Surgical management of recurrent vaginal obliteration due to severe erosive lichen planus

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Abstract

Erosive vulvovaginal lichen planus is usually treated medically with steroids and immunosuppressants. Surgery is indicated if vaginal scarring leads to labial fusion causing urethral obstruction or vaginal obliteration but carries a high risk of recurrence. We present a lady who presented with urethral obstruction due to recurrent vaginal obliteration after previous surgical division of labial agglutination. Vaginoplasty was performed to restore the vaginal orifice and included the use of sodium carboxymethylcellulose antiadhesion gel with a vaginal mould. A strict post-operative regime of topical anti-adhesion gel and topical steroids with regular vaginal dilator usage contributed to sustained results at one year

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Running Head: Surgical management of severe lichen planus

The authors confirm that this manuscript is not under consideration elsewhere and has not been published before.

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[100 words]

Erosive Lichen Planus

Lichen planus is a chronic T-cell mediated inflammatory condition primarily affecting the mucosal surfaces such as the oral mucosa and the anogenital region [1]. Vulvar lichen planus may present with multiple morphologies with the most common being the erosive subtype [85%] [2,3] and carries a 2-3% risk of malignant progression[4-6]. This subtype presents with white, "lacy" edged erosions of symmetrical distribution extending from the fourchette to the anterior vestibule also known as Wickham's striae. Frequent symptoms include soreness, pain and dyspareunia. If untreated, it may result in vulvovaginal synechiae formation, clitoral and urethral burying and eventually vaginal stenosis[5,7-10]. Treatment typically most often involves topical treatment including the use of very potent topical steroids such as clobetasol proprionate & tacrolimus followed by systemic steroids or immunosuppressants such as a hydroxychloroquine, methotrexate[11-16] or mycophenolate mofetil[17] with controversy over the appropriate management If there is significant vaginal stenosis affecting sexual function and micturition [9,18,19].

Patient Background

We present a 62-year-old lady with a seven-year history of severe erosive lichen planus. She first presented with vulvar itching but was found to have oral manifestations as well. A diagnosis of orogenital lichen planus was then confirmed on vulvar and buccal biopsies. The vaginal disease progressed to labial agglutination and vaginal scarring despite topical clobetasol propionate 0.05% ointment, topical tacrolimus, oral hydroxychloroquine, topical oestrogen and high dose prednisolone. Over a period of four years, her introital opening narrowed to a diameter of 1cm due to worsening scarring and surgical division was performed. While she continued medical treatment, she did not comply with post-operative vaginal dilator usage. Labial fusion was noted to recur within six months and by 18 months post-operative, the vagina was obliterated to a 2mm with burying of the urethra opening despite escalation to systemic mycophenolate [Figure 1]. Pre-operative magnetic resonance imaging revealed an obliterated lower third of the vagina with accumulated cervico-vaginal fluid. Vulvoscopy did not demonstrate any high-grade lesions. The patient now complained of voiding difficulties with a poor stream and related hygiene issues. She consented for an examination under anaesthesia and a vaginoplasty with goal towards dividing vaginal adhesions and restoring her vaginal anatomy.

Surgical Management

Examination under general anaesthesia was performed in a lithotomy position. Thick labial adhesions made identification of dissection planes challenging. A finger was placed in the rectum to delineate its relative position and avoid inadvertent injury. A mixture of blunt and sharp dissection with gentle probing using a Size 3 Hegar dilator was utilised to first open the vestibule [Figure 2]. Once the urethra was revealed, it was cannulated with a two-way 16 french Foley catheter [Figure 3]. The vaginal orifice was then opened and stretched with two parallel Sims speculums to a width of 4cm, releasing accumulated cervico-vaginal secretions. The cervix was visualised and cannulated with Hegar dilators to demonstrate uterovaginal continuity and endometrial curettage was performed to exclude intrauterine pathology. An anti-adhesion gel consisting of sodium hyaluronate and sodium carboxymethylcellulose [Guardix Sol®, Genewal Co, South Korea] was applied to the raw surfaces of the introitus. A vaginal mould was fashioned using sterile foam obtained from a negative pressure wound therapy set. This was sheathed by 2 condoms to give it shape [Figure 4]. This was also covered in the same antiadhesion gel and secured with a gamgee tissue for three days before being removed prior to inpatient discharge.

Post-Operative

Post-operatively, a vaginal dilator was used four times daily for one month [Figure 6] along with intravaginal instillation of 300mg of 10% hydrocortisone acetate foam [Colifoam®, MEDA Pharmaceuticals Pty Ltd, St. Leonards, New South Wales, Australia] and topical application of triamcinolone cream and anti-adhesion gel.Vaginal dilator usage was progressively reduced to twice daily at one month and once daily at two months [Figure 5] with continued daily hydrocortisone foam application. Triamcinolone cream and anti-adhesion gel application was stopped at two months. Regular sexual intercourse with her partner was encouraged.

This patient continues with medical treatment and has been followed up for more than 1 year [Figure 6]. There is continued patency with a vaginal width of 4cm and length of 7cm and no recurrence of labial agglutinations, scarring or urinary complaints.

Conclusion

The mainstay of management of lichen planus is medical management as surgery carries a significant risk of recurrence and Koebnerisation as was seen in this patient after the first attempt at surgical division. Surgical management, nevertheless, is still need when there is severe scarring despite systemic immunosuppression leading to obliteration of the interoital opening or if here is urethral obstruction and should only be done after any acute inflammation has been supressed.

Additionally, the reinforcement of a strict post-operative plan which should comprise a mix of topical steroids as well as a mechanical dilation and sexual intercourse is crucial for sustained results.[9,18]

There have been no case reports published on the role of new anti-adhesion barriers in the prevention of vaginal scarring although it has been used in some centres for the prevention of intra-uterine adhesions after hysteroscopic procedures[20]. More studies should be performed if there is a role in the prevention of recurrent postoperative labial adhesions after surgical division.

[854 words]

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Contribution to authorship:

AK was involved in the care of this patient and wrote this manuscript

IIDP and NY contributed significant to outpatient, intraoperative and postoperative care of this patient

JJHL was the first surgeon and conceptualised the solution for this patient

IIDP, NY and JJHL critically reviewed this manuscript

Details of ethics approval: Informed consent was obtained from the patient for the publication of her case as well as associated images and video

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