muscle and connective tissue attached to the sidewalls of the vagina and pelvis. When weakened, the levator ani muscle becomes more vertical, and the vagina widens, shifting support to the connective tissue. Biomechanical studies show that the levator ani muscle is stretched by over 200% during the second stage of labor, exceeding the threshold for strain injury.[1] Risk factors for POP symptoms include parity, vaginal delivery, age, obesity, connective tissue disorders, menopause, and chronic constipation. Modifiable risk factors, such as obesity and constipation, should be addressed during health visits as managing these factors can reduce the risk of POP.[4]

Current recommendations classify prolapse sites into the anterior vaginal wall, posterior vaginal wall, and vaginal apex (apical prolapse). Apical prolapse is sometimes referred to as uterine or cervical prolapse if these structures are involved.[1] The International Continence Society/ International Urogynecology Association Pelvic Organ Prolapse Quantification (POP-Q) system is used for assessing the degree of prolapse.[5]

In cases of long-term pelvic organ prolapse or prolonged pessary use, neoplastic changes may occur due to the thin walls of the vagina, which is more common in postmenopausal women.[2] Chronic mechanical irritation caused by uterine prolapse is a known risk factor, and patients with vaginal carcinoma complicating uterine prolapse often have a history of prolapse lasting over 10 years, with some cases exceeding 30 years.[2] Wang et al. recommend performing a preoperative biopsy on ulcerations induced by pelvic organ prolapse to exclude vaginal carcinoma.[6] Kim et al. also suggest that if epithelial changes or ulcers are suspected of being vaginal carcinoma, a preoperative biopsy is necessary. It is crucial to treat

patients with long-standing uterine prolapse with caution due to the potential for malignant changes. Comprehensive testing for malignant lesions before surgery is recommended.[7]

Vaginal carcinoma, although extremely rare, coexists with POP in 13.6% to 16.3% of all vaginal cancers in elderly women.[3] Primary vaginal cancer is uncommon, accounting for 1-2% of all genital malignancies in women, with the incidence peaking between 60 and 80 years of age. The tumor typically appears on the posterior wall of the upper third of the vagina. To date, only 10 cases have been reported of primary vaginal cancer complicated by uterine prolapse.[6]

Vaginal carcinoma is a malignancy that originates in the vagina, not from other organs such as the cervix, uterus, or ovaries.[2] The prevalence of primary vaginal carcinoma is very low (approximately 0.6 per 100,000 women) and constitutes about 1% of genital malignancies.[2] Approximately 1 in 100,000 women are diagnosed with either in situ or invasive vaginal cancer, typically of squamous cell histology.[8] Squamous cell carcinoma accounts for over 95% of vaginal carcinoma cases and is most often found in the upper third of the vagina.[9]

Common risk factors for vaginal carcinoma include age (over two-thirds of patients are 60 years or older), smoking, HPV infection, HIV infection, exposure to diethylstilbestrol (DES) during fetal development (if the mother used DES during pregnancy), vaginal adenosis, vaginal irritation, uterine prolapse, previous cervical dysplasia, or invasive lesions.[2]

There are two classification systems for vaginal carcinoma based on the International Federation of Gynecology and Obstetrics (FIGO)[10] and the American Joint Commission on Cancer (AJCC).[11] The stages for primary vaginal carcinoma are as follows: Stage 0 (in situ) 96%, Stage I 73%, Stage II 58%, and Stages III and IV 36%.[10]

For squamous cell carcinoma of the vagina, radiation therapy is the primary treatment for most Stage I cancers. In certain cases, partial or radical vaginectomy may be performed. Reconstructive surgery can create a new vagina after significant tissue removal. Lesions on the posterior wall generally have a worse prognosis. In the case of upper vaginal involvement, radical hysterectomy, bilateral pelvic lymph node dissection, or radical/partial vaginectomy may be necessary. Postoperative radiation can treat small deposits of cancer cells that have spread to pelvic lymph nodes. For Stage II, III, and IV cancers, combined radiotherapy and chemotherapy are typically used. The 5-year survival rate is 70-80% for Stage I, compared to 35-50%, 35%, and 20% for Stages II, III, and IV, respectively.[6]

Here, we present a rare case of grade IV uterine prolapse with Stage II vaginal carcinoma diagnosed and managed at Sanglah General Hospital Denpasar.

CASE REPORT

A 77-year-old woman presented to the Obstetrics and Gynecology Polyclinic of Sanglah General Hospital, Denpasar, with complaints of vaginal lumps for the past 10 years and discomfort with vaginal bleeding since April 2019. She denied a history of vaginal discharge or an enlarged abdomen. She had a history of 11 pregnancies, 9 live births with spontaneous deliveries, and 2 abortions.

Physical examination revealed a cauliflower-shaped mass on the left vaginal wall, measuring 6x6 cm, which was fragile and prone to bleeding. Pelvic examination showed no mass or cancerous invasion in the adnexa or parametrium.

Laboratory tests showed: White Blood Cells (WBC) 8.91 x 10^3/µL, Hemoglobin (HGB) 11.07 g/dL, Hematocrit (HCT) 36.77%, Platelets (PLT) 375.60 x 10^3/µL, SGOT 19.9 U/L, SGPT 11.50 U/L, Albumin 4.00 g/dL, Random Blood Glucose 103 mg/dL, BUN 14.90 mg/dL, Creatinine 1.26 mg/dL, Sodium 136 mmol/L, and Potassium 3.9 mmol/L. Histopathological examination confirmed squamous cell carcinoma. Based on the clinical and diagnostic findings, the patient was diagnosed with grade IV uterine prolapse, grade IV cystocele, and Stage II vaginal carcinoma.

The patient was treated with transvaginal hysterectomy, anterior colporrhaphy, colpoperineorrhaphy, and bilateral inguinal lymphadenectomy. The surgery began with an inverted "V" incision, followed by dissection of the sacrouterine ligaments, parametrium, tubal complex, and round ligaments, which were clamped, cut, and tied. Retroperitonealization was performed, followed by anterior colporrhaphy and colpoperineorrhaphy. Bilateral inguinal lymphadenectomy was performed subsequently. The vaginal, uterine, and adnexal tissues were examined for histopathology. Post-surgical diagnosis confirmed grade IV uterine prolapse, grade IV cystocele, and Stage II vaginal carcinoma after transvaginal hysterectomy, anterior colporrhaphy, colpoperineorrhaphy, and bilateral inguinal lymphadenectomy.

Histopathological examination of the tissues revealed keratinizing squamous cell carcinoma, Grade 2 (pT1 pN0 pMx), negative paravaginal invasion, positive intravascular invasion, and negative vaginal resection margin.

DISCUSSION

Our patient, a 77-year-old woman, presented with a vaginal lump and post-menopausal vaginal bleeding. According to the POP-Q system, she was diagnosed with grade IV uterine prolapse, defined by complete eversion of the entire length of the lower genital tract. This diagnosis aligns with the classification by Friedman and Little (1961), where Grade III uterine prolapse involves complete expulsion of the uterus with inversion.[8,9]

Primary vaginal carcinoma is rare and less frequently associated with grade III uterovaginal prolapse. It accounts for 1-2% of all gynecological malignancies, with peak incidence at age 60. Squamous cell carcinoma of the vagina is the most common type, and its risk factors include age over 60 and the increasing prevalence of POP in women aged 60-69.[9] Symptoms of vaginal carcinoma typically include post-menopausal bleeding, vaginal mass, and local extension to adjacent organs, with urinary and gastrointestinal symptoms. Pelvic pain due to carcinoma extension occurs in 5% of cases.[10]

The FIGO and AJCC staging systems are used to classify vaginal carcinoma.[10,11] The patient's diagnosis was confirmed as Stage II vaginal carcinoma (FIGO classification), which involves sub-vaginal tissue without extending to the pelvic

wall.[11]

This patient underwent transvaginal hysterectomy, anterior colporrhaphy, colpoperineorrhaphy, and bilateral inguinal lymphadenectomy. Advanced vaginal carcinoma is not usually amenable to surgery alone, and chemoradiation is the preferred treatment for stages III and IV, especially in large tumors. Surgery is typically reserved for patients with early-stage disease, as achieving negative margins is challenging in larger tumors without causing damage to surrounding structures.[12]

The prognosis for vaginal carcinoma is heavily influenced by the stage at diagnosis. Data from the US National Cancer Database show that mortality risk increases in Stage II or higher disease, with a 5-year survival rate of 65% for tumors > 4 cm in size compared to 84% for tumors ≤ 4 cm.[12]

CONCLUSION

Pelvic organ prolapse with vaginal carcinoma is extremely rare. Vaginal lesions in uterine prolapse should be thoroughly evaluated to rule out carcinoma. Primary vaginal carcinoma has a poor prognosis, and managing patients with long-standing uterine prolapse requires careful consideration of the potential for malignant transformation.

CLINICAL SIGNIFICANCE

Vaginal carcinoma associated with pelvic organ prolapse is a very rare and complex case. No standardized guidelines exist for the diagnosis and management of this condition, emphasizing the need for individualized patient care.

ETHICAL CONSIDERATIONS

The authors stated that this article corresponds to the hospital research protocol and the inform consent has been obtained from the patient.

DECLARATION OF CONFLICTING INTERESTS

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AUTHOR CONTRIBUTIONS

All authors contributed to data gathering, analysis, drafting, and revising and approving the article regarding this research to be published.

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