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**Case Series**

# A novel combined abdominal and vaginal approach for pelvic organ prolapse in young patients

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## ABSTRACT

In India, the incidence of genital prolapse is 1.5 –2 % in nulliparous women and 5–8 % in young multiparous women which is the highest in the world. Though pelvic organ prolapse (POP) is not a life-threatening condition, its impact on life-style and self- esteem of a woman is paramount. There is a gamut of conservative surgical treatment options for POP for patients where the uterus needs to be preserved. Surgical repair in young women is more challenging as anatomical correction and preservation of fertility and sexual functions have to be addressed with a durable solution. In our case series, all three patients had third degree uterocervical descent with elongated and hypertrophied cervices. Hence neither abdominal nor vaginal repair alone was expected to be sufficient for restoring patient's anatomy and sexual functions. Therefore, we came up with a novel combined abdominal and vaginal approach by carrying out cervical amputation vaginally and Virkud's composite sling abdominally. The position and healing of the neo cervix was found to be excellent in all three cases during their post operative follow up. Through this case series, we highlight that the best surgical option for the treatment of POP should be tailored according to the patient's need and expertise of the surgeon, as there are no clear guidelines for the choice of surgery for POP.

**Keywords:** Young uterocervical prolapse, Cervical elongation, Cervical amputation, Virkud's composite sling

## INTRODUCTION

In India, the incidence of genital prolapse is 1.5-2% in nulliparous women and 5-8% in young multiparous women which is the highest in the world.[1] The high prevalence in India is accountable to the low socioeconomic status, anaemia and malnutrition and multiple poorly monitored vaginal deliveries causing ill developed or damaged pelvic floor tissues. Though not a disease, pelvic organ prolapse (POP) affects women's quality of life significantly. Its impact on her daily activities, sexual performance, exercise and psychological state cannot be ignored.

There is a gamut of conservative surgical treatment options for POP for patients where the uterus needs to be preserved. The aims of surgical correction of POP are relief of symptoms, restoration of normal vaginal anatomy, preservation of coitus, fertility and urinary and anal continence. The surgical options can be either vaginal or abdominal, laparoscopic or open. In spite of having numerous well established surgical options, every surgeon is faced with a challenge of offering the best to their patients.

We were also challenged with a similar scenario where neither abdominal nor vaginal repair alone was expected to be sufficient for restoring patient's anatomy and sexual functions. We present here a case series of three patients who had third degree uterocervical descent with elongated and hypertrophied cervices. These patients were young, parous with completed obstetric careers but desirous of preserving sexual and menstrual functions. After repositing uterus in its anatomical position during examination, it was found that external os was just below or at the level of introitus due to intravaginal elongation of

cervix. Abdominal sling surgery would have restored the position of isthmus but couldn't have addressed cervical elongation. Similarly, Manchester Fothergill's repair alone would not have corrected uterocervical descent completely due to laxity of Mackenrodt's and uterosacral ligaments resulting in recurrence of prolapse in future. Hence, we came up with a combined abdominal and vaginal surgery which is first of its kind.[2]

## CASE SERIES

### *Case 1*

35 years old P1L1A1 patient from lower middle class presented to our hospital with complaints of something coming out of vagina for 5 months with no bladder or bowel complaints. She had regular menstrual cycles with average flow. She had a 9 years old male child delivered vaginally without any complications followed by an MTP. She was not desirous of further pregnancy. Her general examination was insignificant. Per speculum examination revealed third degree uterine descent with no cystocele or rectocele. Uterocervical length was 5 inches, of which cervix measured 2.5 inches. Cervix was congested and hypertrophied with infravaginal elongation. On per vaginal examination, the uterus was found to be normal in size.

### *Case 2*

30 years old P2L2A2 patient from lower class presented to our hospital with complaints of something coming out of vagina on coughing and straining since, 6 months. She had difficulty in micturition and sense of incomplete evacuation since, 5 months. She didn't have any bowel complaints. She had regular menstrual cycles. She had conceived 4 times in her 8 years of marriage. She had two vaginal deliveries with two years of Interconceptional period followed by two spontaneous abortions requiring suction evacuation.

She was not Tubectomised. Her general examination was insignificant. Per speculum examination revealed third degree uterine descent with grade 2 cystocele with no rectocele. Uterocervical length was 5.5 inches, of which cervix measured 3 inches. Cervix was irregular and hypertrophied and decubitus ulcer was present. On per vaginal examination, Uterus was found to be retroverted and normal in size on per vaginal examination.

### *Case 3*

32 years old P2L2 patient from lower middle class with complaints of something coming out of vagina since, 4 years which had gradually increased over a period. She had no bladder or bowel complaints. Her menstrual cycles were regular. She had two vaginal deliveries with an Interconceptional period of 3 years. Both deliveries were uneventful and she underwent puerperal tubal ligation after the second delivery. Her general examination findings were insignificant. Per speculum examination revealed third degree uterocervical descent with no cystocele or rectocele. The uterocervical length was 5.5 inches and cervix measured 2.5 inches. The uterus was normal in size and retroverted.

In all three above cases, presence of UCL more than 5 inches, hypertrophied and irregular cervix and intravaginal cervical elongation led to our conclusion that sling surgery alone may not be sufficient for POP correction. Hence, we decided to carry out cervical amputation vaginally followed by Virkud's composite sling abdominally. Preoperative work up and PAP smear were done in all patients.[3]

### *Operative procedure*

The procedure was performed in all the cases in the postmenstrual phase under spinal with epidural anaesthesia. The patient was positioned in lithotomy position for the vaginal approach. Total UCL and cervical length were confirmed. The cervical canal was dilated and curettage was done to ensure uterine drainage.

The endometrium obtained was sent for histopathology. A circular incision was taken on the cervix and vaginal wall was dissected on all sides for 3-4 cm. Anteriorly the bladder was dissected and pushed upwards. The Mackenrodt's ligaments on both sides were clamped, cut and ligated with vicryl 1 sutures and ends kept long.

The cervix was amputated with monopolar cautery depending on the cervical elongation so as to keep behind 2.5 cm of cervix. Fothergill's stitch was taken including bilateral Mackenrodt's ligaments and substance of cervix anteriorly. The long ends of bilateral Mackenrodt's ligaments were also tied together anterior to the amputated cervical stump to keep the uterus anteverted.

Anterior colporrhaphy was done in the second patient as she had grade 2 cystocele. After checking haemostasis in the amputated cervical stump, the posterior and anterior Sturm Dorf sutures were taken to cover the amputated cervix with the redundant vaginal mucosal flaps (Figure 1, 2).

Then the patient was given supine position for performing the Virkud's composite sling surgery.[3] The abdomen was opened by Pfannenstiel incision. After identifying the sacral promontory, the peritoneum in front of L5 vertebra was opened vertically. The Mersilene tape was fixed to the glistening anterior longitudinal ligament of spine with a permanent suture, mersilk no.1 (Figure 3A and B).

The tape was then passed sub peritoneally along the right side and brought anteriorly upto the junction of the uterosacral ligaments and fixed to the isthmus posteriorly with the same sutures. From there, the tape was passed between the two leaves of broad ligament on the left side and after piercing the transversalis fascia in the internal

inguinal ring, it was passed medially between the anterior rectus sheath and rectus muscle. Right round ligament plication was done to prevent dextrorotation of the uterus. Bilateral tubal ligation was done in second patient. After closing the parietal peritoneum, the Mersilene tape was fixed to the under surface of the rectus sheath with permanent sutures (Figure 4). Abdomen was then closed in layers. Average operating time was 2-2.5 hours and average blood loss was 75-100 ml.

All three patients were followed up for 18 months post operatively. The position and healing of the neo cervix was found to be excellent in all three cases (Figure 5).

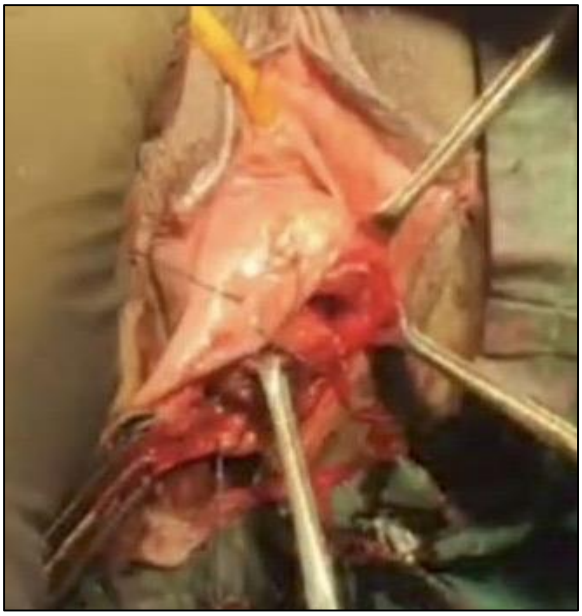

**Figure 1: Sturm Dorf sutures being taken to cover amputated cervical stump.**

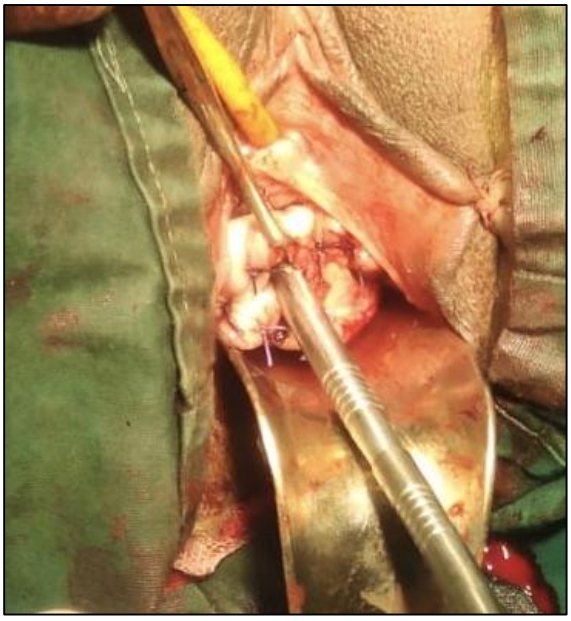

**Figure 2: Neo cervix with dilator in cervical canal.**

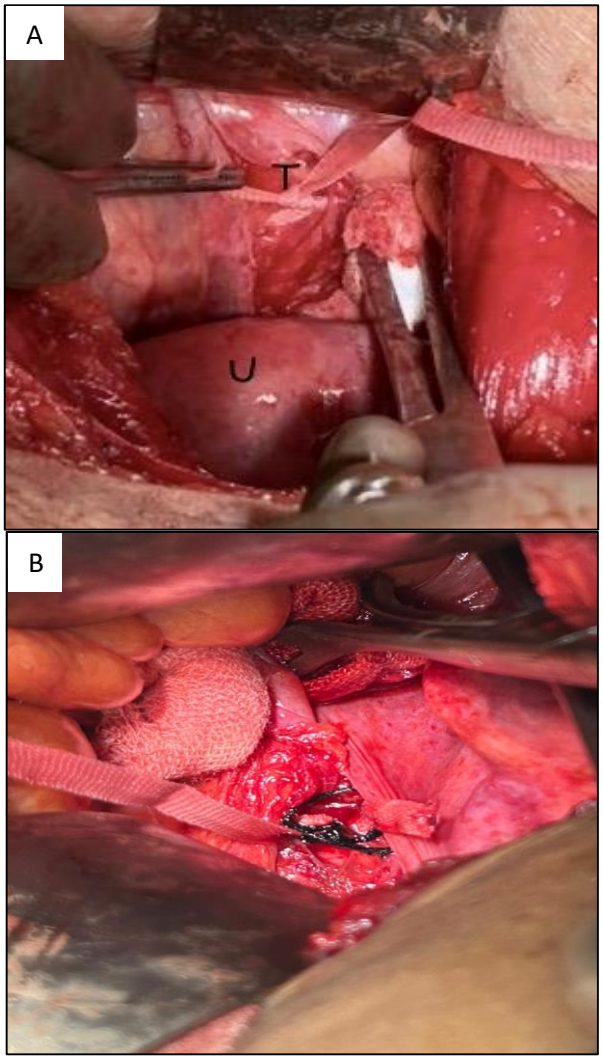


**Figure 3 (A and B): Attachment of Mersilene tape to anterior longitudinal ligament of spine at L5 (U- uterus, T- tape).**

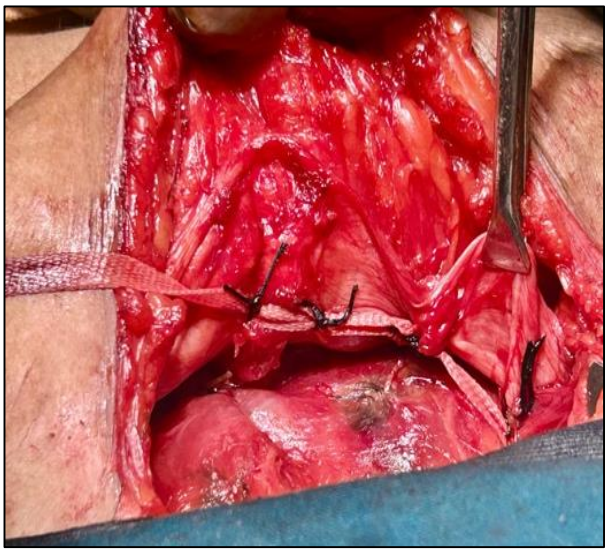

**Figure 4: Fixation of Mersilene tape to undersurface of rectus sheath.**

**Figure 5: Position of cervix on per speculum examination during follow up at 18 months.**

## DISCUSSION

Pelvic organ prolapses (POP) when defined by symptoms has a prevalence of 3-6 % and up to 50% when based upon vaginal examination.[4] Though POP is not a life-threatening condition, its impact on life- style and self-esteem of a woman is paramount.

Patients with prolapse usually present with the complaint of 'something coming out of vagina'. Other symptoms include urinary symptoms, bowel symptoms and effects on sexual functions.[5] The severity of symptoms does not always correlate with the stage of the prolapse. The general principle in the management of POP is that treatment should be given only to those who are symptomatic.

Treatment can be either surgical or non- surgical. Non-surgical intervention includes preventive strategies, physiotherapy and the use of pessaries. The mainstay of treatment for symptomatic prolapse is surgical.[6] It is estimated that women have an 11.1% life-time risk of undergoing surgery for POP.[7] Surgical repair in young women is even more challenging as anatomical correction and preservation of fertility and sexual functions have to be addressed with a durable solution.

The options for pelvic reconstructive surgery in young patients performed through vaginal route include Manchester Fothergill's repair, Shirodkar's uterosacral advancement (Modification of Fothergill's repair), sacrospinous hysteropexy (with or without mesh) and uterosacral ligament suspension, while abdominally performed uterus preserving surgeries include various slings like Shirodkar sling, Purandare cervicopexy, Khanna, Soonawalla, Joshi and Virkud's slings and sacral hysteropexy (abdominal, laparoscopic and robotic).[8,9]

The common teaching in institutes in our country is that all procedures should be performed establishing a single route (vaginal or abdominal). Thus, the choice of surgical route is mainly of concern in women who require repair of apical prolapse, since isolated repair of anterior or posterior vaginal wall prolapse is traditionally performed transvaginally.[10]

In our case series, we came up with a novel combined abdominal and vaginal approach for correction of POP as our patients had infra vaginal elongation along with apical uterocervical descent. Cervical amputation with creation of neo cervix corrected infravaginal elongation and Virkud's sling took care of apical prolapse. Virkud's sling is a combination of Shirodkar's sling on right side and Purandare's cervicopexy on left side providing both dynamic and fixed support to the uterus fulfilling the desired aim of durability of the surgical correction in young patients.

## CONCLUSION

There are no clear guidelines for choice of surgery for POP. Hence the best possible option is to be tailored according to the patient's need and expertise of the surgeon. The advantages and disadvantages of the operative procedure as well as chances of failure and recurrence should be discussed with the woman prior to surgery. The goal is to help woman restore her quality of life. We wish to extend our surgical technique to a greater number of patients so as to include it in recommendations for management of POP in young patients. Through this research, we also acknowledge the huge contribution made by Indian surgeons to the prolapse surgeries.

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