CUSTOMIZED PROSTHETIC VAGINAL DILATOR IN GENITAL TRAUMA

Dr. Pranjali Dutt 1 Dr. Pooran Chand 2 Dr. Sunit Kumar Jurel 3  Dr. Balendra Pratap Singh 4

1 Senior Resident, Department of Prosthodontics, King George’s Medical University, Lucknow, India
2 Professor and Head, Department of Prosthodontics, King George’s Medical University, Lucknow, India
3 Associate Professor, Department of Prosthodontics, King George’s Medical University, Lucknow, India.

Address for Correspondence: Dr. Sunit Kumar Jurel, Flat no. 18/373, Indra Nagar Lucknow, India.
E-mail: dentistmj1110@gmail.com

ABSTRACT
Genital trauma can result from blunt and penetrating objects, which may result into injury to female and male sex organs. In females vaginal injuries affect the reproductive organs, the bladder and urethra. Most common is stenosis of the vagina. To prevent stenosis, dilation of vaginal wall was practiced as a non-surgical means. Custom made vaginal dilator was advised to aid in dilatation of the narrow vagina and maintains vaginal width and depth.

KEYWORDS: Genital Trauma, Vaginal Stenosis, Vaginal Dilator, Prosthetic Device.

INTRODUCTION - Traumatic vaginal injury in females is not uncommon which results in vaginal stenosis. Seventy five percentage of ureter injuries are iatrogenic among which 73% are gynecologic, 14% are general surgical, and 14% are urologic. The incidence of vaginal stenosis has been reported variably in the literature ranging from 1.2% to 88%. Genital injury my result either from sexual abuse or straddle injury. Vaginal injury results in formation of scar tissue causing stricture of the vagina. Causes of vaginal stenosis include: congenital cervical stenosis, surgical procedures performed on the cervix such as colposcopy, cryosurgery procedure, trauma to the cervix, repeated vaginal infections, atrophy of the cervix after menopause, cervical cancer, radiation and cervical endometriosis.

Treatment involves opening or widening the cervical canal. Cervical canal widening can be temporarily achieved by the insertion of dilators into the cervix. If the stenosis is caused by scar tissue, a laser treatment can be used to vaporize the scarring. Finally, the surgical enlargement of the cervical canal can be performed, by hysteroscopic shaving of the cervical tissue. The conservative way is use of dilators.

Use of prosthetic vaginal dilators (stent) helps in restoring vaginal opening. A vaginal dilator is defined as smooth plastic cylinder, which relaxes scar tissue that causes stricture of vagina. This case report is presenting management of vaginal stenosis with custom made vaginal dilator.

CASE REPORT
A 40yrs old female was reported to department of prosthodontics with the
complained of pain in lower abdomen since six months. On clinical examination, the patient reported pain while inserting finger. The patient was diagnosed by a vaginal injury, which resulted in contraction of vaginal wall. (Figure 1) A cannula was inserted to check the vaginal opening. (Figure 2)

The non-surgical treatment of vaginal stenosis with the help of prosthetic vaginal dilators is usually the first line of treatment. Compared to surgical methods, non-surgical vaginal dilation may help the vaginal tissues become softer and more pliable over a period of time, gradually developing in regions where it was narrow.

Thus, the treatment included dilatation of the vaginal wall using vaginal stent, which was customized according to the size of patient’s vagina and was advised to reline again after each month.

**CLINICAL PROCEDURE**

For the fabrication of a vaginal dilator impression compound (DPI, Impression Compound, India) was used, which was soften under warm water, kneaded and molded in a cylindrical form. The initial size of the stent was determined by digital palpation. A lubricant local anesthetic agent (Lidocain Xylocaingel, AstraZeneca, Mumbai) was applied on the molded compound and at the orifice of the vagina, which was, and then inserted in-patient’s vagina and the impression compound acquired shape of the vaginal cavity. The stent should be slightly larger than the cavity so that it applies pressure to the surrounding walls. Patient can perform pelvic floor Kegel exercise for easy insertion of the prosthesis as the muscles get relaxed in this position. At the distal end of the stent a loop was made that retained the stent through perineal T-bandage which was inserted through the loop. (Figure 3)

The patient was advised to wear the stent during night for one month. After every month relining was done to further dilate the opening, which increases the size of stent. Follow-up for 6 months was done until pain was relieved.

Patient was advised to wash the stent under fast running water and cleansing with a mild vaginal wash to prevent fungal and bacterial growth.

**DISCUSSION**

As the vaginal tissue is an elastic tissue that has the tendency to expand non-surgical treatment of vaginal stenosis was preferred using vaginal dilator over surgical methods, as the patient was apprehensive for any surgery. In this case report a custom made prosthetic vaginal dilator was fabricated with tight perineal T-bandage which applied firm and continuous constant pressure to the vaginal tissue without the use of patient’s hand.

Management of ureteral injuries is dictated by the location, type, medical history, overall status of the patient, including associated injuries, and prognosis.

Both non-surgical and surgical procedures can be used for treatment of stenosis of vagina.

Non-surgical procedures include hormone treatments to help enlarge the vagina. However, these treatments can be dangerous for women with a family history of certain types of cancer, such as breast cancer because hormone therapy is linked to the development of these cancers. Other procedures include vaginal steam bath and use of dilators. Surgical
procedures include vaginal loosening using lasers, vestibulectomy (such as woodruff procedure, vulvar vestibulectomy), carbon dioxide laser, and flash lamp excited dye laser technique. But most common and conservative treatment includes dilator therapy, which utilizes use of stent. Several different materials have been used for vaginal stents. These include gauze, a glass dilator, candle wax, Surgi-Stuf, wood covered with condom, vulcanite, foam rubber, jelonet/gauze wrapped syringe, silicone and acrylic. Dilators made from impression compound are more feasible, easy to reline, economical, low maintenance, easily accessible and user friendly. Acrylic vaginal dilators releases monomer that leads to adverse biological hazards which include cytotoxicity and genotoxicity thus not used. Stents made with softer material like silicone will exert less pressure to the vaginal walls and muscles will not stretch adequately thus use of impression compound dilators helps in attaining the desired result. The described technique of fabrication of custom made vaginal dilator offer definite advantage over other pre fabricated dilators as they conform more intimately to alter internal vaginal anatomy.

CONCLUSION

Vaginal Dilator is the preferred non-surgical management to prevent narrowing of vagina. It is an inexpensive, non-time consuming, low maintenance and easy to place stent which can be considered in a low resource set up.

Figure 1: Constricted Vaginal Opening

Figure 2: Vaginal Opening Was Checked Using Cannula: Close View

Figure 3: Customized Vaginal Dilator
REFERENCES


