

Sacrohysteropexy with synthetic mesh in Aba, South-Eastern Nigeria: A report of three cases and review of the literature

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Abstract

The surgical treatment of uterovaginal prolapse in women who wish to preserve their uteri for fertility presents a challenge to a gynecologist. This is particularly more challenging in Nigeria and the rest of Africa where there is not only a strong cultural aversion to hysterectomy but women also prefer large family size and male babies. This underscores the need for fertility friendly, uterus-preserving procedures. Three young women under the age of 40 presented with uterovaginal prolapse. They were of low parity and wanted to preserve their uteri for future reproductive function. They had open abdominal suspension of their uteri to the sacrum using a synthetic polypropylene mesh. A pus-string suture was also used to obliterate their pouch of Douglas to prevent future enterocele. Pelvic anatomy was restored and normal vaginal axis was achieved. They had uneventful post-operative period. In resource-limited settings, open abdominal (rather than laparoscopic) sacrohysteropexy with synthetic mesh is an effective and safe alternative to Manchester operation and other vaginal procedures in women who desire to preserve the uterus for future reproductive function.

Key words: Hysteropexy, synthetic mesh, utero-vaginal prolapse

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Introduction

Uterovaginal prolapse is a common health problem affecting up to 40% of parous women over 50 year old. It can affect quality of life by causing symptoms of pressure and discomfort and by its effects on urinary, bowel, and sexual function.^[1]

The current treatment options include pelvic floor exercise, use of pessaries, and surgery. The conventional surgical treatment is vaginal hysterectomy.^[2] The surgical treatment however in women who wish to retain their uteri and/or fertility presents a challenge to the gynecologist.^[2,3] This is particularly more challenging in Nigeria and the rest of Africa where a high premium is placed on child bearing and where women prefer large family size and male babies.^[4,5] The oldest uterus preserving surgical procedure is the Manchester operation which involves amputation of cervix, plication of the cardinal, and the uterosacral ligaments, and

colporrhaphy.^[6] Manchester operation is however associated with a decrease in fertility, prolonged labor from stenosis of the cervix, cervical incompetence, and high recurrence rate.^[6,7]

In the last couple of decades, other uterus-preserving surgical procedures with less deleterious effects have evolved. They include vaginal sacrospinous hysteropexy, laparoscopic suture hysteropexy, laparoscopic mesh sacrohysteropexy, and open abdominal mesh sacrohysteropexy.^[3,6,8-10]

In Nigeria and other African countries, there is scanty or no reports of these procedures. Moreover, in such resource-limited settings where there is paucity of equipment and expertise for laparoscopic procedures, sacrohysteropexy performed through laparotomy may be the feasible option.

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We therefore report three cases of uterovaginal prolapse successfully managed by open abdominal sacrohysteropexy with synthetic mesh.

Case Report

Case 1 (AO)

A 38-year-old nulliparous woman presented with a 4 month history of spontaneous vaginal protrusion. The vaginal mass was pink in color and increased with defaecation, urination or coughing, and had progressively increased in its descent but reduced spontaneously in the recumbent position.

She had associated urinary frequency and non-satisfaction with coitus. There were no associated stress incontinence, dysuria, low back pain, vaginal discharge, and bowel symptoms. There were also no associated histories of chronic cough, abdominal swelling, weight lifting, or chronic constipation.

She had been married for 3 years without achieving any conception. Prior to her marriage she had an episode of termination of pregnancy which was uneventful. She also had right inguinal herniorrhaphy 7 years prior to presentation which was not associated with any complication. Examination revealed intact hernia orifices and a pinkish tubular mass protruding from the vagina about 5 cm beyond the introitus. There was no demonstrable stress incontinence. On speculum examination in a left lateral position, there was a mild degree of cystocele and enterocele but no rectocele.

Her packed cell volume (PCV), random blood sugar, urinalysis and serum electrolytes, and creatinine were within normal limits. The culture of her midstream urine yielded no growth after 48 hours of incubation.

Case 2 (HE)

HE was 20 year Para 2, alive O single woman who presented with a 9 month history of chronic cough and a 5 month of protrusion from the vagina. The cough was associated with weight loss, night sweats, and hemoptysis. The vaginal protrusion followed her last confinement prior to presentation which was unsupervised at home and resulted in a fresh still birth. The vaginal mass was reducible and was associated with urinary frequency, urgency, and avoidance of coitus. It was not associated with stress incontinence, dysuria, vaginal discharge, and bowel symptoms.

Her first confinement which occurred 3 years earlier was also an unsupervised home delivery and the baby died 6 months later from febrile illness. Examination revealed an ill looking, cachectic young woman who was 1.6 m tall and weighed 43 kg. Her body mass index (BMI) was 16.8 kg/m². She also had bronchial breath sounds and crepitations in her upper and mid-lung zones. Vaginal examination revealed a pinkish

tubular mass protruding from the vagina about 8 cm from the introitus. There was no demonstrable stress incontinence. There was large enterocele and mild cytocele. Her sputum for acid fast bacilli was positive and her chest x-ray showed bilateral upper and mid zone cavitations. She had no detectable antibody to human immunodeficiency virus. She was referred to a chest unit where she was commenced on antituberculosis management. She completed the intensive phase of her tuberculosis treatment with Isoniazid, Rifampicin, Pyrazinamide, and ethambutol and sputum for acid fast bacilli was negative prior to surgery.

Case 3 (AG)

AG was a 37-year-old para 1 alive one woman who presented with a 5 year history of vaginal protrusion. The protrusion occurred spontaneously and was associated with low back pain, urinary frequency, dysuria, and non-satisfaction with sex. There was no associated urinary incontinence, bowel symptom, chronic cough, weight lifting, or abdominal swelling.

Her last confinement 5 years ago was by cesarean delivery due to prolonged labor with fetal distress. Examination showed a cervix that was beyond the introitus without strain, with no demonstrable stress incontinence. There was associated mild cystocele and enterocele.

The culture of her midstream urine yielded no growth and her other ancillary investigation results were within normal limits.

Procedure

In view of their parity and desire to retain their reproductive function, they were counseled for open abdominal hysteropexy.

The procedure was carried out under general anesthesia with endotracheal intubation. The abdomen was opened via a midline subumbilical incision. The tubes and ovaries were noted to be normal. A balfour retractor was placed and the bowels were kept back with a folded towel. The enterocele was closed with a purse string suture O nurolon (Ethicon, Johnson and Johnson, Somerville, NJ, USA) at the pouch of Douglass. The peritoneum over the posterior aspect of the cervix was opened, a strip of sterile polypropylene mesh (Ethicon, Somerville, NJ, USA) was sutured to the posterior cervix at the level of uterosacral ligament with three sutures of O nurolon. The mesh was cut so that it could be sutured to the inferior area of the sacral promontory with O nurolon [Figure 1]. In placing the suture on the sacral promontory, care was taken to avoid the right ureter, the common iliac veins, middle sacral vein, and the crouch of the common iliac veins which is just above the sacral promontory. The estimated blood loss was between 100 and 150 ml. The post-operative periods were uneventful.

Discussion

Uterovaginal prolapse is a common health problem affecting up to 40% of parous women over 50 year old.^[1] A prevalence rate of 1.6% has been reported from a Nigerian teaching hospital.^[11] There is however paucity of information on the population prevalence in Nigeria. In a community-based study of utero-vaginal prolapse from Gambia, West Africa, a high prevalence of 46% was observed with 14% being severe enough to warrant surgery.^[12] The etiology of utero-vaginal prolapse is complex and multifactorial. Possible risk factors include pregnancy, childbirth, congenital or acquired connective tissue abnormalities, denervation or weakness of the pelvic floor, aging, hysterectomy, menopause, and factors associated with chronically raised intra-abdominal pressure.^[6,13] Interestingly, all of our cases were under 40 years of age and were pre-menopausal. One of our cases however had chronically raised intra-abdominal pressure from tuberculosis and another one had prolonged labor.

The treatment of uterovaginal prolapse depends on the severity of the prolapse, its symptoms, patient's preference, age, comorbidities, activity level, desire for future fertility, and surgeons preference and capabilities.^[14,15]

The treatment of genital prolapse aims at relieving symptoms, restoring anatomy, maintaining or restoring bladder and bowel functions, and maintaining vaginal capacity for sexual function.^[8] Treatment of uterovaginal prolapse could be by operative and non-operative techniques.

The non-operative techniques in the treatment of genital prolapse include the use of vaginal pessaries, pelvic floor exercises, and weight reduction.^[14] The vaginal pessary is useful during pregnancy, puerperium, and when the patient refuses definitive surgery. It is also useful in promoting the healing of decubitus ulcer and when operation may be unsafe.

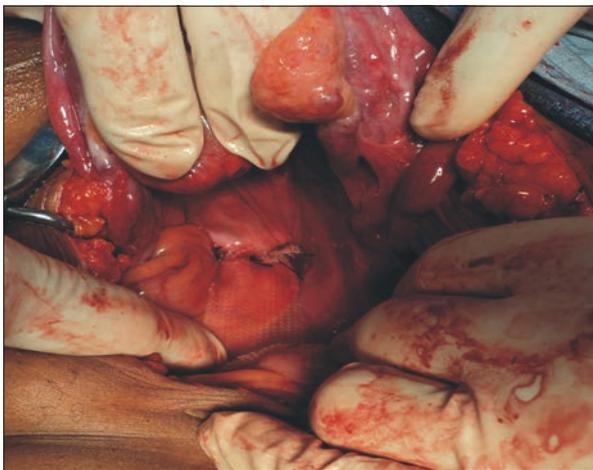


Figure 1: Sterile synthetic polypropylene mesh being sutured to the cervix and sacral promontory

The conventional surgical treatment for genital prolapse is vaginal hysterectomy.^[2,10,16] However, vaginal hysterectomy alone fails to address the pathological cause of genital prolapse as the prolapse in itself is not a cause but a result. Indeed, up to 40% of women undergoing hysterectomy subsequently present with vaginal vault prolapse.^[2,6] Moreover, it is currently being considered that the uterus and cervix may have an important role in sexual function and well being. In some women, removal of the uterus may even influence sexual and personal identity.^[6] In addition, vaginal hysterectomy is not appropriate for younger women who desire to preserve their fertility. In Nigeria and the rest of Africa, where there is a strong aversion to hysterectomy and women prefer large family size and male babies.^[4,5] vaginal hysterectomy may not be acceptable to women of low parity and those with only female children.

The concept of uterine preservation during surgery for uterovaginal prolapse is therefore relevant in our contemporary society. Several operative procedures have been proposed for women who desire uterine preservation using either the vaginal or abdominal approaches.^[6,17,18,19]

In 1888, Archibald Donald of Manchester, UK, first described the Manchester procedure as an alternative to vaginal hysterectomy for management of uterovaginal prolapse.^[6,7] The Manchester procedure or its modified form involves hydrodissection, cervical circumcision, bladder displacement, uterosacral ligament plication, cardinal ligament plication, anterior colporrhaphy, cervical amputation with stumdorf suture, and posterior colporrhaphy. This Manchester procedure however is associated with several major problems, such as high recurrence rate, dyspareunia, dysmenorrhea, decrease in fertility, pregnancy wastage from cervical incompetence, and prolonged labor. Furthermore, cervical stenosis is frequent and makes it difficult to obtain tissue from the cervix and endometrium for cytology and histology, respectively.^[6,7,14]

These factors make Manchester repair less desirable in young women who desire more children, like our patients.

Several alternative operations for prolapse repair with uterine preservation, using either a vaginal or an abdominal approach have been proposed.^[1-3] Transvaginal uterosacral plication has been reported to be associated with high risk of ureteric injury and neurologic morbidity.^[6]

Sacrospinous ligament fixation was first described by Sederl in 1958 and was popularized by Richter and Albright in Europe and Randall and Nichols in the United States.^[20] The procedure involves extraperitoneal dissection until the right sacrospinous ligament is identified and exposed, subsequently; the cervix and uterosacral ligament are unilaterally attached to the right sacrospinous ligament, about 2 cm medial to the ischial spine. This procedure is said to be effective and safe

and has been favorably compared with vaginal hysterectomy and concomitant sacrospinous fixation of the vault.^[20, 21] Sacrospinous hysteropexy is however associated with buttock pain in 10-15% of cases due to injury to surrounding nerves of the sacral plexus and branches of the pudendal nerve.^[20]

The advancement in laparoscopic equipment and skills has provided the added option of laparoscopic sacrohysteropexy with synthetic mesh. The advantages of this approach include superior visualization of the anatomy with laparoscopic magnification, better hemostasis resulting from visualization, and intra-peritoneal insufflation pressures, reduced post-operative pain, decreased hospital stay, reduced post-operative adhesions, more rapid recovery, smaller incisions, preservation of the anatomy of the vagina and sexual function and minimization of ureteric injury in comparison to vaginal approach as the uterus is directly visualized.^[2,6,9] In a 10 week follow up of 51 women who underwent laparoscopic sacrohysteropexy with synthetic mesh, Price *et al.* reported a success rate of 98%.^[6]

In resource limited settings, where laparoscopic equipment and skills are lacking, sacrohysteropexy with synthetic mesh can be accomplished by laparotomy as was done in our cases. This confers all the advantages highlighted above except for those attributable to laparoscopic equipment. To the best of our knowledge, this is the first report of abdominal sacrohysteropexy from Nigeria. In a 6 months follow up of 33 cases after abdominal sacrohysteropexy, Moiety *et al.* reported a success rate of 94%.^[17] In a long-term follow-up (8-160 months) of 30 young women who underwent the same procedure, Barranger *et al.* reported a success rate of 93%.^[22]

The complications of abdominal sacrohysteropexy include injury to the bowel, retroperitoneal haematoma, mesh erosion, wound infection, and recurrence of prolapse.^[17,18,20-22] There were no complications involved in our cases.

Pregnancy following uterus preserving surgery is still poorly understood. Caution should be exercised in pregnant women who have undergone any form of prolapse surgery because the effects of pregnancy and delivery on any reconstructive procedure are not clear yet.^[14] In 257 women who underwent uterus-sparing surgery, 24 pregnancies (9.7%) and 16 deliveries (6 caesarean section, 10 vaginal deliveries and 6 abortions have been reported).^[14] None of our patients is yet to conceive, so we will follow up on them.

Conclusion

In resource limited settings, open abdominal (rather than laparoscopic) sacrohysteropexy with synthetic mesh is an effective and safe alternative to Manchester operation and other vaginal procedures in women who desire to preserve the uterus for future reproductive function.

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