Hollow Cervical Stent: Management of Transverse Vaginal Septum

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ABSTRACT
This clinical report deals with the management of obstructive vaginal transverse septum at an early stage and conservative management of the same with canalization along with the help of hollow cervical stent.

Keywords: Hollow vaginal stent, Recanalization, Transverse vaginal septum.

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INTRODUCTION
Transverse vaginal septum is caused by the failure of vertical fusion, i.e., complete cavitation of the vaginal plate between the sinovaginal bulbs and neutrovaginal canal. The anomaly is uncommon with an incidence of 1 in 70,000 females. Usually, the septum is thin, but can range from 5 to 6 cm. It has been reported to cause pyometra (pus in the uterus), pyosalpinx (pus in fallopian tube), and pyomucocolpos (pus and mucous in upper vagina), which can develop due to a breach of the septum by vaginal and perineal bacteria. Patients with obstructive transverse vaginal septum present with cyclic lower abdominal pain, amenorrhea, and central pelvis mass.1

Congenital abnormalities, such as an imperforate hymen,2 a complete transverse vaginal septum, or rarely, cervical atresia can result in obstruction of the female genital tract.

Obstruction of the female genital tract results in menstrual blood accumulating in the vagina (hematocolpos), uterine cervix (hematotrachelos)3, and uterine cavity (hematometra).4 About 50% of the congenital cervical obstruction cases are associated with pelvic endometriosis.5 Acquired obstruction of the lower female genital tract is a rare condition. It can be caused by iatrogenic trauma, obstetric laceration, or cervical or endometrial carcinoma.6,7 Acquired obstruction of the lower female genital tract caused by the spontaneous cervical atresia may be a result of low level of estrogen in perimenopausal period.

Generally, these conditions become clinically evident at the time of puberty along with symptoms that arise from the retention of menstrual blood or from bladder outlet obstruction secondary to compression of the urethra.8,9

Resection of the septum with end to end anastomosis is the first surgical management of obstructive transverse vaginal septum. Sometimes, this might lead to scarring, infection, or development of contractures. A total hysterectomy is the next line of surgical treatment when canalization fails or is not possible.10 This clinical report deals with the management of obstructive vaginal transverse septum at an early stage and conservative management of the same with canalization along with the help of hollow cervical stent.

CASE REPORT
A 16-year-old female patient was referred to the Department of Prosthodontics, Sri Ramachandra University, Chennai, India, from the Department of Gynecology for the management of cervical atresia surgically along with prosthesis.

Patient’s chief complaint was cyclical pain in the abdomen for past 4 months and not attained menarche. The patient also complained of white discharge frequently with no history of bleeding. There was no association with growth defects or breast development. Height and weight were appropriate for age. Minimal pubic and axillary hair growth was present. Breast development was normal (Tanner stage 2) and on per abdomen examination, no tenderness or mass with soft on palpation was found. Local examination revealed an intact hymen with a transverse vaginal septum on per speculum examination.

No relevant previous medical history was present. There was no family history of consanguineous marriage or similar complaints from sisters and relatives.

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Ultrasonography studies showed uterus and ovaries of normal size.

**DIAGNOSIS**

The patient was diagnosed with obstructive transverse vaginal septum with hematocolpos/hematometra.

**MANAGEMENT**

The patient underwent resection of the septum with end to end anastomosis along with cervical canalization (with mold inserted in the vagina and Karman’s cannula in the cervical opening 2 months before and recanalization was done a month later). Along with the cannula, a prosthetic stent was placed in order to hold the cannula in place and aid in flushing of the blood during the menstrual period along with maintaining the patency of the cervix. In order for the stent to be in place, it was sutured to the cervical wall.

**FABRICATION OF THE PROSTHETIC STENT**

A 20-mL syringe and suction tip were used as the base model. The syringe was modified according to the specification: 30-mm long and suction tip was cut to 10 mm (Figs 1A and B). The putty impression material was used to occupy the mold space to obtain a hollow cylinder configuration.

Over this putty, mold measuring about 40 mm was used for fabrication of the prosthetic stent. Modeling wax was used for fabrication of the wax pattern (Figs 2A and B). The wax pattern along with the putty mold was flasked using plaster of paris. Dewaxing was done and packed with heat cure pink acrylic resin (DPI heat cure acrylic resin; The Bombay Burmah Trading Corporation, Ltd., Mumbai) (Figs 3A and B).

The processed prosthetic stent was finished and polished so that it does not cause any irritation to the vaginal mucosa (Figs 4A and B).

**COMMENT**

Hematocolpos and hematometra are uncommon conditions that are usually misdiagnosed. A detailed medical history, clinical examination, and transvaginal ultrasound are the ways and means to diagnosis such conditions.
A rigid cannula retained as a temporary stent is sufficient treatment. Diagnosis of cervical obstruction by transverse septum should be made as early as possible so that aggressive surgical procedures, such as hysterectomy can be avoided.

However, this clinical report is the management with a cannula retained with the help of temporary prosthetic stent. Surgical canalization in selected patients can be successfully performed to provide patients an opportunity for conservative management, resulting in normal menstrual bleeding, resolution of cyclic pelvic pain, and some potential for fertility.

REFERENCES