

# Hysterectomy of a 15 Years Old Girl: A Rare Case Report

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## ABSTRACT

A 12 years old girl reported with a history of unsuccessful attempt at vaginoplasty. During admission, she was found to be in septic shock and detected to have pyoperitoneum as well as, involuntary leakage of urine. Exploratory laparotomy was carried out as the life saving measure. After 1 year, she was taken up for the repair of vesicovaginal fistula (VVF). She presented again with complaints of mass in lower abdomen after 8 months. When evaluated the mass was diagnosed as hematometra and blood was drained out, by syringing the uterus in a surgical procedure. Further she developed severe pain along with recurrence of the mass, which was progressively increasing in size. The repeat vaginoplasty was attempted but found unsuccessful, resulting in hysterectomy at 15 years.

**Keywords:** Hematometra, McIndoe's vaginoplasty, Vaginal atresia, Vesicovaginal fistula.

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## INTRODUCTION

Vaginal agenesis is a rare congenital anomaly of the obstruction of female genital tract, recorded as 1 in 4000 live female births,<sup>1</sup> and reported to be the second most common cause of primary amenorrhea.<sup>2</sup> Vaginal agenesis occurs either as an isolated developmental defect or within a complex of more extensive anomalies, such as, anomalies of the renal (43.3%) and the skeletal (29%) systems.<sup>3</sup> The uterovaginal canal as a single midline

tubular structure is formed out of the fusion of bilateral müllerian ducts in the fetus. The caudal aspects of the bilateral müllerian ducts fuse at the midline, during 6 to 8 weeks of fetal development. A single midline tubular structure, the uterovaginal canal forms as a consequence of cell proliferation of fused ducts, and it extends encountering the urogenital sinus. Bilateral endodermal invaginations, i.e. sinovaginal bulbs form as the müllerian tubercles regress, during further development. Moreover, the canalization of the uterovaginal canal occurs from the caudal to the cephalic aspect, with an epithelial lining derived from the urogenital sinus. Vaginal agenesis arises from the thwart of any event during the described ontogeny.

When not detected in the neonatal period, the anomaly often remains undetected until menarche. However, the patient presents with abdominal pain due to an obstructed uterovaginal tract. When laparoscopy and ultrasound reveal the presence of uterus, early laparotomy only would define the cervix, so as to undertake a reconstructive surgery. In the absence of cervix, hysterectomy would be the only alternative. In this case report, we describe a complication from the elective primary vaginal reconstructive surgery, an improper neovagina in a girl of 12 years, landing at no further scope of correction of the uterovaginal canal for the natural drainage of uterine secretions, ending with hysterectomy at 15 years.

## MATERIALS, METHODS AND RESULT

A 12 years old girl presented to the Department of Obstetrics and Gynecology, IMS and SUM Hospital, Bhubaneswar, with complains of pain and mass in lower abdomen with features of septic shock. Indeed here before she had reported to a tertiary care center 4 months back with the complaints of lower abdominal pain and, was detected to have a blind vagina with a tense, tender, cystic mass of 4 cm diameter at suprapubic region. Hematometra was confirmed by ultrasonography (USG). McIndoe's vaginoplasty was attempted with a serious error of injuring the bladder and the neovagina was not connected to the uterine cavity. Restoration of the vagina for sexual activity too was not achieved in the first reconstructive surgical attempt. Instead, there was internal sepsis that complicated the situation. She had two indwelling Foley's catheters, one into the injured bladder and the other in the uterine cavity through the

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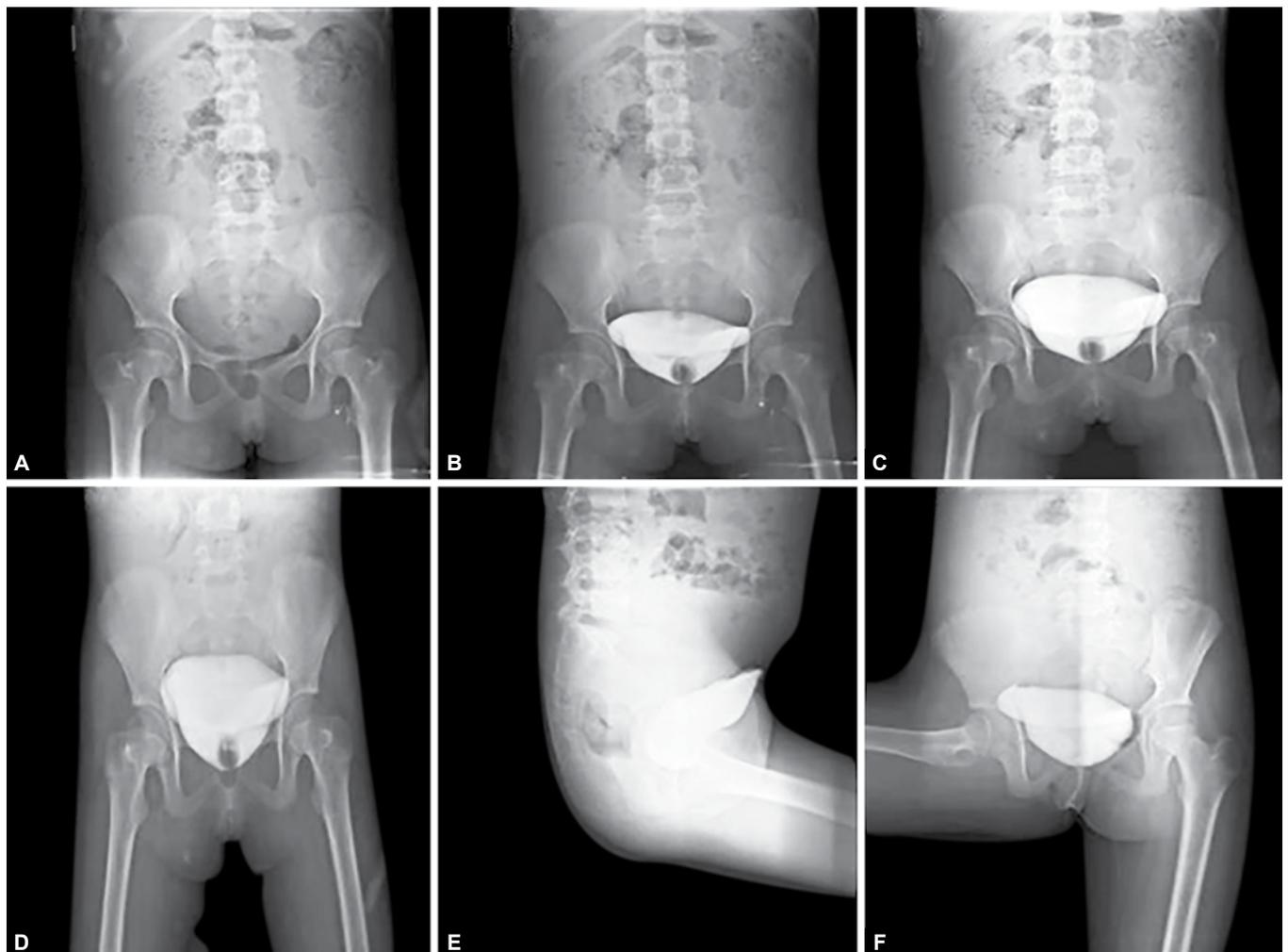
half-constructed neovagina. However, on the twelfth postoperative day, she developed severe abdominal pain with fever for which, the dilatation of the neovagina was done. After 18th day of surgery, she additionally complained of dyspnea, distention of abdomen and leakage of urine through the vaginal tract, which was more during sleeping posture. She was reported to our hospital at this stage.

The patient was in the shock stage and USG revealed peritoneal collection and pyoperitoneum was confirmed. Exploratory laparotomy was carried out as the life saving measure and 2L of pus were drained from the peritoneal cavity, along with drainage of the left ovarian abscess. Right ovary was buried in pouch of Douglas with matted intestine and frozen pelvis. Peritoneal lavage was done and 500 mg Amikacin was left in the peritoneal cavity, to prevent further infection. The patient received a regimen of a higher antibiotic during postoperative period. She responded well to the treatment and started showing remarkable signs of recovery and was discharged with an indwelling Foley's catheter in view of urinary leakage.

On her follow-up visit after 3 weeks, she was found to have a 1 cm long blind pencil vagina with leakage of urine.

USG and contrast enhanced computerized tomography (CECT) revealed normal urinary system with normal uterus and cervix. Skeletal system evaluation revealed no abnormality. Voiding cystourethrogram could not trace a fistulous tract (Figs 1A to F), she was advised for follow-up after 6 weeks at the urosurgery outpatient department (OPD).

A vesicovaginal fistula (VVF) was diagnosed by cystovaginoscopy. Urethra and bladder walls were normal with normally distending bladder. On vaginoscopy, 2.5 cm large fistula was seen at the supratrighonal part of bladder immediately above the Mercier's bar. Vagina was narrow, admitting not even the tip of little finger and was covered with skin. After regular checkups, she was found to be fit for the third surgery after 1 year. With the help of urologist her VVF was repaired by the abdominal approach. Bladder mobilized, anterior cystotomy done and was extended superiorly and posteriorly well up to the fistula, which was demarcated. Bladder was mobilized further beyond the fistula. Vagina and bladder were closed in two layers, with interpositioning of greater omentum, which was easily reachable up to the fistula site. Hysterectomy was avoided in hope of conserving the



Figs 1A to F: Cystourethrogram showing normal urinary outflow tract

uterus and repeat vaginoplasty. Within 8 months of VVF repair, she probably started menstruating and presented with abdominal pain, which was diagnosed by USG as hematometra (Fig. 2). Under ultrasound guidance about 200 ml of altered blood was drained out by syringing. She was given injection depot medroxyprogesterone acetate 150 mg 3 monthly to make her amenorrheic.

After one and half year of progesterone therapy, she presented with pain and swelling in lower abdomen. On examination, she was detected to have a 24 weeks size tender suprapubic mass. Hematometra was confirmed by USG. Abdomen was opened by infraumbilical midline incision. There was no adhesion in the peritoneal cavity. Uterus was 24 weeks size with normal tubes and ovaries. Hematometra was addressed by a stab incision at the posterior aspect of fundus. Cervix was negotiated by a number 8 Hegar's dilator passing through the stab wound. A transverse incision was given on the previously formed vaginal pit and blind dissection was tried for formation of neovagina.

Dilator of maximum 4 mm size could be negotiated through the previously formed blind vagina which was

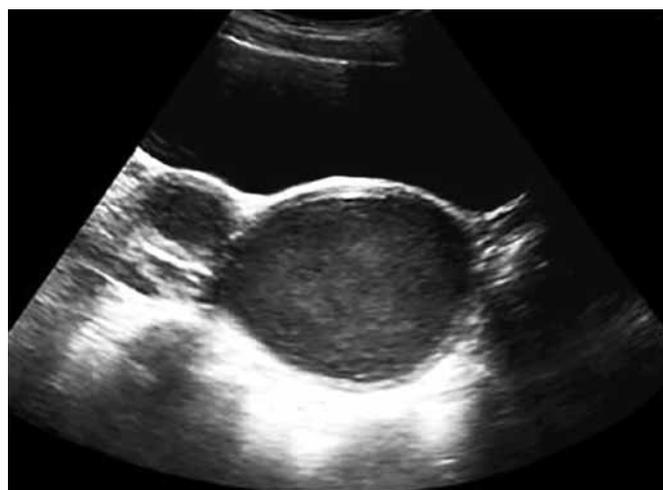


Fig. 2: Ultrasonogram of hematometra

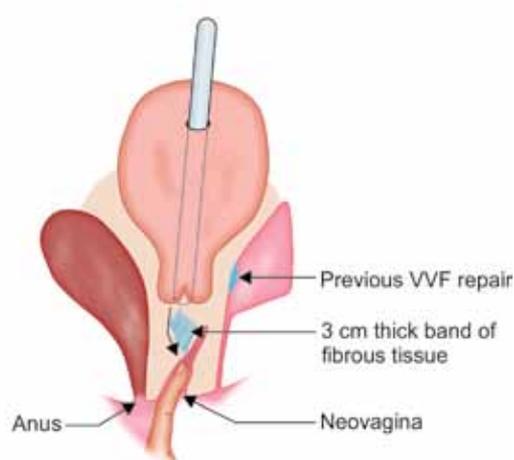


Fig. 3: Pictorial presentation of the fourth surgical procedure

leading toward the base of the bladder with old healed VVF repair scar. There was a 3 cm thick fibrous band found to be intervening between the tip of the Hegar's dilator passing from above and tip of the dilator in the new vaginal tract from below with a whole picture as a diagrammatic diagram (Fig. 3). The fibrous band could not be resected as any trial of dissection was heading toward the base of the bladder. To prevent any injury to the bladder further attempt was abandoned. In view of repeated failure of vaginal reconstructive surgery and recurrence of hematometra, a judicious decision was taken to proceed for hysterectomy (Fig. 4). Postoperative period was uneventful, except for her psychological trauma. Being a young girl she was counseled regarding her way of life. She was discharged from the hospital on eighth postoperative day with a healthy scar.

## DISCUSSION

There are several methods for surgical construction of neovagina, and the differences among the several surgical approaches lie in the tissues used to line the neovagina. The various techniques described are Abbe-McIndoe, McIndoe and Bannister procedure. The modified McIndoe has been the preferred method, because of its low complication rate and relative simplicity. In addition, the McIndoe technique does not require a transabdominal approach, which covers surgical risk. However, it has disadvantages like scarring in the grafted area, keloid formation and chances of infection. A Canadian study of 23 patients undergoing McIndoe technique showed vaginal stricture in 3 cases.<sup>4</sup> In another study of 7 cases, one developed vaginal stenosis following a McIndoe procedure.<sup>5</sup> In this case, there was sepsis, VVF formation and vaginal stricture from the primary surgical procedure. Patients who managed the mold correctly had constant sexual activity by the neovagina in terms of its length, diameter and elasticity.<sup>6</sup> In this case as the

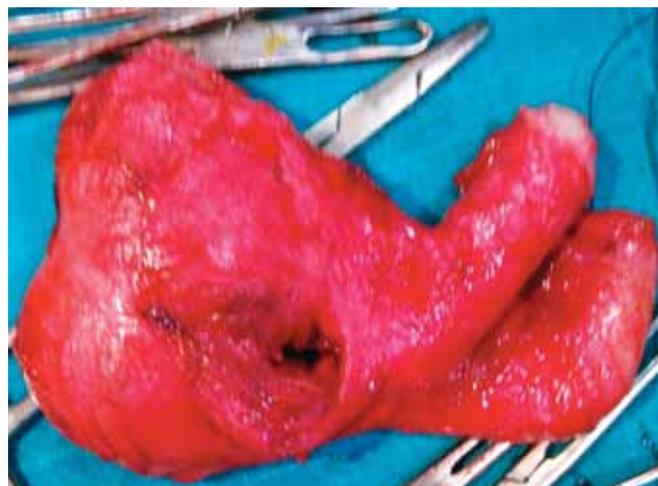


Fig. 4: Postoperative specimen of the uterus showing stab injury

neovagina was not adequate, she was neither sexually active nor using mold.

## CONCLUSION

The surgical correction of vaginal agenesis poses a great technical challenge, as a vagina of an appropriate length and adequate size has to be constructed, which should function normally. The modified McIndoe technique is a simple and effective procedure for the treatment of vaginal agenesis; nevertheless, proper surgery is the spine of the treatment, as in the present case, sepsis and VVF were introduced as surgical errors that were corrected to save the girl.

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