Urologic trauma from vaginal dilation for congenital vaginal stenosis: A newly-described and challenging complication

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ABSTRACT

Vaginal dilation is first line therapy for vaginal agenesis. No major urologic complications have even been described. We present the management and successful outcome of immediate repair for urethral trauma in a patient with history of congenital anomalies managed with vaginal dilation. Proper exposure is difficult, but urologic repair can be achieved with or without concomitant vaginal repair.

Introduction

Vaginal dilation is the recommended first line therapy for vaginal agenesis. In addition to congenital conditions such as Mayer-Rokitansky-Küster-Hauser syndrome, vaginal dilation therapy has been applied to women with vaginal stenosis, changes from radiation therapy, and dyspareunia. Dilation can be a successful non-surgical approach for forming a neovagina with fewer complications, and better sexual function and sensation than surgical interventions. However, it still carries the potential risk of damaging adjacent structures and causing emotional distress. The only reported major non-gynecologic trauma during vaginal self-dilation are rectal injuries in patients with radiation induced vaginal stenosis. Here, we describe a case of urethral trauma requiring surgical intervention in a female with a history of congenital anomalies managed with vaginal dilation.

Case presentation

Case 1: A 19-year-old female with a history of urogenital sinus anomaly status post vaginal reconstruction with total urogenital mobilization 10 years prior was being treated with a regimen of self-vaginal dilation for vaginal stenosis when she developed discomfort and acute onset urinary incontinence. Exam revealed a 24Fr traumatic urethrovaginal fistula immediately distal to the most stenotic portion of the vagina, 2 cm proximal from meatus. Cystoscopy revealed no additional urologic trauma. With the patient in prone jackknife position, the vagina was repaired concomitantly to allow exposure. The fistula tract was excised, and the urethra repaired in 3 layers. The stenotic segment of the vagina was incised and augmented posteriorly using a 2 x 2 cm vaginal mucosal graft harvested from redundant distal vaginal tissue. Illustrations of the repair are demonstrated in Figs. 1–3. 16Fr catheter remained for 2 weeks. At most recent follow-up, she has no urinary incontinence, urethral stricture or fistula.

Discussion

The American College of Obstetricians and Gynecologists recommends vaginal dilation as first-line therapy for vaginal elongation in women with vaginal agenesis. Self-dilation includes successive dilators placed on the vaginal dimple. Reported complications from self-vaginal dilation include pain, discomfort, bleeding, and vaginal prolapse. Complications such as fistula formation, as seen in our present cases, have only been reported in the literature following surgical techniques. Trauma to neighboring structures including the rectum is not surprising in the setting of malignancy and irradiated tissue. However, there are no reported cases of major urologic trauma from self-vaginal dilation in women with congenital vaginal agenesis. We present the first report of major urologic complications following vaginal dilation. Despite the need for surgical intervention, successful urologic repair is achievable in experienced hands.

In the largest reported study by Edmonds et al. regarding vaginal dilator use in women with congenital vaginal agenesis, this nonsurgical technique was superior to any reported surgical series and carried no physical risk to the patient. This series demonstrated success rates of

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95%, attributing failures to the presence of multiple congenital abnormalities together with social, psychological, and cultural factors as opposed to a failure of the technique. There is currently a lack of standardization of vaginal dilator techniques or standardized training for providers. In addition, the patient’s perceptions of risk can contribute to compliance issues. Herlin et al. did comment on urethral dilation occurring in 5 patients (8%). However, the etiology, sequelae, and management of those complications were not addressed in their experience.

Overall, the use of vaginal dilators has been shown to be efficacious and safe in creating or lengthening the vagina without risk of surgical complications. The rate of success appears to depend on thorough and supervised training by a healthcare professional. Interestingly, we encountered another patient with Mayer-Rokitansky-Kuster-Hauser syndrome and vaginal agenesis being managed with vaginal dilation, who unfortunately sustained a ventral urethral disruption. She was successfully repaired in a similar manner as reported here. Patients should be cautioned about the risk of urethral trauma that can be significant and require surgical intervention.
Conclusion

We present the first reported case of major urologic trauma while using vaginal dilators, managed successfully with surgical intervention. We describe our experience with diagnosis and management of this complication. Urethral dilation remains first-line therapy for vaginal agenesis. Although rare, serious urologic complications can develop from vaginal dilation. Proper exposure is difficult, but urologic repair can be achieved with or without concomitant vaginal repair.

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