

Burden of Pelvic Organ Prolapse (POP) In Nepal: How to Prevent and Manage It? - A Review Article

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ABSTRACT

Pelvic organ prolapse is one of the common gynaecological problems in the world. Nepali women are one of the mostly affected populations from one or other type of prolapse due to many reasons including lack of antenatal checkup coverage and deliveries by trained health care personnel. Although definite evidences are lacking in many instances, selective modification of obstetric events or other risk factors could play a central role in the prevention of prolapse. The role of pelvic floor muscle training as a preventive treatment is still controversial; however, it has an essential role in the conservative management of prolapse. Although surgery has been the definite management of POP in majority conditions, the surgical trends are currently changing because of increasing need and demand of uterus preservation as well as due to the controversial issues surrounding the use of mesh. As medical sophistication has progressed, so has the ability to understand more completely and better treat POP. The evolution of Minimally Invasive surgeries (MIS) like laparoscopic and robotic surgery has been preferred and beneficial in various pelvic floor surgeries.

Key words: Pelvic organ prolapse (POP), prevention, non -surgical treatment, surgical-treatment

INTRODUCTION

Pelvic organ prolapse (POP) refers to the downward displacement of the pelvic structures (Cervix along with body of uterus, bladder, intestine, rectum and vaginal vault) that are normally located at the level of or adjacent to the vaginal vault. It occurs when the muscles, ligaments and fascia that hold these organs in their correct positions become weak. These conditions are common and affect a progressively larger percentage of women as age advances especially in the post-menopausal period. It has been generally agreed that there have been less studies and less reporting in comparison to the actual burden of this problem in Nepal.

Although many health indices of Nepal are improving recently, there has been no change in POP incidence. The Government of Nepal recognizes it a priority problem. According to the *Journal of Nepal Health* (May 10, 2012)-the problem of uterine prolapse exists throughout Nepal and negatively affects women's health and quality of life (QOL). It is estimated that about 10 % of the Nepali women suffer the painful and debilitating condition of uterine prolapse.

Bijoyeta Das writes June 9, 2014 in "Uterine Prolapse: The hidden agony of Nepalese women" that Audrey Gaughran, Amnesty International's director of global issues, says: "It is absolutely true that

uterine prolapse is a global issue, affecting women in many countries. But in Nepal a perfect storm of factors has come together to create a human rights crisis affecting hundreds of thousands of women and girls." "Gender discrimination, lack of access to health care and education, and decades of official neglect are some of the major causes for the high incidence of the condition in Nepal", she explains. According to a 2014 report *Unnecessary Burden* by Amnesty International, "gender discrimination is the cause and the consequence of uterine prolapse."

It is estimated number of 600,000 women are suffering from uterine prolapse, and about one third require immediate surgical treatment. [1] There has been some cross-sectional studies conducted on a community or clinical basis, and the estimated prevalence of uterine prolapse among women in Nepal varies somewhere between 10% and 37%. [2-4] However, the actual number is assumed to be higher since only women in the reproductive age group (15–49) were included in the study. A report on "Unveiling the veil" by the Center for Agro-Ecology and development (CAED) among 2,268 women in Siraha and Saptari districts in Nepal, 37% of women have uterine prolapse. [5] Another report from Nepal revealed that 40% of women with uterine prolapse are of reproductive age having given birth to their first child. [6] Similarly, Bonetti et al. [7] examined 2,072

women in West Nepal and detected that one in four of these women had different form of pelvic organ prolapse. Worldwide prevalence of POP is 1 in 3 women who have had one or more children and 41–50 % of women are over the age of 40 year (*International Urogynecological Association-2011*) whereas in Nepal the prevalence is 14% before the age of 20, 44% at the age of 20-29,45.1% after the age of 30, the mean age being 27.9 years (*N.J.Obstet.Gynaecol 2007*) These above mentioned study data clearly indicate that the problem of POP is huge in every part of the country.

Prevention strategy of Pelvic organ Prolapse

Pathophysiology and risk factors

The prevalence of pelvic organ prolapse is high in many part of the world including Nepal, still the knowledge about its pathophysiology is limited. Many studies have been conducted including a number of cross-sectional epidemiological studies which have reported several risk factors for pelvic organ prolapse (see table 1). [16] As pelvic organ prolapse usually presents many years after childbirth, recent large longitudinal and national cohort studies with long-term follow-up have improved our current knowledge. [8-10] Without identifying the risk factors, efforts at prevention are fruitless, and therapy can only be empirical. [11]

Table 1. Risk factors for pelvic organ prolapse [16]

Obstetric factors	Pariety Vaginal delivery Operative vaginal deliveries
Demographics	Age Postmenopausal status
Pelvic organ prolapsed surgery	Hysterectomy Culposuspension Rectopexy
Lifestyle factors	Obesity smoking : chronic obstructive pulmonary disease High- Impact exercise, physically strenuous(manual)
Genetics	Family history Asian race , white Caucasians
Chronic bowel dysfunction	Constipation defectory straining
Connective tissue disorders	Ehlers-Danlos/Benign joint hypermobility syndrome Marfan syndrome

Over the last few years, there has been increasing interest in the role of levator ani muscle injuries in the development of pelvic organ prolapse. Studies with magnetic resonance imaging (MRI) [12] and three-dimensional pelvic floor ultrasonography [13] have established the association between levator ani defects and pelvic organ prolapse. Women with levator ani defects are at least twice as likely to show clinically significant pelvic organ prolapse (relative risk [RR] 1.9) and experience recurrence after pelvic surgery (RR 2.3-3.3). [14] Levator ani trauma could represent the missing link between childbirth and pelvic organ prolapse and could be used as a surrogate marker in future longitudinal studies, or as an essential co-variable in the selection of treatment options of women with pelvic organ prolapse. [16]

Prevention

There have been many efforts to address this problem at various levels. Governments of Nepal as well as many national and international non-governmental organizations (NGOs) are investing a lot of fund and resources to find out the causes and formulate the preventive as well as curative strategies to deal with this problem. It is accepted that prevention should begin early in women's life and be continued to the later years. Many of the preventive measures also have a positive effect in women's general health.

Prevention strategies of POP have many components which include better obstetric management of childbirth, perennial hygiene, pelvic muscle strengthening exercise (Kegel's exercises), contraception and sterilization, education and behavioral modification in terms of maintaining a healthy weight, proper eating to avoid constipation and straining when going to the toilet, avoiding heavy lifting and squatting and quit smoking.

Any POP prevention program should start from obstetric management of childbirth because vaginal delivery has profound and primary effect on pelvic floor

anatomy. However, the concept of a planned caesarean section for the prevention of pelvic floor dysfunction is controversial, due to the risks associated with caesarean section. [15]

Pelvic floor muscle training (PFMT) has been proposed as a measure to prevent pelvic organ prolapse. However, a recently published study, [17] comparing a nurse-led intervention (pelvic floor muscle training and bladder training) at 5, 7, and 9 months after delivery to standard care, showed that the prevalence of prolapse symptoms or objectively measured pelvic organ prolapse did not differ between the groups at the 12-year follow-up. [17]

Certain surgical techniques have been linked to the development or recurrence of pelvic organ prolapse. [16] While abdominal subtotal hysterectomy does not prevent the development of prolapse compared to total hysterectomy, [18] a McCall culdoplasty at the time of a vaginal hysterectomy could prevent it. [19] Appropriate use of a vaginal apical support procedure at the time of prolapse surgery might reduce the long-term risk of recurrence. [20]

As pelvic organ prolapse has been associated with urogenital atrophy, it is possible that estrogens, alone or in conjunction with other measures, may prevent its development by improving the strength of weakened supporting ligaments, muscles and vaginal mucosa. [21] However, there are no studies in the literature to assess this hypothesis. If we generalize findings from studies regarding lower urinary tract symptoms and hormone replacement therapy, local estrogen treatments appear more promising compared to systemic administration. [22] There is a need for rigorous randomized controlled trials, with long-term follow-up, to assess estrogen preparations for the prevention of pelvic organ prolapse. [16]

Modification of other risk factors could also reduce the risk of pelvic organ prolapse. Reduction of straining and intraabdominal pressure could help prevent

the development of prolapse. The widely accepted practice of treatment of bowel dysfunction/chronic constipation has not been tested as systematic intervention to prevent pelvic organ prolapse. [16] The few published cohort studies with short-term follow-up have shown that weight reduction is associated with subjective improvement in prolapse symptoms [23] but no objective change was seen in examination using the pelvic organ prolapsed quantification (POP-Q) system. [24]

Control of chronic diseases and habits are helpful preventive strategies. Effective treatment of persistent cough may decrease incontinence and prevent progression of prolapse. Cessation of smoking certainly may be considered the part of the preventive effort. [16] Diabetic complications such as obesity, myopathy and neuropathy may be prevented by modern management strategies. [25]

The POP can be operated, but "What does 100 operations for POP help, if at the same time 1000 women get it?. The only way to help the situation is to educate the Nepali men and women on how to prevent it. Early marriages, giving birth in short intervals, carrying heavy loads just after the delivery, malnutrition, less rest during the maternity period are the most usual causes. It can be prevented by increasing the value of motherhood, by encouraging breastfeeding, by teaching to eat healthy nourishing food and teaching proper way of carrying heavy loads. Also by not expecting women to make hard physical work straight after the delivery, by decreasing the amount of teenage pregnancies, by birth control so that there are less babies born in the family and the time between their birth is longer. They have to be encouraged to practice smoke free lifestyle with no intoxicating agents at home. There is also a need to teach how to strengthen the muscles in pelvic organ area after the delivery.

Recommendations regarding prevention of uterine prolapse by Mr. Arjun Subedi in 'Barriers in Health Seeking from Health Facilities among Women with

Uterine Prolapse in Lalitpur District, Nepal' were:

- Awareness on causes of Uterine Prolapse is important target in newly married couples, husbands and mother-in-law, health workers, volunteers and traditional birth attendants, and POP affected women.
- It should be taken as an issue of families, society and the country as a whole rather than a problem of women.
- Social researchers need to introduce the POP problem and its factors to study it further from different sociological perspectives, to provide a basis for making POP a national issue.

Non-surgical treatment

Approaches to the non surgical treatment of POP can be either by pelvic floor muscle training which helps to improve the function and support of the pelvic floor muscles or by insertion of vaginal pessaries to support the prolapse. They are often offered for lower grades of prolapse and to women unwilling or unfit to undergo surgery. [16]

Pessaries

A wide variety of items of different, size shape and materials have been used to manage POP. At present, a range of vaginal pessaries are available which can be broadly divided into two types: support and space-occupying. [16] A recent Cochrane review has highlighted the lack of robust evidence regarding the effectiveness of vaginal pessaries. [26] Despite this, 77% of the members of the American Urogynecologic Society use pessaries as first line therapy. [27] As there is no evidence to support the use of a specific type, choice is based on experience and trial and error. When the insertion of the pessary is successful, there is significant improvement in prolapse symptoms, and in bladder, bowel and sexual function. [28]

Lifestyle and behavioral modification

Health education should be given to the women on proper ways of lifting weight and performing other household works, avoiding squatting, cessation of smoking and need of smoke free cooking system,

proper birth spacing and delayed returning to work after delivery, importance of contraception and maintaining perennial hygiene etc.

Treatment/ correction of preexisting condition

Timely identification and treatment of chronic diseases like Chronic Lung diseases, pelvic and perennial infection, pelvic/abdominal mass/ascitis, collagen diseases, and postmenopausal hormone replacement may help to prevent POP.

Pelvic floor Muscle Training (PFMT)/Kegel's exercise

Pelvic floor muscle(PFM) are not responsible for gross motor movements alone, but work in synergy, with other trunk muscles. Therefore, pelvic floor dysfunction may lead to symptoms during movement and perceived restriction in the ability to stay physically active (Bo& Nygaard 1990).The PFM are regular skeletal muscles and will therefore adapt to strength training in the same way as other muscles.The theoretical rationale for intensive strength training of the PFM is that strength training may build up the structural support of the pelvis by elevating the levator plate to a permanent higher location inside the pelvis .This would facilitate a more effective co-contraction of the PFM and prevent descent during increases in abdominal pressure.

There has been some studies on the role of PMFT to prevent or progression of POP severity. A number of single-centre [29,30] and multicenter (POPPY) [31] randomized controlled trials (RCTs) have assessed the value of several individualized PFMT programs, compared to lifestyle advice, for women with a symptomatic stage I-III prolapse and they found that one-to-one PFMT for 16 weeks to 6 months is effective for the improvement of prolapse symptoms. A greater proportion of women had an improvement in their prolapse stage (POP-Q) in the PFMT group (19–27%) compared to the control group (8–20%), with the difference being statistically significant in the study by Braekken et al. (P

= 0.035) [29] and not significant in the POPPY trial (P = 0.10) [31]

Surgical treatment

Although there has been great debate regarding the indications and need of POP correction surgeries, many systemic reviews and meta-analysis of many RCTs has shown that the surgery for POP can improve the quality of life. [32] In spite of the possibilities of many preventive measures, the life time risk of a women undergoing POP surgery is estimated to be 10-20%. [33,34] There are different surgical approaches for POP which includes both conventional as well as modern day techniques.

Principles of prolapse surgery

Surgical correction is the treatment of choice for advanced and symptomatic POP. However, there are inherited risks of surgery e.g. 11 % women operated for POP and 30% among them underwent another surgery for recurrence or complications. Hence, only those who request for surgery due to poor quality of life should be operated. Choosing the correct operation and site-specific repair of all the segments is the best insurance against failure. The goal is to establish quality of life by restoration of normal form and urinary, intestinal and sexual function (if desired).

Approach

Reconstructive or obliterative – Most women with symptomatic POP are treated with a reconstructive procedure. Obliterative procedures (eg, colpocleisis) are reserved for women who cannot tolerate more extensive surgery or who are not planning future vaginal intercourse. Surgical route for repair of multiple sites of prolapse – Reconstructive surgery for POP often involves repair of multiple anatomic sites of prolapse (apical, anterior, posterior)

Concomitant hysterectomy – When apical prolapse is repaired, the decision must be made whether to perform a hysterectomy as a part of the procedure or not.

Concomitant anti-incontinence surgery – Symptomatic POP often coexists with Stress Urinary Incontinence (SUI) and, in some women, anal incontinence. POP repair must

be coordinated with treatment of incontinence.

Use of surgical mesh – Surgical mesh is used in abdominal POP repair. Use in transvaginal procedures has increased, but questions have arisen about the safety of this approach.

Uterine preservation

The traditional practice of concomitant hysterectomy along with the repair of uterovaginal prolapse is changing. Education level and the belief that the uterus is important for a sense of self were predictors of preference for uterine preservation, while the doctor's opinion, risk of surgical complications, and risk of malignancy were the most important factors in surgical decision-making. [35] Dietz et al. reported similar functional outcomes and quality of life, but a higher rate of apical recurrences (21 versus 3%) after sacrospinous hysteropexy compared to vaginal hysterectomy. [36] The findings of this study were challenged by a more recent large RCT, which showed no difference in recurrence of apical prolapse after sacrospinous hysteropexy or vaginal hysterectomy. [37] Another uterine-sparing alternative is the laparoscopic sacrohysteropexy. A study comparing laparoscopic sacrohysteropexy (with the use of polypropylene mesh) to vaginal hysterectomy showed similar subjective and functional outcomes for the two groups with better apical anatomical outcomes after laparoscopic sacrohysteropexy. [38]

Post hysterectomy vaginal vault prolapse

Vaginal vault prolapse after hysterectomy can be repaired either through abdominal or vaginal approach. Abdominal sacrocolpopexy with polypropylene mesh repair is still preferred method by many which can be done with laparotomy or laparoscopic or robotic approach. With the invention of new technology, minimally-invasive surgery like laparoscopic and robotic sacrocolpopexy is gaining popularity in many developed world. A US population-based study showed a dramatic increase (6

times) in the number of minimally-invasive sacrocolpopexies from 2005 to 2010, while the number of abdominal sacrocolpopexies remained stable. [39] An RCT comparing abdominal sacrocolpopexy to laparoscopic sacrocolpopexy revealed similar anatomic and subjective outcomes, but a shorter hospital stay and reduced blood loss in the laparoscopic group. [40] Sacrospinous ligament fixation (SSLF) or uterosacral ligament suspension (USLS) are done through vaginal approach. Compared to SSLF and USLS, abdominal sacrocolpopexy with a polypropylene mesh has a higher success rate, with less post-operative dyspareunia but with longer operating and recovery times. [41]

CONCLUSION

The prevention of pelvic organ prolapse involves care of the entire body, a healthy, fit and well-nourished patient who is aware of ways to actually protect her pelvic floor is less likely to experience this potentially disabling problem, many of the strategies mentioned above should be part of care of patients from their obstetric years onwards. Prevention is always preferable to intervention in the operating room.

Although surgery has been the definite management of POP in majority conditions, the surgical trends are currently changing because of increasing need and demand of uterus preservation as well as due to the controversial issues surrounding the use of mesh to repair it. As medical sophistication has progressed, so has the ability to understand more completely and better treat POP. The evolution of Minimally Invasive surgeries (MIS) like laparoscopic and robotic surgery has been preferred and beneficial in various pelvic floor surgeries.

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