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## CASE STUDY

# NADKARNI'S SLEEVE EXCISION ANASTOMOSIS FOR PELVIC ORGAN PROLAPSE DUE TO CERVICAL ELONGATION

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### ABSTRACT

Genital prolapse is a disorder of pelvic support and is one of the most frequent disorders encountered in our gynaecological practice. Our social and cultural background predisposes to this condition to occur at an age which is reported to be earlier than any other part of the world. It is fairly common to see a long cervix in a young nullipara without uterine prolapse. The treatment of cervical elongation is a challenge in case of nulliparous woman in whom fertility is to be preserved. Nadkarni's sleeve excision anastomosis is a newer technique beneficial to the young woman interested in preserving fertility and whose prolapse is due to a long cervix extruding out of the introitus.

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## INTRODUCTION

The length of the uterine cervix is a widely-studied characteristic in Obstetric and Gynaecology. There is a commonly-held opinion that pelvic organ prolapse (POP) is associated with cervical elongation (Rogers *et al.*, 2003). Elongation of the cervix, may or may not be associated with utero-vaginal prolapse. In keeping with the basic principles of surgery, the procedure for treatment of cervical elongation should involve an attempt to recreate the normal anatomy, to narrow the calibre of an enlarged vagina, if present, and to strengthen the support structures. It is obligatory, that the surgery being performed preserves future fertility in case of young patients (de Boer *et al.*, 2009). Modern women, are keen on retaining their uteri, even after completing their families, and this novel procedure may be offered to them. Nadkarni's sleeve excision anastomosis is a lesser known, newer technique. The patient suited to receive this surgery, is the one, who complains of something coming out PV, is young, interested in preserving fertility and whose prolapse is due to a long cervix extruding out of the introitus. The vaginal walls are, typically, not prolapsing, as they are well supported by taut Mackenrodt's and uterosacrals. This unusual procedure, entirely different in concept from the better known, Fothergill's –Manchester operation, requires some learning, but if performed by an expert and skillful surgeon, can be the procedure of choice for young prolapsed nulliparas.

We present, here, a case of a nulliparous lady, with third degree prolapse due to an elongated cervix. As she satisfied all the criteria for the procedure, we treated her with Nadkarni's sleeve excision anastomosis. Sacrospinous colpopexy, was done additionally, to elevate the vaginal fornix and fix it to the ligament as a prophylaxis against future vaginal descent.

## CASE REPORT

Our patient, 22 years old, Para0Abortion3 (POA3) complained of something coming out per-vaginum, low backache, vaginal pain, sexual difficulty since one and half year. Menstrual cycles, bowel, bladder function were normal. On speculum examination, cervix was protruding out of the vagina and cervical elongation was substantial. Uterus was well-supported and there was no vaginal prolapse. Per-vaginal exam showed normal sized uterus, both fornices free, and taut Mackenrodt's and uterosacral ligaments. Pap-smear was suggestive of inflammation which responded to anti-microbials. Abdomino-pelvic ultrasound was unremarkable. Patient wanted to get relief of symptoms with preservation of her fertility. In keeping with her specific requirements and looking to the physical findings, we opted to perform 'Nadkarni's sleeve excision anastomosis' procedure after, thoroughly discussing the same with her. At the start of the procedure, utero-cervical length (UCL) was measured at an enormous three and half inches. The segment of cervix ear-marked for excision, was delineated using surgical marker ink. Cervix was dilated to 11mm. After exposure of vesico-cervical space, blunt dissection was used to free the ear-marked segment of cervix

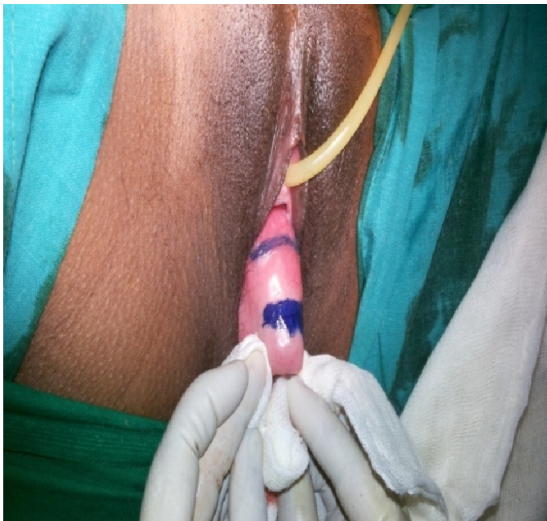
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from any fascia. A clean denuded segment of cervix was thus exposed.



**Figure A.** Pre-op POP with elongated Cervix well out of introitus

**Figure C.** Para-cervical fascial tissue containing neurovascular bundle isolated, dissected and preserved



**Figure B.** Sleeve of cervix demarcated for excision

**Figure D.** Sleeve excision done with cervical dilator in situ



**Figure E.** Anastomosis completed with Foley's in cervical canal



**Figure F.** Cervix placed high up in the vaginal with foley's ensuring cervical patency



**Figure G. Status of cervix at the time of discharge, cervix completely high up, External os intact**

The lateral pillars, containing the main vascular supply of the cervix, were carefully lifted off the cervix and meticulously preserved. As distal cervix will be preserved, adequate blood supply must be retained. Before proceeding for sleeve excision, both descending cervical were ligated, to minimize haemorrhage from the cervical stumps. The sleeve of cervix was then excised keeping the 11 no. dilator in place. Anastomosis of distal stump with proximal uterine segment was completed using 5-6 absorbable sutures. Foley's catheter was passed across the newly formed cervical canal to ensure its patency and kept for 5 days. The space lateral to the enterocele sac was used to enter the para-rectal area, sacrospinous ligament approached and two absorbable sutures used to anchor the vault to it. The technique has been described by us in publications (Shalini Mahana *et al.*, 2014) Fibrin sealant, Tisseel (Baxter, VH) was introduced by spray technique to ensure hemostasis. It also acts as a tissue glue and promotes wound healing. The procedure took 45 minutes and blood loss was around 50cc. Patient was discharged on Day 6. Patient remained comfortable post-operatively. She was highly satisfied with the procedure.

## DISCUSSION

The normal length of the cervix is about 2.5cm. The vaginal and the supravaginal parts are of equal length. The elongation may affect either part of the cervix. Due to antifixion or retroflexion, the long axis of the cervix is rarely the same as the long axis of the body of the uterus (De Lancey J, Richardson, 2010). Elongation of the supravaginal part is commonly associated with the uterine prolapse. Infra-vaginal elongation tends to be congenital in origin. The supravaginal part becomes elongated due to the strain imposed by the pull of the cardinal ligaments to keep the cervix in position, whereas the weight of the uterus makes it fall through the vaginal axis (Maher *et al.*, 2010). Some women may have no symptoms of a prolapsed

cervix, especially if it is minor. If symptoms do occur, they may include a feeling of pressure in the vagina, pain during sex, problems urinating or backache. Women with severe cases may also feel or see the uterine tissue coming out of the vaginal opening. In less severe cases, this may include lifestyle changes such as Kegel exercises to help strengthen the weakened pelvic muscles or weight loss to reduce the strain on the muscles. A vaginal pessary, a device inserted into the vagina to help hold the cervix and uterus in place, may also be recommended (Hagen *et al.*, 2008). When these more conservative treatments don't work or the prolapsed cervix is severe, surgery to repair the weakened muscles is recommended. This is quite challenging in those women who want to preserve their uterus and more so, in those young patients who want to conceive.

The Manchester Fothergill procedure is fertility-sparing surgical approach to treatment of pelvic organ prolapsed (Christine C. Skiadas *et al.*, 2006). However, this operation involves near-complete amputation of the cervix, leaving behind a small stump that is prone to dysfunction, therefore defeating the very purpose of surgery. The incidence of spontaneous miscarriages, cervical dystocia, cervical tears, incomplete rupture of uterus and secondary infertility is increased. Further, pregnancies that do occur are associated with high chances of operative delivery and caesarean sections (Tipton and Atkin, 1970).

The Sleeve operation, was devised because, it was considered that amputation of cervix in the Manchester repair was a significant impediment to future fertility (Fisher, 1951). Manchester repair should be preferred in women who are multiparas, and it is unlikely that many wish to conceive again. Sleeve operation is superior to the Manchester repair in maintenance of fertility and the ability of the woman to have a normal vaginal delivery (Gautam, 1992).

Nadkarni's sleeve surgery basically involves removal of the middle column of the cervix, not the whole cervix. Thus this operation retains the external os and portiovaginalis. The profertility transformation zone and mucus secreting endocervical canal remains intact and functional. Essentially, the cervix remains untouched and only the excess is trimmed. Therefore, it offers great advantage to a woman keen on fertility. As such, the cervix remains anatomically and functionally intact. It is expected that this cervix will not hinder future pregnancy (Kristina Craford *et al.*, 2006),

## Conclusion

This interesting procedure, though done uncommonly, is worth considering, in the appropriately selected patient, as a viable alternative to the well-known Fothergill's – Manchester operation. Reporting of such cases in literature, by means of publications, is encouraged, to study it further. Perhaps, it could become the treatment of choice, for women with long cervixes, interested in retaining their uteri, either for future fertility or otherwise!

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