Case Report

Laser-induced synlabia, cryptomenorrhea, and urine retention: A case report and literature review

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Abstract

Cosmetic laser use has many pros and cons. The worldwide use of laser for body hair removal has led to many medical complications. Unsupervised use of the laser for hair removal in vulva may result in many problems and can merely damage the vulva, although rarely, affecting the body image. This rare and novel case report is a 21 year old virgin who presented with acute urinary retention and cryptomenorrhea due to complete synlabia secondary to unsupervised vulval laser hair removal. The urinary retention was relieved by suprapubic catheterization initially. During examination under anesthesia, the fused labia were separated by a surgical incision with drainage of hematocolpos and then, a Foley's urethral catheter was inserted. She had an uneventful recovery. We report this case to emphasize on the supervised use of laser by trained and qualified personnel for hair removal in vulva to minimize its complications.

Keywords: Hematocolpos, labial fusion, laser, urinary retention

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INTRODUCTION

Pubic hair removal is common in both men and women.[1] The extensive use of the laser technology for this purpose worldwide[2] is associated with an increasing number of complications.[3] Some of the associated complications are erythema, pigmentation changes, blistering, crusting, scarring, discomfort, purpura, wound infection, etc.[4,5] In addition, laser hair removal therapy is expensive and needs multiple sessions. The novel problems seen with laser hair removal are generalized bromhidrosis,[6] anterior uveitis,[7] and irreversible damage to the iris.[8]

Labial adhesions are common in a pediatric population with fewer cases in postmenopausal women[9] and rarely seen in the women of reproductive age group.[10] They are known for causing various voiding problems in the females.[11-14] Nevertheless, iatrogenic vulval adhesions causing urinary retention and cryptomenorrhea have never been reported in the literature before.

This case is being reported due to its novel and unusual nature and the need for protocols and legislation for supervised laser hair removal by the trained personnel, especially in the sensitive vulval area, is emphasized.

CASE REPORT

A 21 year old virgin was referred from a local hospital for difficulty in passing urine for 1 week with suprapubic pain. Careful interrogation revealed that she had repeated sessions

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of combined Alexandrite and Nd:YAG laser hair removal treatment (LHT) on the vulva and the last one was 10 days ago. She had a total of ten sessions. The last eight treatment sessions were unsupervised and self-administered in a medical center. She did not receive any drugs/soothing creams before or after the sessions. She had been suffering from recurrent vaginal infections, previously before LHT. She missed her periods for the last 2 months. Previously, she had regular menstrual cycles with average menstrual bleeding for 5 days.

On abdominal examination, she had suprapubic tenderness and fullness. Inspection of the vulva revealed a complete fusion of labia majora, apart from a tiny hole of <5 mm in its middle part. The vulval vestibule was obliterated to the extent that insertion of a urethral urinary catheter was impossible. For that reason, a suprapubic catheter was inserted.

Investigations revealed normal hemoglobin, renal function tests, and serum electrolytes. Pelvic ultrasound showed full urinary bladder, anteverted normal sized uterus with minimal endometrial fluid and a turbid collection (4 cm × 3 cm × 3 cm) in the upper part of vaginal fornix. Pelvic computerized tomography (CT) scan showed normal ovaries and uterus, *in situ* suprapubic urinary catheter, no significant free fluid in the pouch of Douglas and a small collection at vaginal fornix (it was interpreted clinically as hematocolpos).

A diagnosis of acute urinary retention and cryptomenorrhea secondary to iatrogenic synlabia following injudicious laser use for vulval hair removal was made. Under general anesthesia, the patient was examined in lithotomy position, and labia majora were separated with sharp dissection. On complete separation, labia minora were not seen (either completely obliterated or devitalized). External urethral meatus looked healthy and a Foley's catheter was then readily inserted. The hymen was intact. Dark, bloody offensive discharge came out from vaginal orifice indicating old accumulated menstrual blood. The urinary catheter was taken out on the 3rd day, and the postoperative course was uneventful. Documentary photography could not be obtained because of cultural and religious issues [Figures 1 and 2].

Follow-up examination of the patient at 6 months showed completely separated labia majora and no further adhesions were seen. The patient also revealed that despite LHT, she still needs different methods for hair removal on the vulva, for example, shaving and creams.

DISCUSSION

Laser hair removal is the most commonly requested cosmetic procedure in the world.[2] The client in our case

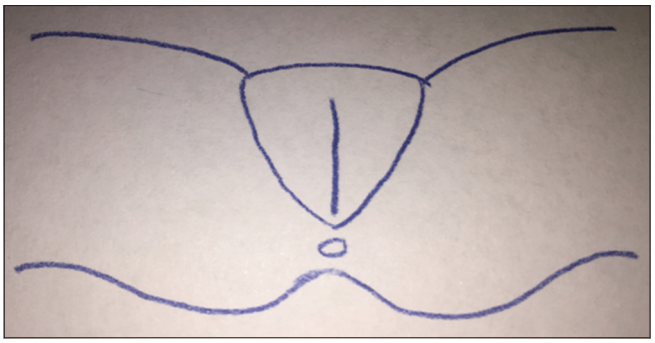

Figure 1: Vulva before surgical incision

report opted for whole body LHT to have a cleaner and attractive look. Smolak and Murnen reported the same reason for pubic hair removal.[15]

Skin burn is one of the known complications of laser hair removal.[16] This could explain the resorption of labia minora and synlabia causing outflow obstruction of the urine as well as menstrual blood in our case. Any laser system potentially can result in scarring and tissue damage when used incorrectly.[17]

The patient was from Middle East (Yemen) with pigmented skin. The ideal skin for laser hair removal is fair skin color, but today it is successfully performed on all skin types.[18,19] Afro-Caribbean and white women are more likely to engage in pubic hair grooming practices compared with Hispanics and at a younger age.[20] Similarly, the patient was quite young (21 years).

Some known gynecological causes of urinary retention are pelvic organ prolapse, uterine fibroids,[21] poorly fitting pessary, postanti-incontinence procedure, and incarcerated gravid retroverted uterus.[22]

The literature review showed a case of labial fusion in an infant associated with hydroureteronephrosis[23] but our patient had no evidence of hydronephrosis. The only predisposing factor in our case was the history of recurrent vaginal infections. A case of synlabia caused by severe monilial infection was reported by Saied.[24] Üstüner and Avsar[25] reported a case of labial adhesion with acute urinary retention secondary to Bartholin's abscess.

Labial adhesion is extremely rare in women in reproductive age, and possibly attributed to inflammation, lack of sexual activity, and estrogen deficiency. Uei *et al.*[26] reported a case of labial adhesion in a reproductive woman with difficulties of sexual intercourse and urination. Examination under anesthesia of our patient showed complete fusion of labia majora and resorption of labia minora due to

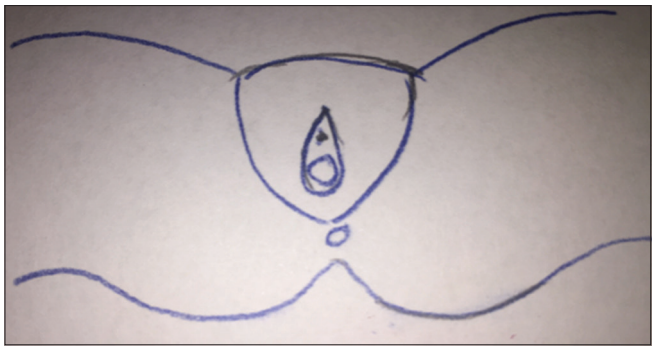

Figure 2: Vulva after surgical incision

injudicious use of laser therapy. This complication mimic Type 3 WHO female genital mutilation/infibulation where the labia minora and/or the labia majora are fused with/without excision of clitoris.[27] Infibulation may lead to the same complications requiring similar management. Other causes for labial adhesion in women of reproductive age include Steven-Johnson's syndrome, lichen sclerosis, and graft versus host disease[28] and rarely after normal vaginal child birth.[29]

Synlabia commonly occur in the absence of any other upper genital tract pathology.[28] Similarly, our patient's pelvic CT scan was normal except hematocolpos due to outflow tract obstruction.

The patient was told about the good results of LHT, but its adverse effects were not mentioned to her. Beyer *et al.* reported that laser skin treatment is carried out by nonphysicians, and pretreatment information contains significant errors and shortcomings.[30] Patients who request laser hair removal especially in the vulva need to be informed of all the possible adverse effects of laser, alternatives including the option of no treatment keeping in view the general consent procedure of Royal College of Obstetricians and Gynecologists, United Kingdom.[31] On the other hand, aesthetic medicine practitioners need to have a high level of knowledge, training, experience, and professional judgment in the LHT. In spite of all precautions, the risk of complications and side effects can be reduced but not eliminated.[32]

While planning strategies to prevent laser-related complications, certain preventive measures are advocated. The operator needs a thorough knowledge of the thermally induced effect of laser treatment on hair follicle and epidermal melanin.[33] The golden rule of clinical assessment (history and examination) cannot be overemphasized.[32] Other factors are the selection of laser wavelength range and laser device according to skin type[18,19] and dermatological condition.[34] Because of its longer wavelength, the Nd:YAG is the best laser system for pigmented skin.[35,36]

The use of medical device reports to monitor medical device performance and identify potential safety issues helps to maintain databases and formulate recommendations.[37] First two sessions of LHT for our patient were supervised by the medical care provider and then she was left unattended to self-administer laser to vulva for hair removal. No reassessment was offered before each session to judge on the response, duration of further sessions, and presence of complications. The causes of malpractice suggest insufficient training, inadequate diagnostic abilities, and promising unrealistic results by the laypersons in franchise companies,[5] cosmetic institutes,[38] etc. This situation demands effective legislative measures to restrict the use of laser by untrained and disqualified health professionals. Controlled and monitored LHT should be allowed only for well-equipped professionals with the knowledge of dealing with any untoward effects. If we look throughout the world, for example, in France, laser hair removal is carried out in many beauty centers despite the restriction by the law for medical use only,[3] emphasizing the importance of implementation of law. Home laser devices[39] are readily available now and this is making the situation more difficult. We need practical, proactive guidelines to manage the situation keeping in view the pros and cons of professionally supervised cosmetic LHT.

Different agents, for example, estrogens and steroids are used for labial adhesion in prepubertalgirls.[40] Caglayan[29] reported that the most effective treatment of labial synechiae is a surgical division under local anesthesia. We opted for surgical division of synlabia in our case because of pain abdomen, urinary retention, hematocolpos, and dense nature of the adhesion and it completely solved her problems.

CONCLUSIONS

This rare case emphasizes first, on the development of clinical guidelines focusing on tailoring the need for selecting a laser type, laser device, and duration of laser therapy according to skin type, skin conditions, body area and treatment goals to keep adverse effects at a minimum level by the trained, qualified health personnel. Second, effective legislation is needed for the implementation of these guidelines. The complications of LHT in the vulva can have a significant impact on the patient's body image and quality of life. Accordingly, it is recommended to have cosmetic LHT in vulva cautiously under qualified supervision, and the clients should be encouraged in making an informed choice.

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Conflicts of interest

There are no conflicts of interest.

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