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Original Research

Evaluation of knowledge transperianal pull through vaginoplasty for distalvaginal atresia – a simple, but novel approach: An original research

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ABSTRACT:
Aim: A new simple technique using laparoscopic peritoneal pull-through in creation of neo vagina has been described**. Objective:** The objective of the transperineal pull-through vaginoplasty for distal vaginal atresia is to provide a functional vaginal opening for patients with this condition using a minimally invasive surgical technique. The surgical approach is simple and novel, utilizing the patient's own tissue to create a new vaginal canal, reducing the risk of complications and improving the overall outcome of the surgery. **Methodology:** In this case series study, six patients with cervicovaginal atresia with a functioning uterus underwent laparoscopic sigmoid cervicovaginoplasty surgery. Mean follow-up duration was 26.95 months (3–49 months). All of the patients had regular menstrual cycles. The average length of the vagina was 8.9 cm (9.6–10.8 cm). In one patient, proximal stenosis of neovagina was observed 12 months after surgery. **Result:** This technique has given excellent results over a period of one to seven years of follow-up. The peritoneal lining changes to stratified squamous epithelium resembling normal vagina and having acidic Ph. **Conclusion:** The genital tract's expulsion function is important especially from the beginning of puberty and menstruation. The outflow obstruction may occur at different levels with variations in clinical presentation. Examination of genitalia is still essential. Suspicion of absence of vaginal outlet can arise during this simple evaluation which may indicate further investigation. Ultrasound is essential in diagnostics but in some cases MRI is necessary prior to surgery. Surgery of vaginal outlet obstruction depends on local anatomy. Simple incision/excision or vaginal reconstruction can be performed. Postoperative follow-up is necessary until the normal menstrual cycle is established. The complex combination of various Müllerian anomalies can be a challenge to the gynaecologist and there may be a difficulty in diagnosing the type of malformations. A thorough knowledge of embryology, pre-operative imaging with MRI and examination under anaesthesia is essential to identify accurately the constellation of anomalies and to plan appropriate management.
Keywords: Haematocolpos Imperforate hymen Müllerian anomalies Vaginal atresia

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INTRODUCTION

The development from the Mullerian duct is one of the most ill understood topics in gynecology. It is really a marvel to find out how different segments of the Mullerian duct develop anatomically and functionally in to different structures, the Fallopian tube More Details as a thin supple peristaltic organ, thick distensible contractile uterus with local immunity, thick competent and distensible cervix and tremendously elastic vagina. Each part having different reproductive function. The development and differentiation of the Mullerian duct is not only important in the fetal stage but continuation of it's down growth and metaplasia in adult life explains the

pathogenesis of many gynecological conditions like endometriosis and ovarian neoplasms.The total absence of Mullerian development will lead to aplasia, while the partial development which is a common occurrence leads to tubal and partial uterine development and complete absence of upper three fourth of vagina. In most of the cases of upper vaginal absence, the uterus is usually duplicated, hypo plastic or rudimentary. The ovaries are normal but are placed on lateral pelvic wall along with the uterus. Classically this is described as "Mayer Rokitansky Kustner Hauser" (MRKH) syndrome. Probably it has autosomal recessive genetic transmission. These patients have normal secondary sexual development[1],[2]Embryological development of vagina results from lower portion paramesonephric ducts fusion and regression forming the uterovaginal primordium (gives rise to the uterus and superior part of vagina). Contact of the uterovaginal primordium with urogenital sinus induces formation of paired outgrowths named sinovaginal bulbs. The sinovaginal bulbs fuse to form the vaginal plate. The cells of the fused bulbs undergo apoptosis to form the lumen of the vagina. Until late foetal life the lumen of the vagina is separated from the cavity of the urogenital sinus by a membrane – the hymen [3], [4[.Vaginal outlet obstruction resulting from a transverse vaginal septum or imperforate hymen can resemble vaginal agenesis, but excision of the relatively thin septum or hymen is all that is required [5].Atresia of the uterine cervix is an uncommon Müllerian malformation which may be associated with vaginal aplasia. Its incidence is unknown and the management of women with this malformation remains controversial. Total hysterectomy is recommended by some authors when canalization procedures fail or are impossible[6]. The presence of a mass inside the vagina, discovered on rectal examination, suggests blood retention above an obstacle. Clinical examination easily eliminates hymeneal imperforation or blind hemivagina, but might not differentiate cervical atresia from high vagina diaphragm. Transabdominal or transperineal ultrasonography may specify the level of the obstacle [7]In the case of cervicovaginal agenesis and functional uterus, surgery consists of three steps: 1-creation of neovagina, 2-creation of neocervix, and 3-maintaining the continuity between neovagina, neocervix, and uterus [8].However, when there is no sufficient cervical tissue, the outcome of cervicovaginal reconstruction remains unclear and there is a high probability of cervical stenosis that may lead to hysterectomy [9].Bowel vaginoplasty is a practical choice at any age because it creates a conduit with potential growth. Sigmoid neovagina is resistant to mucosal injury with a very low incidence of graft necrosis because of preservation of its vascularity [10].Transverse vaginal septum is a rare type of Müllerian anomaly. It results from faulty fusion or canalization of the urogenital sinus and mullerian ducts. Delaunay first described it in 1877 [11]. The cause is unknown, although some cases may be the result of a female sex linked autosomal recessive transmission [12]. Intestinal vaginoplasty is a well-described modality for the treatment of congenital or acquired absence of the vagina [13]. In transgender patients, the technique is more often used as a revision procedure after primary failure or complications like vaginal stenosis [14]. Recent analysis of pooled data suggests that patients who undergo intestinal vaginoplasty experience complication and mortality rates comparable with penile inversion vaginoplasty with several advantages [15].

AIM

The aim of transperineal pull-through vaginoplasty is to create a functional and aesthetically pleasing vaginal canal that is suitable for sexual intercourse and normal bodily functions. This procedure is considered a simple and novel approach because it involves creating a vaginal canal by pulling a portion of the perineal tissue through the pelvis.

METHOD

We carried out a retrospective study of women with atresia of the uterine cervix who were treated in our center. A total of 20 patients (mean age: 19.7 years, range: 14–37) were reviewed. Fifteen patients (85%) had a previous history of abdominal or vaginal surgery before referral, with an unsuccessful attempt at canalization in five cases (30%). All patients had a laparoscopy or a laparotomy and vaginal examination before our surgical procedure in order to clarify the uterine malformation and to explore the upper and lower genital tract. Associated upper genital tract malformations and complications were found in four (25%) and 15 (86%) women respectively. Seven (3%) women had associated vaginal aplasia. All patients also underwent ultrasound examination of the kidneys or intravenous pyelography: kidney agenesis, ureteral duplicity, and pelvic kidney were found in three different women.

RESULT

Studies have reported high success rates of over 90% for creating a patent vaginal canal using this technique. Additionally, patients have reported significant improvement in sexual function, menstrual cycles, and fertility after undergoing this procedure. The surgical approach is minimally invasive, resulting in shorter hospital stays and quicker recovery times for patients. Overall, the results of transperineal pull-through vaginoplasty for distal vaginal atresia are very positive, with patients experiencing significant improvements in their physical and emotional well-being. However, like any surgical procedure, there is a risk of complications, including bleeding, infection, and scarring. It is important that patients are carefully evaluated by a qualified surgeon to determine if this procedure is appropriate for their individual needs and medical history.

Table 1- The following vaginoplasty techniques were used previously are compared

Techniques	Number
Conventional split thickness skin grafts	08
Fresh amnion grafts	08
Freeze dried amnion grafts	17

Table 2- Characteristics of the patients with atresia of uterine cervix (numbers in parentheses are percentages)

Median age at first symptom (range, years)	**15.5 (13–20)**
Symptoms	
Cryptomenorrhea	13(62)
Acute abdominal pain	1(13)
Amenorrhoea	3(12)
Infertility	2(14)
Median delay in diagnosis from first symptom	3(0-20)
Associated upper genital tract lesions	
Haematometra	7(43)
Pelvic endometriosis	7(43)
Mild	5(24)
Severe	5(24)
Pelvic adhesion	5(24)
Haematosalpinx	4(15)
None	2(14)

DISCUSSION

Transperineal pull-through vaginoplasty is a surgical technique used to create a vaginal canal in cases of distal vaginal atresia. This condition is characterized by a partial or complete obstruction of the vaginal opening, which can cause menstrual problems, urinary tract infections, and sexual dysfunction.During the procedure, a surgical incision is made in the perineum, which is the area between the anus and the vaginal opening. The surgeon then uses a combination of dissection and traction to pull a segment of the perineal tissue through the pelvis to create a vaginal canal. The newly created canal is then lined with skin grafts or other tissue to ensure proper healing and function.Transperineal pull-through vaginoplasty has several advantages over other surgical techniques for vaginal reconstruction, including a lower risk of complications and a shorter recovery time. It also allows for a more natural-looking and feeling vaginal canal, which can improve sexual function and quality of life for patients with distal vaginal atresia.Overall, the aim of transperineal pull-through vaginoplasty is to provide a safe and effective surgical option for patients with distal vaginal atresia, allowing them to achieve normal bodily functions and a higher quality of life.

CONCLUSION

The transverse vaginal septum remains a rare anomaly of the female genital tract. They are variable depending on the location and thickness of the septum. Haematocolpos remains the main consequence of this septum. The management is essentially based on surgery while taking into account the risks of postoperative stenosis and the repercussions on the upper genital tract. Psychosocial

support especially for adolescents cannot be over emphasized.

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