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Laparoscopic Vaginectomy for Post-Laparoscopic Hysterectomy Recurrence of Vaginal Malignant Melanoma

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Abstract

Malignant melanoma of the female genital tract is rare and has a poor prognosis. The aim of surgical treatment for these cancers is maximal removal to optimize survival. However, pelvic excision can be severely disruptive to quality of life and postoperatively patient prognoses are far from good. A better prognosis has been associated with tumors that are removed when they are smaller than 3 cm. The application of minimally invasive techniques has reduced the negative impacts of excision operations. A treatment plan consisting of laparoscopic vaginectomy together with molecularly targeted drug therapy may improve vaginal malignant melanoma outcomes.

Keywords: Vaginal malignant melanoma; Laparoscopic vaginectomy; Molecular target drugs; Tumor size

Introduction

Malignant melanomas, which occur primarily on the skin and mucosal membranes, are relatively rare, but have a very poor prognosis. Primary malignant melanomas affecting the female genital tract are particularly rare, accounting for only 3% of all diagnosed malignant melanomas [1]. Early diagnosis of this neoplasm is difficult. The first symptoms of female genital tract melanomas are usually vaginal bleeding and discharge. Even at advanced stages, surgery is the preferred first-line treatment for malignant melanomas of the vagina or vulva. However, postoperative outcomes are unsatisfactory, with low reported 5-year overall survival rates of vaginal malignant melanomas (range, 0% to 25%) being attributed to the difficulty associated with achieving local control and a high rate of distant metastasis [2]. Furthermore, invasive operations, which may involve radical pelvic exenteration, can have a severe and permanent impact on the patients' quality of life. On the other hand, primary chemotherapy and radiotherapy are not recommended because these treatments have, thus far, not improved recurrence or survival rates in this patient population [3]. Adjuvant radiotherapy and chemotherapy have been performed, but have not yielded good prognoses. Recently, molecularly targeted drugs for the treatment of vaginal malignant melanoma have become available. To minimize negative treatment impacts on quality of life, it has been suggested that these patients, even in advanced disease stages, be treated with a combination of appropriate limited surgery with adjuvant molecularly targeted pharmacotherapy.

Discussion

Although no standard therapy for vaginal malignant melanomas has been established, surgical resection, when possible, has remained the principal treatment offered due to melanoma resistance to radiation therapy and chemotherapy. In many cases, because vaginal malignant melanoma is diagnosed at an advanced stage, the surgical plan offered is highly invasive, including radical pelvic exenteration. Some clinicians have reported 5-year survival rate of 50% in patients treated with pelvic exenteration [4,5]. However, radical pelvic exenteration has not been shown to have better results than more conservative operations with less severe effects on patient quality of life [6]. Local resection with wide margins followed by radiotherapy may be appropriate for resectable tumors; when such local excision cannot be completed, and pelvic exenteration is often recommended. Early detection followed by rapid curative intervention is required for a good prognosis. However, affected patients, generally, do not experience pain in early stages of the disease and women may be dismissive of the symptom of vaginal bleeding. The risk of vaginal malignant melanoma recurrence is high. Thus, following melanoma resection, especially a limited resection, patients should be followed with routine pelvic examinations and vaginal cytoscreening, and should be attentive to the symptom of easy bleeding. Huang et al. [7] reported that a neoadjuvant/adjuvant anti-PD-1 therapy

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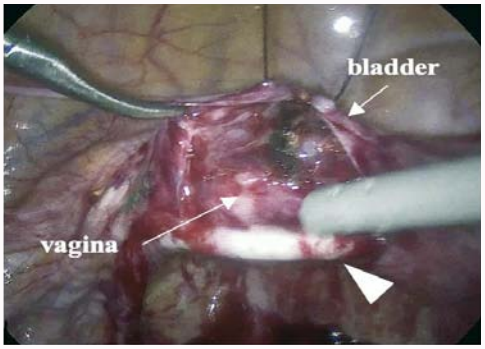

Figure 1: Opening vesicovaginal space, using a metallic spatula (arrowhead).

was a feasible treatment option for advanced and resectable malignant melanoma. They demonstrated that anti-PD-1 therapy was effective in stage IIIB/C and IV melanoma, with a 63% disease-free survival rate and a 93% 2-year overall survival rate. The recent introduction of molecularly targeted drugs including MEK inhibitors and BRAF inhibitors, have caused a paradigm shift, bringing about the option of minimally invasive surgery combined with adjuvant molecularly targeted drug therapy as a treatment option for vaginal malignant melanoma. Prior to the introduction of molecularly targeted agents, laparoscopic vaginectomy was considered suitable only for early-stage vaginal cancers [8]. Laparoscopic surgery provides an advantage over the traditional vaginal approach in that it enables appropriate layer identification, even in anatomy distorted by a previous hysterectomy, because it enables deep visualization into the vesicouterine and rectouterine pouches. Layer dissection is more easily achieved with laparoscopy than with a vaginal approach, thereby reducing the risk of major potential combination of vaginectomy, including urinary tract/bladder and rectal injury [9-12]. In the laparoscopic operation, the anterior and posterior vaginal walls are separated from the bladder and rectum with a suction tube and bipolar coagulator. The anterior layer is moved down into the vesicovaginal space, beyond the trigone, to the level of the external urethral orifice, while use of a metallic spatula helps to avoid urethral and bladder injury (Figure 1). The rectovaginal space is opened similarly with a metallic spatula and endorectal probe to the level of the anus, thereby avoiding rectal injury. Techniques generally used in laparoscopic sacrocolpopexy can be applied in vaginectomy. Finally, the vaginal canal and paravaginal tissues are removed *en* bloc via incision of the right and left sides of the vagina, and use of a vessel sealer, after urinary stent placement to avoid ureteral injury.

Conclusion

Optimal surgical removal of malignant lesions is associated with improved clinical outcomes. A small presurgical vaginal tumor size (<3 cm) has been reported to be the most predictive factor for survival. Early detection of vaginal malignant melanomas and the use of laparoscopic, minimally invasive vaginectomies performed in the context of adjuvant molecularly targeted pharmacotherapy can enable improved outcomes for patients diagnosed with vaginal malignant melanoma.

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