


CASE REPORT

Vulvar intraepithelial neoplasia treated with a combination of surgical excision and laser ablation during pregnancy

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Key Clinical Message

Most vulvar intraepithelial neoplasias are associated with human papillomavirus. However, detailed surgical plans during pregnancy are rarely discussed. We suggest that the treatment policy should focus on performing surgical excision on multifocal lesions, combined surgical excision/laser ablation on single lesions, and preserving unaffected perineal skin, if possible.

KEYWORDS

laser ablation, surgical excision, vaginal delivery, vulvar high-grade squamous intraepithelial lesions, vulvar intraepithelial neoplasia

1 | INTRODUCTION

Most vulvar intraepithelial neoplasias in young women are associated with human papillomavirus (HPV; most commonly, type 16). Vulvar high-grade squamous intraepithelial lesions (vulvar HSIL) have a potential risk of developing into invasive cancer. Despite the spontaneous regression in most cases, aggressive treatment for vulvar HSIL is encouraged.¹ Disease management during pregnancy and in non-gravid women is deemed to be similar;² however, detailed surgical plans and the feasibility of vaginal delivery after excision are rarely discussed. Herein, we present a case of vulvar HSIL treated via combined surgical excision and laser ablation during pregnancy prior to successful vaginal delivery.

2 | CASE EXAMINATION

A 26-year-old primipara woman was admitted for multiple papular vulvar lesions at gestational week 6. She previously complained of brown papular lesions and biopsy indicated

vulvar HSIL (Bowenoid papulosis); histological staining of the neoplastic cells was positive for p16 immunostaining. Cryosurgery was unsuccessful and cervical cytology revealed atypical squamous cells that cannot exclude HSIL. Biopsy under colposcopy indicated cervical intraepithelial neoplasia grade 2.

At admission, vulvar lesions were discontinuously distributed throughout the perineum, with both sides comprising multifocal and multiple single lesions (Figure 1A). Thus, 5% imiquimod cream was administered for 6 weeks; however, the patient complained of pruritus and pain with no obvious regression. Therefore, combined surgical excision and laser ablation were performed under lumbar anesthesia at gestational week 13. To avoid skin deficits on the perineum that cause infection and bacteremia in pregnancy, excisions were performed on three parts of the vulva with 5-mm free margins, which are smaller than recommended margins (>10 mm). The specimens were obtained from multifocal and confluent lesions. Carbon dioxide laser ablation was performed on all single lesions throughout the dermis and subcutaneous fat in hair-bearing areas (Figure 1B). Histopathologically, atypical squamous cells with hyperkeratosis were observed

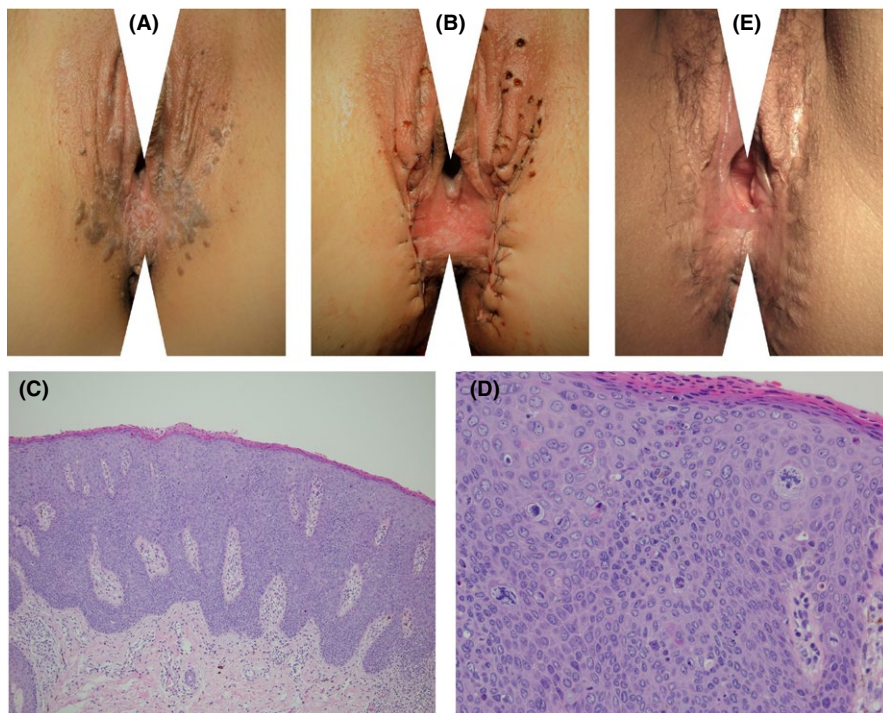


FIGURE 1 Clinical and histopathological appearance of the vulvar lesions. A, Bilateral vulvar lesions consisted of multifocal lesions and multiple single lesions. B, Surgical excision and laser ablation were performed. C, Histopathological examinations revealed atypical squamous cells with hyperkeratosis throughout the epidermis (hematoxylin and eosin stains; magnification 4 \times). D, Clumping of cells and cell nucleus division were identified in the epidermis (hematoxylin and eosin stains; magnification 10 \times). E, One year after the surgery, no recurrent lesions were observed

throughout the epidermis (Figure 1C). Clumping of cells and cell nucleus division were also identified (Figure 1D), consistent with Bowenoid papulosis.

Expectant management was selected for the cervical intraepithelial neoplasia, and cervical cytology revealed HSIL at gestational week 26. At gestational week 31, three single anogenital warts (0.2–0.3 cm) were excised; pathology revealed condyloma acuminatum. Thereafter, the pregnancy was uneventful with no recurrence of warts. At gestational week 41, bilateral episiotomy was performed during labor and a healthy baby was spontaneously delivered without additional vaginal tears. The patient had a good postpartum clinical course. One year after surgery, no recurrent lesions were identified (Figure 1E). Cervical cytology was negative for intraepithelial lesion or malignancy, and high-risk HPV DNA test was negative.

3 | DISCUSSION

Although the risk of vulvar HSILs developing into occult invasive cancer is low (3%),³ patients with larger lesions may have a higher risk of developing malignant lesions.^{4,5} In such cases, aggressive treatment is necessary. Clinical clearance of cryosurgery for Bowen's disease (BD) is approximately 60%, and cryosurgery's effectiveness in Bowenoid papulosis is considered equivalent to that in BD because of their similar pathological characteristics. Small single lesions might have a higher clearance rate. Additionally, the technique and insufficient freezing time may affect cryosurgery's efficacy on large multifocal or

continuous lesions. Conversely, 5% imiquimod cream promotes antitumoral activity via adaptive immune system activation. Success rates for various lesions have been reported to range from 76.3% to 88.0%.^{6–8} However, the safety of long-term imiquimod use during pregnancy is unknown. Contrary to expectation, 6 weeks of imiquimod did not show regression in this case. Additionally, laser ablation has a reported recurrence rate of 12.5%–45.0%.^{4,9} The distribution and location of lesions may also affect the clearance rate; perianal lesions might have a poor response.¹⁰ Therefore, in similar cases, we suggest that treatment policy should focus on performing surgical excision on multifocal lesions, combined surgical excision/laser ablation on single lesions, and preserving unaffected perineal skin, if possible.

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CONFLICT OF INTEREST

The authors have no conflict of interests relevant to this article.

AUTHORSHIP

LW, AK, AK, and AT: were involved in the management of the patient. LW and KK: involved in manuscript writing.

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