Creation of Functional Neo-vagina in Vaginal Atresia

Poudel R[1], Dangal G[1], Karki A[1], Pradhan H[1], Shrestha R[1], Bhattachan K[1], Bajracharya N[1]
[1]Department of Obstetrics and Gynecology, Kathmandu Model Hospital, Nepal

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Vaginal atresia is one of the common congenital anomalies of the female lower genital tract due to incomplete canalization of Mullerian ducts. It mostly presents as primary amenorrhoea with attacks of severe lower abdominal pain at monthly interval in presence of appropriate Tanner staging secondary sex characteristics. It is diagnosed by clinical presentation, examination and imaging, usually ultrasound scan and magnetic resonance imaging. There are conservative non-surgical as well as surgical methods to correct it. A 13 years pubertal girl presented at Kathmandu Model Hospital with complaints of cyclic severe lower abdominal pain since one year with presence of appropriate secondary sexual characteristics. Ultrasound showed features suggestive of hematometra. She underwent drainage of hematocolpos with neo-vaginoplasty followed by intravaginal mould placement. She also underwent dilatation of neovagina thrice under IVA to maintain the vaginal length and function. We present here a case of isolated vaginal atresia, who underwent Mc Indoe Vaginoplasty followed by serial dilatation.

Keywords: hematocolpos; neo-vaginoplasty; vaginal atresia

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INTRODUCTION

Vaginal atresia is a congenital defect in which the urogenital sinus fails to contribute to the caudal portion of the vagina resulting in uterovaginal outflow tract obstruction. Its incidence is 1 in 5000-10,000 live female births.[1] It may occur as an isolated developmental defect (extremely rare) or as part of a complex of anomalies (more common).[2]Diagnosis is made only when evaluation is done for primary amenorrhea or cyclic abdominal pain with otherwise typical growth and pubertal development.[3]

CASE

A 13 years girl from Lalitpur district presented to Kathmandu Model Hospital with complaint of cyclical pain over lower abdominal region since one year. This pain used to occur for 2-3 days and got repeated each month. It was moderate in intensity and sometimes severe enough which required hospital emergency visits. She had not had her menarche and had not been sexually active yet. She had undergone examination under Anesthesia (EUA) and drainage of hematocolpos thrice in one of the centers in Kathmandu itself with misdiagnosis of imperforate hymen. But she repeatedly had same problem and this time she came to our centre.

CORRESPONDENCE

Dr Rekha Poudel
Department of Obstetrics and Gynecology,
Kathmandu Model Hospital, Nepal
Email: drrekhapoudel@gmail.com
Phone: +977- 9803721075

At our center, findings of general physical examination were normal with appropriate Tanner staging secondary sex characteristics. Abdomen was soft with mild suprapubic tenderness. Gross examination of external genitalia revealed normal findings. There was an isolated blind-ending vaginal dimple about one cm in depth, without obvious bulging of the hymen. Per rectal examination revealed mass palpable anterior to the rectal wall. Ultrasound of abdomen and pelvis revealed bulky uterus (9x5x6 cm) with collection (150 ml) having low level internal echoes in the uterine cavity and extended down to the upper two-third of vagina, suggestive of hematometra. Bilateral ovaries appeared normal. Other basic investigations were within normal limit.

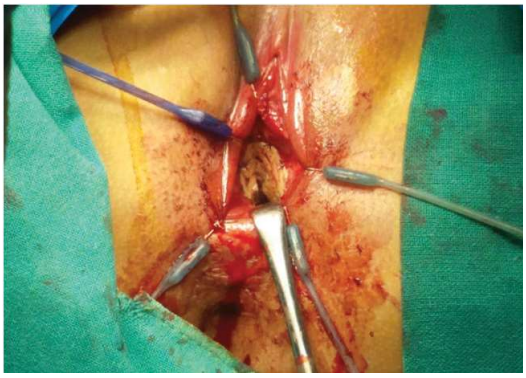

Figure-1: Neo-vaginoplasty with Split thickness graft in-situ (Mc Indoe Vaginoplasty)

She was admitted and started with parenteral antibiotics. Informed consent was taken and under spinal anaesthesia, previous examination findings

were confirmed. Split thickness skin graft was taken from right buttock and harvest site was dressed with an occlusive dressing. Vaginal mould was prepared. Then, 2-3 cm transverse incision was given over the vaginal dimple and dissection was done creating space between urethra and urinary bladder anteriorly and rectum posteriorly. Two canals were created on each side of median raphe; the latter was then cut creating a single canal. Hematocolpos of around 150 ml was drained and vagina was dilated with Hegar's dilators. Pathway to the uterus was identified. The graft was draped over the mould and lateral edges of the skin graft were approximated. Mould was then inserted into the vagina. Edges of the skin graft at the distal end of mold were reapproximated to the distal opening of the neovagina using interrupted stitches of delayed-absorbable suture.

The vaginal mould and Foley catheter was left in place for seven days following surgery. Parenteral antibiotics were continued for 48 hours followed by oral antibiotics. On seventh post-operative day, external stitches and mold were removed. Her post-operative stay was uneventful. On one week follow-up, patient was doing well and had no complaints. Then, after five weeks of surgery, she had her menses which was associated with dysmenorrhoea and it was relieved with oral analgesics. Then, she underwent EUA and vaginal dilatation under IVA thrice at interval of one month. Now, she is having regular menstrual cycles associated with mild dysmenorrhoea. She is on regular follow-up and her vaginal length is maintained at 6 cm

DISCUSSION

Only upper vagina is formed from Mullerian ducts while the lower vagina develops from the vaginal plate of the urogenital sinus. Vaginal atresia falls under Class I according to the American Fertility Society Classification of Mullerian Anomalies.[4] Vaginal atresia occurs in various degrees and forms. It is usually associated with various syndromes like Mayer-Rokitansky-Kuster-Hauser syndrome, Bardet-Biedl syndrome, Kaufman-McKusick syndrome, Fraser syndrome, and Winters syndrome.[5]

Isolated vaginal atresia mostly presents with primary amenorrhoea in background of appropriate Tanner's staging of secondary sex characteristics while it occasionally presents with severe lower abdominal pain at monthly intervals in background of cryptic menstruation. This condition can lead to haematometra, haemtocolpos, endometriosis or pyometrawhich, if left untreated can cause imminent threat to fertility.[6]Clinical examination, Ultrasound evaluation and MR imaging aids in the diagnosis.

In women with Mullerian agenesis with associated vaginal atresia, passive dilatation technique establishes the coital function of vagina in as many as 90% of cases.[7]In women with isolated vaginal atresia, creation of functional neo-vagina is the treatment goal.MC Indoe vaginoplasty is universally acceptable and widely practiced procedure for neocolposis reconstruction.[6]It creates a neovaginal cavity by dissecting between the bladder and rectum, and grafts skin to resurface a surgically created neovagina. It uses split or full thickness skin graft obtained from patient's buttocks or thighs. A space-occupying vaginal mold is required to maintain the skin graft.[8]Postoperative infection, haemorrhage, failure of graft take, vaginal stricture and fistula are few complications.[9]

Time of surgery is to be decided according to grade of atresia and clinical presentation. Modified Mc Indoe vaginoplasty, Colpoplasties using bowel segments, Vecchietti procedure, etc are other trending approaches. Scheduled postoperative passive dilatation is required to prevent vaginal stricture. Psychological support is a must to improve the overall quality of life.[9]

CONCLUSIONS

An adolescent female with cyclic lower abdominal pain and otherwise typical growth and pubertal development should be evaluated well to rule out any congenital genital anomalies. Timely surgical intervention is necessary to prevent further complications.

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