The general practitioner's approach to pelvic organ prolapse

Cronjé HS, MBChB, MMed(OetG), FCOG(SA), MD
Department of Obstetrics and Gynaecology, Faculty of Health Sciences, University of the Free State, Bloemfontein, South Africa
Correspondence to: Prof HS Cronjé, e-mail: gnoghsc.md@ufs.ac.za
Keywords: pelvic organ prolapse; prolapsed; cystocoele; uterine prolapse; enterocoele; rectocoele; perineal body

Abstract

Pelvic organ prolapse (POP) together with urinary incontinence is extremely common. About 11% of women will receive surgery for these conditions and a third of them will receive a second operation within two years. The general practitioner should be on the lookout for POP as patients may not reveal it. Parous patients with bladder symptoms, a fullness or pressure in the pelvis, or rectal symptoms (mainly obstructive defaecation) are candidates for POP, particularly in those with a previous hysterectomy. Patients in need for surgery (referral) are those with stage 3 and 4 prolapse (in or outside the introitus), or stage 2 prolapse with severe symptoms. Surgery for POP has undergone a transformation in recent years with the introduction of new surgical methods and the use of mesh to reinforce weakened pelvic support systems. However, conservative measures such as physiotherapy and medication still play a role for lesser degree of prolapse or urinary symptoms. A vaginal pessary can be used for uterine prolapse in extremely elderly women.

Ⓟ **Peer reviewed. (Submitted:2009-10-01, Accepted:2009-12-04). © Medpharm** **SA Fam Pract 2009;51(6):461-465**

Introduction

Pelvic organ prolapse (POP) is a benign disorder with significant morbidity (Table I). It is extremely common with 50% of parous women affected by the age of 50 years. Furthermore, 11% of all women will have an operation for POP or urinary incontinence during a lifetime, of which almost a third will have a second operation within two years.[1] This imposes a huge burden on health care.

In recent years, the understanding and treatment of POP have developed rapidly. New surgical techniques have been developed together with the increased use of mesh to reinforce defective pelvic support structures. The trade saw this as an opportunity for developing and marketing new products. Numerous short training courses have been conducted which focused on the use of devices but neglected the pathophysiology and comprehensive treatment of POP. Subsequently, partly trained physicians moved into the field of POP which is not a desirable situation.

POP is not merely an anatomical abnormality, but it significantly affects the patient's quality of life. Urinary urge and incontinence, dyspareunia, constipation, obstructive defaecation and anal incontinence can severely limit a patient's wellbeing, including her self-esteem and ability to socialise. Therefore the correct approach and management of POP will not only correct the patient's anatomical defects, but will improve her general wellbeing and enjoyment of life. The general practitioner can significantly contribute towards this goal.

Types of urinary incontinence

Urinary incontinence mainly consists of:

- Stress urinary incontinence
- Overactive detrusor (urge) and incontinence related to it (urge incontinence)
- Mixed incontinence with elements of both the abovementioned
- Other causes

Table I: Morbidity associated with pelvic organ prolapse

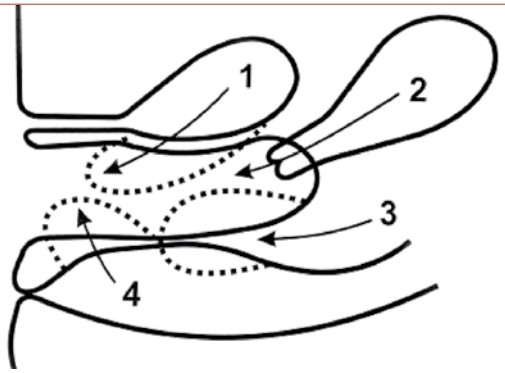
General	Compartments		
	Anterior	Middle (apical)	Posterior
Lower abdominal pain Lower back pain (?) Pelvic pain Social isolation Depression	Difficult voiding OAD[a] SUI[b] Mixed incontinence Continuously wet Fullness Something protruding through vagina	Something protruding through vagina Dragging sensation Dyspareunia Coital difficulty	Constipation Obstructive defaecation Rectal urgency Anal incontinence Pelvic pressure Dragging sensation Dyspareunia Something protruding through vagina

[a] OAD = Overactive detrusor (bladder)
[b] SUI = Stress urinary incontinence

(Overactive detrusor is similar to overactive bladder, indicating urgency with or without the loss of urine before the ability to toilet)[2]

POP consists of the following (Figure 1):

1. Anterior compartment prolapse:
   - Cystocoele
   - Urethrocoele – clinically not regarded as an entity
2. Middle compartment prolapse:
   - Uterine prolapse
   - Vaginal vault prolapse (following on a hysterectomy)
3. Posterior compartment prolapse:
   - Enterocoele
   - Rectocoele
   - Perineal body defect
   - Rectal intussusception and prolapse
   - Rectal mucosal prolapse and haemorrhoids are associated conditions



1 = cystocoele 2 = uterine prolapse or vault prolapse if the uterus is absent
3 = enterocoele 4 = rectocoele

Figure 1: Different types of pelvic organ prolapse in the female

Pathogenesis

The three most important factors responsible for POP are an inherent tendency towards prolapse (genetic factors), pregnancy together with vaginal childbirth, and hysterectomy (particularly hysterectomy for prolapse).[3]

Genetic factors are not well understood, except for connective tissue disorders. It seems as if the black race is less prone to developing POP, although this has been denied.[4]

Factors during childbirth that promote prolapse in later life include prolonged labour (particularly prolonged second stage), forceps delivery and large babies.[5] Caesarean section provides only partial protection as pregnancy itself also contributes towards POP.

Hysterectomy has recently been recognised as being strongly related to POP, particularly when it has been done for prolapse.[3] In a woman with a good ability to form fibrosis, it probably does not make a difference. However, in the absence of proper fibrosis, the ligaments attached to the cervix retract, leaving behind an unsupported vaginal vault and pouch of Douglas. This often results in posterior compartment prolapse (recto-enterocoele) with or without cystocoele.

Other promoting factors include obesity, advanced age, lack of exercise, cortisone treatment, and a chronic cough. Patients with POP are often constipated which may be both a promoting factor and a result of POP.

Prolapse usually starts with muscle and connective tissue trauma in the pelvis. Detachment of the puborectalis muscle (medial and anterior part of levator ani muscle) from the pubic bone is of fundamental importance.[6] This increases the size of the hiatus – the space through which the pelvic organs pass.[5] Associated with this trauma are lacerations of the pelvic fascia, particularly paravaginally. This aggravates the poor support of the pelvic organs caused by the muscle lacerations.[5] As a result of the poor support, the pelvic organs descend. Following the primary descent, secondary distension of the organs develops, leading to severe prolapse (stage 3 and 4).

An important point here is that prolapse does not occur in isolation. Even if only one organ seems to be involved, all the other organs are actually involved as well. This must be taken into account when deciding on treatment.

Prevention of POP

Little attention is paid to the prevention of POP, probably because POP occurs many years after the primary incident. Important factors, however, are the following:

- Good obstetrical practice, mainly the prevention of prolonged labour (especially prolonged second stage) and perineal tears.
- Prevention of obesity.
- Healthy lifestyle including exercise and the prevention of constipation.
- The prevention of hysterectomy, if possible.

Staging

Prolapse is staged according to the POP-quantification (POP-Q) system.[7] This is a complicated system and subsequently most people use a summarised version, namely:

Stage 1: Prolapse into the vagina, but no more than 1 cm above the hymenal remnants

Stage 2: One cm above to 1 cm below the hymenal remnants

Stage 3: More than 1 cm below the hymen to about 7 cm below it

Stage 4: Complete eversion or more than 7cm below the hymen

Two defects, the rectocoele and perineal body defect, do not clearly comply to the POP-Q method. For a rectocoele we use the "pyramid sign". With a finger in the lower rectum, the very distal posterior vaginal wall is pushed upwards to form a "pyramid". The pyramid is measured from the fourchette (posterior vaginal wall – skin junction) upwards. Each cm represents a stage: 1 cm is stage 1 and 3 cm, for example, is stage 3 (Figure 2). (The pyramid sign is a locally developed term).

The perineal body is subjectively evaluated by its thickness with the index finger in the rectum and the thumb on the perineum. When it is abnormally thin (less than 0.5 cm), the perineal body is defective. This is usually associated with a rectocoele. Furthermore, the perineal body should be observed for descent on straining. Perineal descent is associated with lax pelvic floor muscles and enterocoele.

The International Continence Society describes a perineal body only according to its length (from the fourchette to the midpoint of the anus).[8] However, it is the contents (muscle within the perineal body) that really matters. Therefore, we pay more attention to the thickness, and the cut-off point between normal and abnormal of 0,5cm (see above) was locally developed.

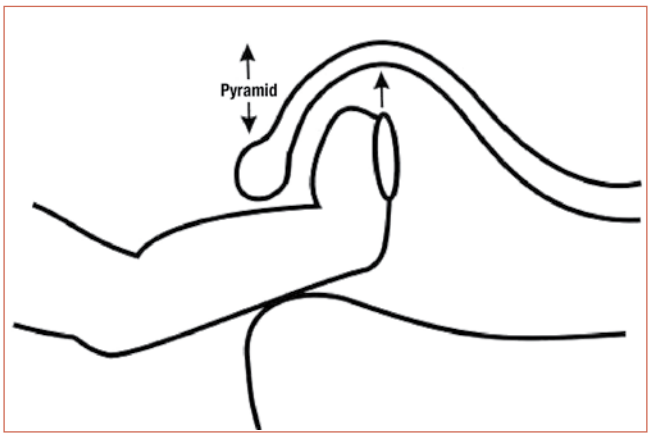


Figure 2: The pyramid sign for evaluating a rectocoele

The height of the pyramid (rectocoele) is measured from the fourchette to the highest point of the pyramid.

Clinical evaluation

Two aspects should be taken in account: the degree by which the patient's quality of life is affected and the stage of POP. The quality of life is mainly determined by bladder problems, coital difficulty, defaecatory problems and general wellbeing (Table I). Surgery is indicated for stages 3 and 4 POP, as well as lesser prolapse when it is severely symptomatic and not responding to conservative treatment. A symptomatic woman with stage 1 and 2 prolapse need not be referred to a specialist. Physiotherapy is a viable alternative (see below).

Guidelines for the GP

1. ***Bladder problems***

(a) *Overactive detrusor (OAD) (urge and urge incontinence)*

The key to diagnosis is urge although a urodynamic investigation is the best way to confirm the diagnosis. Following identification of the problem, three conditions have to be eliminated and if present, treated first:

- Urinary tract infection (a urine culture is necessary)
- Diabetes mellitus (blood sugar)
- POP, particularly posterior compartment prolapse

Once these conditions have been ruled out or treated, treatment aimed at the OAD can be instituted. The first line of treatment is physiotherapy which often works surprisingly well. If that is ineffective, anticholinergics will be the second step. A reasonable approach is to treat the patient for three months after which the treatment is stopped. Only if the overactivity recurs, is long-term treatment indicated.

Indications for referral to a specialist are as follows:

- Recurrent or persistent urinary tract infection, or bladder pain
- When a patient is continuously wet
- When long-term anticholinergics are indicated or when anticholinergics are ineffective
- Diabetes mellitus in need of specialist attention
- Previous hysterectomy together with urge and urge incontinence
- Posterior compartment prolapse of any degree

(b) *Stress urinary incontinence (SUI)*

The problem with SUI is that an OAD can present as SUI. A urodynamic investigation will distinguish between the two conditions, but is not always available. The GP's role is thus as follows:

- Test the patient for SUI: if clearly present (she leaks while coughing), the patient should be referred to a specialist
- If SUI is not confirmed, manage the patient as for an OAD. If the SUI (on history) persists, the patient should be referred to a specialist

2. ***Middle compartment***

(a) *Coital difficulty*

The patient may complain of dyspareunia, something "in the way" during coitus or urinary (or even faecal) incontinence during coitus. All these are indications for referral to a specialist.

(b) *Protrusion of prolapse through the vagina/introitus*

If a patient becomes aware of something appearing at or protruding through the introitus, she should be referred to a specialist. It does not matter whether it occurs during straining or in the standing position.

3. ***Posterior compartment***

(a) *Constipation*

Similar to headache, constipation has a wide spectrum of causes, often difficult to pinpoint. It can be both a cause or a result of prolapse. Therefore, it has to be dealt with on its own merits and not as a symptom pointing to a specific type of prolapse.

The basic management of constipation consists of consuming enough plant fibre together with exercise. Adequate fluid intake is also important, but coffee may suppress bowel activity. Patients over 50 years of age should be referred for colonoscopy.

(b) *Obstructive defaecation*

Obstructive defaecation is a condition where the patient must use manual assistance in one way or another to defaecate or she feels the bowel is not empty after defaecation. This is a consequence of enterocoele and/or rectocoele, but rarely other pathology may be involved. It is often associated with an OAD. Other associations are haemorrhoids, rectal mucosal prolapse, rectal intussusception and rarely rectal prolapse.

Obstructive defaecation (or any of its associated rectal conditions) is an indication for referral to a specialist. A colonoscopy will often be indicated.

(c) *Anal incontinence*

The anus can be incontinent to gas (flatus), fluid (causing soiling) or stool. Soiling is usually due to a rectocoele with mucosal prolapse or intussusception. Flatus or stool incontinence is usually the result of anal sphincter trauma. All these conditions are indications for referral to a specialist.

Vaginal pessary

A vaginal pessary is considered for the elderly patient who needs surgery, but does not qualify for it. It works well when the uterus is intact and the perineal body is not too defective. If a pessary is applied, an oestrogen

cream should be instituted vaginally once a week as well. However, if the pessary continues to fall out, surgery is the only way out.

Pelvic floor muscle tone

A significant association exists between pelvic floor muscle deficiency and the degree of prolapse. Physiotherapists use the Oxford scale to grade the pelvic floor muscle strength. With a finger pressing on the posterior aspect of the lower half of the vagina, the patient is asked to squeeze (contract her pelvic floor muscles). The degree of contraction is graded from 0 (no contraction at all) to 5 (extremely strong contraction). Patients with a poor Oxford count (0–2) should be referred to a physiotherapist.

Pelvic floor ultrasound has become important in the evaluation of the pelvic floor muscles and POP. Any form of prolapse can be accurately assessed and muscles like the puborectalis evaluated (Figure 3).

With the ultrasound probe placed between the labia minora, the pelvic organs can be seen from anterior (left side) to posterior (right side).

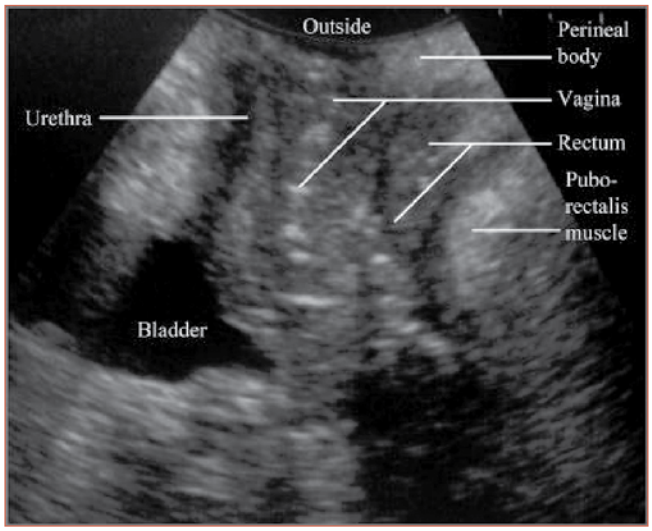


Figure 3: A transperineal ultrasound image of the pelvic organs

Table II: Specialities involved in pelvic organ prolapse[a]

Condition	Specialities		
	Gynaecology	Urology	Surgery
SUI[b]	✓	✓	
OAD[c]	✓	✓	
Cystocoele	✓	✓	
Uterine prolapse	✓		
Vault prolapse	✓		
Enterocoele	✓		
Rectocoele	✓		✓
Perineal body defect	✓		✓
Rectal prolapse	✓		✓

[a] Some urologists and surgeons with a special interest and expertise in pelvic organ prolapse, have expanded their scope of practice
[b] SUI = Stress urinary incontinence
[c] OAD = Overactive detrusor (bladder)

To which specialist should a patient be referred?

Urinary incontinence and POP are overlapping fields between gynaecologists (in particular urogynaecologists), urologists and surgeons (in particular colorectal surgeons). Although the situation varies on a regional basis, the division between these specialities are outlined in Table II.

Principles of surgery

It is not within the scope of this article to discuss the surgical procedures in detail, but only the principles of surgery will be briefly discussed.

Table III: Surgical procedures for pelvic organ prolapse

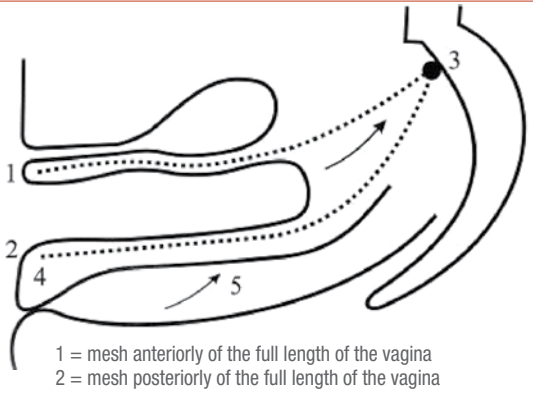
Procedure	Failure rate
Suburethral sling for SUI[a]	10–15%
Anterior repair	40–50%
Posterior repair[b]	5–20%
Perineal body repair[b]	3–50%
Anterior repair + mesh + SSF[c,d]	20%
Posterior repair + mesh + SSF[c,d]	10–20%
Enterocoele repair vaginally	40–50%
Vaginal vault repair vaginally	50–60%
Sacrocolpopexy[b] (including laparoscopically)	10–20%
Sacrocolpopexy with rectopexy[b]	3–5%

[a] SUI = stress urinary incontinence
[b] Techniques vary significantly
[c] SSF = sacrospinous fixation
[d] Include Prolift®, Avaulta®, etc

Since POP is a condition where the pelvic organs descend, surgery must be aimed at suspending them to their original position. To achieve this, mesh is commonly used. However, mesh is a foreign material and may introduce complications (see later).

The commonly practised procedures are listed in Table III. The gold standard for POP is sacrocolpopexy (Figure 4).[9] However, there are many variations of sacrocolpopexy and it can be done laparoscopically or by laparotomy. The expected results in general are also given in Table III.

In patients under 40 years of age, mesh should be used only in extreme situations. Mesh should mainly be reserved for secondary operations or patients 50 years or older. Between 40 and 50 years mesh may be used, but more conservative methods should be considered. Mesh should not be used in HIV-infected women.



1 = mesh anteriorly of the full length of the vagina
2 = mesh posteriorly of the full length of the vagina
3 = mesh attached to sacrum 4 = perineal body repair 5 = rectopexy

Figure 4: Perineo-colpo-sacrosuspension, an extensive form of sacrocolpopexy

Postoperative care

The in-hospital postoperative care will be handled by the specialist who performed the operation, but following discharge from hospital, the GP comes into the picture.

The pelvic organs are richly supplied by nerves and therefore, they are extremely sensitive. Postoperative complications are therefore not uncommon. Table IV summarises the most important complications.

Table IV: Postoperative complications

Major[a]	Minor[b]
Postoperative bleeding – Externally – Internally	Urinary retention Overactive detrusor ± Urinary leakage Stress urinary incontinence
Haematoma formation	Anaemia Abdominal cramps
Infection – Cellulitis (pelvic) – Peritonitis – Of a haematoma – Of mesh – Other	Constipation Uncomfortable sexual intercourse Mesh erosion
Deep vein thrombosis ± Embolism	
Dyspareunia	
Bowel obstruction	
Recurrent prolapse	
Incisional hernia	

a = indications for referral to a specialist
b = refer to a specialist if first line treatment didn't work

Most patients will have a slight vaginal bleeding postoperatively, which usually subsides after three weeks. Sexual intercourse is permitted after six weeks, which will at first be uncomfortable but improvement will occur quite soon.

All patients will receive antibiotics peri-operatively. Infection, however, remains a risk even after discharge from hospital. Increasing lower abdominal pain, a foul smelling vaginal discharge or fever and tachycardia must alert the Family Physician of possible infection. If this occurs, a specialist must be consulted. Some patients will develop a vaginal candidiasis due to antibiotic treatment which will respond to the common antifungal treatments.

The bladder needs special attention. An overactive detrusor, with or without leakage, is common postoperatively, but usually improves with time up to six months. Bladder infection is common in this period of time, even in the absence of dysuria. Nitrofurantoin (e.g. Macrodantin®, Aspen Pharmacare) 100 mg nocte is recommended for 2–4 weeks postoperatively. An overactive detrusor can be treated with an anticholinergic drug. Stress urinary incontinence that persists must be treated by a suburethral sling in most cases.

Bowel problems are also common postoperatively, particularly constipation. Food rich in plant fibre is recommended together with moderate exercise and the avoidance of food rich in carbohydrates, red meat and caffeine.

Mesh complications

The two most important mesh complications are erosion and infection.

Mesh erosion is quite common (5–15%) but usually not serious. A small part of the mesh appears within the vagina causing bleeding, a discharge or dyspareunia. It can be grabbed with an artery forceps and excised. An oestrogen containing cream can be used to accelerate the healing of the vagina.

Mesh infection is serious and should be referred to a specialist. The entire mesh should be removed in most cases. This is a rare complication.

Physiotherapy

Physioterapy plays an important role in POP and urinary incontinence. Indications for referral to a physiotherapist include the following:

- Overactive detrusor, with or without leakage
- Stress urinary incontinence
- Stage 1 and 2 prolapse
- Poor Oxford count of 0–2
- Postoperative patients with pelvic or lower abdominal pains, constipation
- All patients following a sacrocolpopexy

Conclusion

POP is a common condition together with urinary incontinence. A comprehensive approach is needed, taking into account as many factors as possible that may be involved. Teamwork, with good communication between the people attending to a patient, is the key to successful management. The general practitioner is an important member of the team dealing with POP.

References

1. Olsen AL, Smith VJ, Bergstrom JO, Colling JC, Clark AL. Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence. Obstet Gynecol 1977;89:501–6.
2. Staskin DR. Classification of voiding dysfunction. In: Textbook of Female Urology and Urogynaecology. Cardozo L, Staskin D (eds), Isis Medical Media : London, 2001, p. 84.
3. Mayne CJ, Assassa RP. Epidemiology of incontinence and prolapse. Brit J Obstet Gynaecol 2004; 111 (Suppl 1): 2–4.
4. Graham C, Mallet V. Race as a predictor of urinary incontinence and pelvic organ prolapse. Am J Obstet Gynecol 2001;183:116–20.
5. Dietz HP, Steensma AB. The prevalence of major abnormalities of the levator ani in urogynaecological patients. Brit J Obstet Gynaecol 2006;113:225–30.
6. Segal JL, Vassallo BJ, Kleeman SD, Silva WA, Karram MM. Paravaginal defects: prevalence and accuracy of preoperative detection. Int Urogynecol J 2004;15:378–83.
7. Bland DR, Earle BB, Vitolins MZ, Burke G. Use of Pelvic Organ Prolapse staging system of the International Continence Society, American Urogynecologic Society and Society of Gynecologic Surgeons in perimenopausal women. Am J Obstet Gynecol 1999;181:1324–8.
8. Bump RC, Mattiasson K, Bo LP, Brubaker LP, DeLancey JOL, Klarskov BL, et al. The standardization of terminology of female pelvic floor dysfunction. In: Textbook of Female Urology and Urogynaecology. Cardozo L, Staskin D (eds), Isis Medical Media: London, 2001, p. 1052.
9. Maher C, Baessler K, Glazener CMA, Adams EJ, Hagen S. Surgical management of pelvic organ prolapse in women. a short version Cochrane review. Neurourol Urodyn 2008;27:3–12.