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SURGICAL RECONSTRUCTION (UTEROVAGINAL ANASTOMOSIS) USING AUTOLOGOUS PERITONEUM (DAVYDOV'S PROCEDURE) IN A CASE OF CERVICAL AGENESIS

Surgery

Dr. Dhvani Shah*	Third year M.Ch. resident in Pediatric surgery, Department of pediatric surgery, LTMMC and LTMGH, Sion, Mumbai- 400022, Maharashtra. *Corresponding Author
Dr. Apoorva Kulkarni	Assistant Professor, Department of Pediatric surgery, LTMMC and LTMGH, Sion, Mumbai-400022, Maharashtra.
Dr. Abhaya Gupta	Additional Professor, Department of Pediatric surgery, LTMMC and LTMGH, Sion, Mumbai-400022, Maharashtra.
Dr. Paras Kothari	Professor and Head, Department of Pediatric surgery, LTMMC and LTMGH, Sion, Mumbai-400022, Maharashtra.
Dr. Manajitsinh Jadhav	Second year M.Ch. resident in Pediatric surgery, Department of Pediatric surgery, LTMMC and LTMGH, Sion, Mumbai-400022, Maharashtra.

ABSTRACT

Cervical agenesis is a rare Mullerian anomaly requiring surgical reconstruction to restore the uterovaginal canal and thus menstruation in such patients. In the past, treatment in such patients was hysterectomy which has now developed into more conservative approach. We describe a successful canalization of the uterovaginal canal using autologous peritoneum in a case of cervical agenesis.

KEYWORDS

cervical agenesis, autologous peritoneum, uterovaginal anastomosis.

INTRODUCTION:

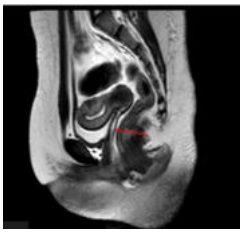
Cervical agenesis is a rare Mullerian anomaly with an incidence of 1 in 80000 live births.[1] The cervix being absent is replaced by a fibrous tract connecting the lower segment of uterus to the vaginal apex.[2,3] Patient if having a functional uterus present with cyclic abdominal pain due to hematometra and primary amenorrhea. It then poses a challenge to the pediatric surgeon to restore the continuity of the tract and restore normal menstrual cycle and possibly fertility. The following text represents successful management of a similar case of cervical agenesis in a 14 year old girl in which the reconstruction was achieved using autologous peritoneum (Davydov's procedure).

Case report:

A 14-year-old girl came with complaints of lower abdominal pain and amenorrhea. Patient was evaluated by gynecologist, external genitalia was normal. Patient underwent ultrasonography which was suggestive of hematometra with hematocolpos with bulky ovaries. MRI pelvis was done which was suggestive of bulky anteverted uterus 8.8*5*3.5cm in size with collection s/o hematometra, cervix was not well appreciated with thin hypointense band extending from lower uterine segment till the lower vagina s/o congenital cervical agenesis. There was associated left hematosalpinx with bilateral chocolate cyst. Patient underwent examination under anesthesia and diagnostic laparoscopy by a gynecologist. Intra-operative findings were: a. Blind ending vaginal pouch with a vertical band s/o cervical agenesis. Diagnostic laparoscopy was done which showed bulky uterus with flimsy adhesions over the uterus with left hematosalphinx with bilateral bulky ovaries. Adhesiolysis was done. Patient was started on levonorgestrel.

Patient was lost to follow up and referred to pediatric surgery department after 1 year. MRI scan was repeated – distance between lower part of uterus and vagina was shown to be 6.4 cm. (Figure 1)

Figure 1. T2 weighted MRI showing non visualization of cervix and upper end of vagina, which are replaced by a fibrous cord (red arrow) suggestive of cervical agenesis.



Decision was taken to do vaginoplasty with uterovaginal anastomosis. Abdominoperineal approach was taken. Abdomen was opened, hysterotomy done. Uterine cavity was sounded with dilator and lower most part of the cavity reached. Vagina sounded with dilator and tissue between uterine sound and vagina was cut. Uterus was then opened over the sound. Local vaginal advancement flaps were taken laterally and sutured to uterine opening with prolene 2-0. Posteriorly, raw area which was present was covered with rotational flap 8*5 cm taken from peritoneum over sigmoid colon. (Figure 2) Foley's catheter no. 20 was kept in the uterus and brought out per vaginally. Hysterotomy and the abdomen was closed in layers. Examination under anesthesia was done on POD 6 and POD 13, in which sutures and flaps appeared healthy. Following which patient was discharged with per vaginal Foley's catheter in situ. Patient was started on vaginal dilatation on follow up (POD 23) and underwent examination under anesthesia with genitoscopy after 1 and 2 months of procedure – flaps were healthy, there was no evidence of stenosis or stricture and scope could be negotiated till uterus. Per vaginal Foley's catheter was removed after 2 months of procedure. Patient was kept on oral contraceptive pills to withhold menstruation for 2 months. Subsequently the patient had normal menstruation and was followed-up for 3 months and course was uneventful.

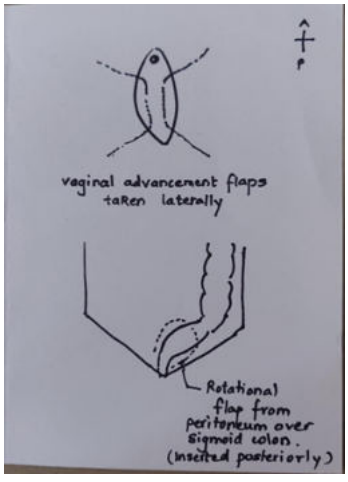


Figure 2: Pictorial representation of the reconstruction done.

DISCUSSION:

The prevalence of Müllerian anomalies is ~4% in the general

population.[1] Cervical agenesis is a rare congenital disorder amongst them with the prevalence of 1 in 80000 to 100000 live births. American Society of Reproductive Medicine classifies this disorder into type 1B classification of Mullerian anomaly which results from abnormal fusion of the Mullerian ducts with the urogenital sinus or atrophy of a segment of normally formed Mullerian system [1,2]. It represents about 3% of all uterine anomalies. Rarely in 4.8% of cases, cervical agenesis is associated with a functional uterus and presence of vagina [2]. These patients present with primary amenorrhoea, cyclic abdominal pain and abdominal bloating due to hematocolpos like in our case. They also have associated hematosalphinx and endometrioma and are associated with infertility and well developed secondary sexual characters. Diagnosis is made by at the time of laparotomy, using ultrasonography or using Magnetic resonance imaging (MRI) [3]. MRI is also helpful in planning the further reconstruction procedure [3].

The main objective of the treatment in these cases is symptomatic relief, restoration of menstruation and fertility. Fujimoto et al had described successful management of 7 such cases of cervical agenesis using various methods ranging from uterovaginal cannulation with or without vaginoplasty, vaginoplasty alone or hysterectomy [2,4]. Hysterectomy was the eventual treatment in the past of such cases due to severe complications of recanalization of the cervix and the unlikelihood of a viable pregnancy. Treatment now has progressed to conservative methods with various methods of reconstruction of epithelialized uterovaginal canal [4]. The skin, bladder mucosa, amniotic membrane, bowel peritoneum and others were used as graft in literature. [6] The major postoperative complication of these procedures is infection and stenosis of the new canal. Therefore, one of the key points in postoperative management is the judgement of an adequate indwelling period for a neo-canal catheter to maintain patency while simultaneously protecting patients from infection. [7] Success rates are lower in patients undergoing vaginoplasty with canalization (40%) than cases with canalization alone (70%). In cases of unsuccessful canalization procedure or severe pelvic inflammatory disease, hysterectomy cannot be avoided. Hysterectomy leads to psychological implications and permanent loss of reproductive function [7,8].

In the above case, autologous peritoneum from the sigmoid colon was used to create epithelial lined uterovaginal canal, a procedure first described by Davydov. Similar procedure had been done by Helmy et al and Kraiem et al with similar results [5,6]. In both the above studies, regular menstrual flow was achieved and there was no evidence of stenosis post-op similar to our case. Novel technique using laparoscopic assistance has been described by El Saman et al. [9]

The likelihood of spontaneous pregnancy in such reconstructions appears to be low due to endometriosis and pelvic adhesions. But assisted reproductive techniques help to achieve a pregnancy in these patients.

CONCLUSION:

Reconstruction of the uterovaginal canal using autologous peritoneum is a simple and effective procedure for treatment of cervical agenesis with a functional uterus and a normal vagina. It restores menstruation and possibly the potential for reproduction in such cases.

Conflict of interests: None

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