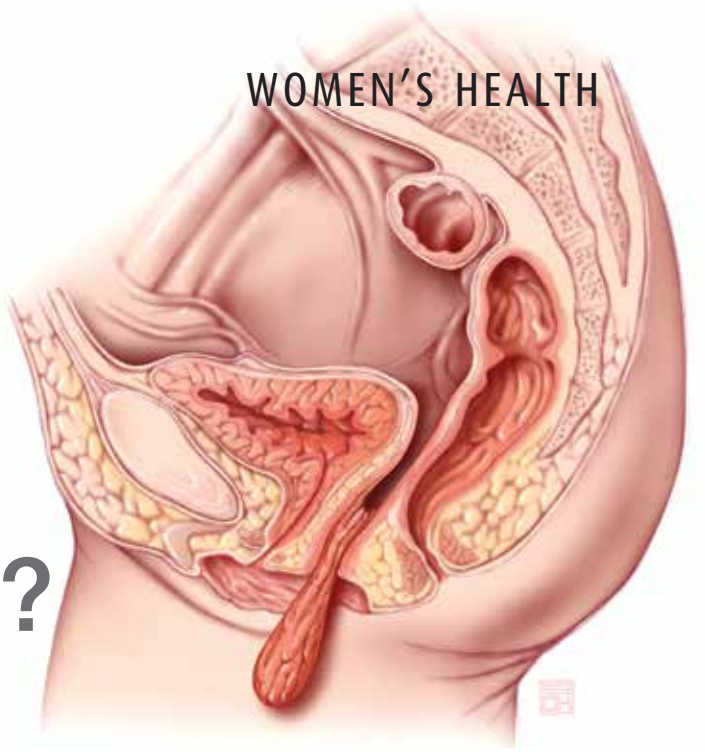
Where to with treatment of pelvic organ prolapse in 2014?



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Pelvic organ prolapse affects many women after childbirth. The decision of whether to have surgery requires consideration of many factors.

MedicineToday 2014; 15(5): 63-67

Pelvic organ prolapse is the protrusion of the bladder, urethra, uterus or rectum into or out of the vaginal canal, and affects 50% of parous women.[1] A woman's lifetime risk for surgery for pelvic organ prolapse is 11 to 19% and 6 to 29% of these women undergo additional surgery. Thus, a total of 6.3% of women would have undergone prolapse surgery by the time they reach 80 years of age.[2]

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Symptoms of pelvic organ prolapse include vaginal fullness or dragging, with the patient eventually noticing a lump protruding through the vagina. If prolapse involves the bladder or the bowel, there will be accompanying urinary or anorectal symptoms.

AETIOLOGY

Pregnancy and vaginal childbirth are the main risk factors for the development of pelvic organ prolapse. It has been demonstrated that the pelvic floor stretches anywhere between 25 and 250% during vaginal birth. Once it exceeds 150% of its original length it will never return to normal, therefore creating excessive distensibility or ballooning. Additionally, some 15 to 35% of women also experience trauma to the insertion of the puborectalis muscle.[3]

CLASSIFICATION

Diagnosis of pelvic organ prolapse is by a pelvic examination and the severity of prolapse is graded. Currently, the pelvic organ prolapse quantification (POP-Q) system is used for codifying pelvic organ prolapse (as shown in the box).[4] Although pelvic organ prolapse has traditionally been regarded as a progressive disease, this is not always the case.

INDICATIONS FOR TREATMENT

The presence of pelvic organ prolapse is not an indication for intervention. Treatment is not indicated in women who have no symptoms and some women will choose not to undergo surgery if the prolapse is not causing any symptoms. Intervention is only required if the patient wants it, because prolapse is not a fatal condition and surgery can cause severe morbidity and may even be life-threatening.

Treatment is indicated for women with urinary or bowel symptoms, sexual dysfunction or, rarely, hydronephrosis from ureteric obstruction in severe procidentia (Figure 1).

PELVIC ORGAN PROLAPSE QUANTIFICATION SYSTEM[4]

The Pelvic Organ Prolapse Quantification (POP-Q) System was developed to provide a universal reliable staging system for the communication of clinical findings from women with pelvic organ prolapse.

Specific measurements of defined points in the midline of the vaginal wall are taken using the hymen ring as the fixed reference point. These measurements are recorded in a grid.

The six defined points for measurement in the POP-Q system are:

- Aa – anterior wall point a
- Ba – anterior wall point b
- C – cervix (or vaginal cuff in women who have had a hysterectomy)
- D – posterior fornix (omitted in women who have had a hysterectomy)
- Ap – posterior wall point a
- Bp – posterior wall point b.

Three landmarks are also used in the system. These are:

- gh – genital hiatus
- tvl – total vaginal length
- pb – perineal body.

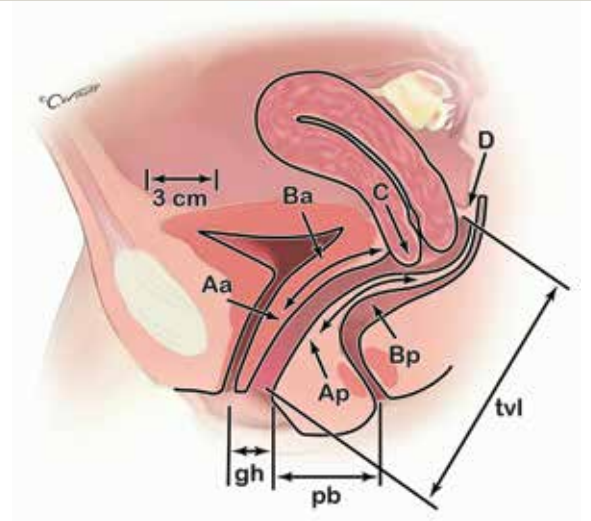
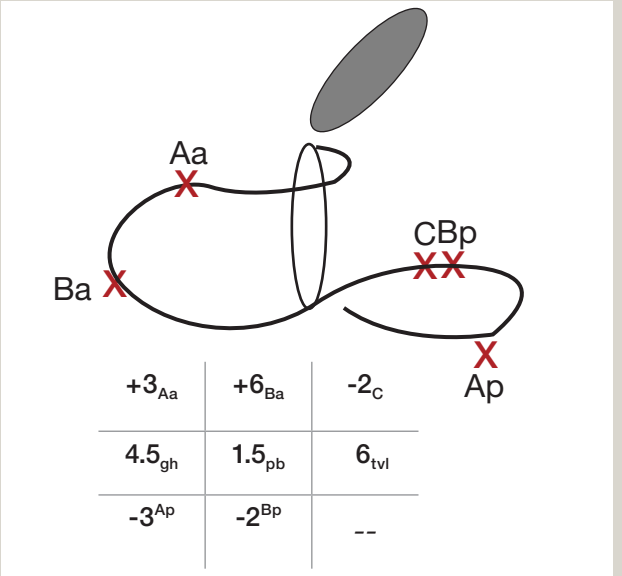
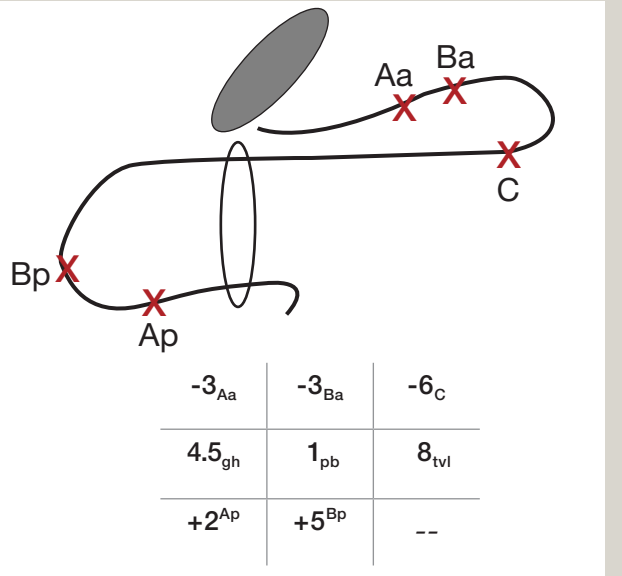


Figure A (right). Points and landmarks for the POP-Q system.



$+3_{Aa}$	$+6_{Ba}$	-2_{C}
4.5_{gh}	1.5_{pb}	6_{tvl}
-3^{Ap}	-2^{Bp}	--

Figure B. An example of measurements using the POP-Q system showing a predominant anterior support defect. The leading point of prolapse is the upper anterior vaginal wall, point Ba (+6). There is significant elongation of the bulging anterior wall. Point Aa is maximally distant (+3) and the vaginal cuff scar is 2 cm above the hymen (C = -2). The cuff scar has undergone 4 cm of descent because it would be at -6 (tvl) if it were perfectly supported. In this example, the total vaginal length is not the maximum depth of the vagina with the elongated anterior vaginal wall maximally reduced but rather the depth of the vagina at the cuff, with point C reduced to its normal full extent. This represents stage 3 Ba prolapse.



-3_{Aa}	-3_{Ba}	-6_{C}
4.5_{gh}	1_{pb}	8_{tvl}
$+2^{Ap}$	$+5^{Bp}$	--

Figure C. An example of measurements using the POP-Q system showing a predominant posterior support defect. The leading point of prolapse is the upper posterior vaginal wall, point Bp (+5). Point Ap is 2 cm distal to the hymen (+2) and the vaginal cuff scar is 6 cm above the hymen (-6). The cuff has undergone only 2 cm of descent because it would be at -8 (tvl) if it were perfectly supported. This represents stage 3 Bp prolapse.

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Figure 1. Complete eversion of the vagina, known as procidentia, in a 50-year-old woman.

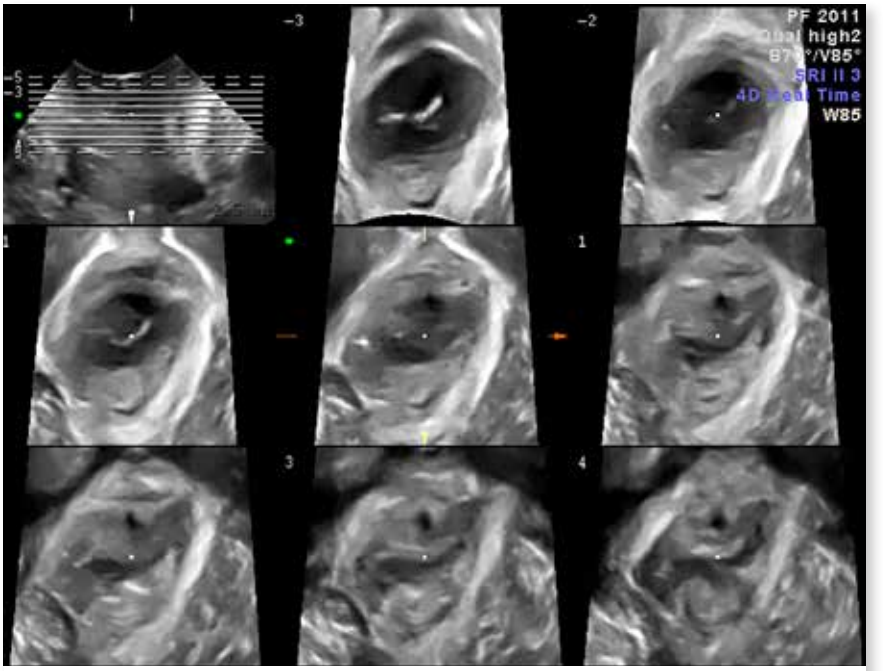

Figure 2. 3D/4D perineal ultrasound demonstrating right-sided levator muscle avulsion. Courtesy of Professor HP Dietz, Sydney.

WHAT ARE THE BEST TREATMENT OPTIONS?

Nonsurgical treatment

Conservative nonsurgical therapy is the first-line option for all women with pelvic organ prolapse. Surgery has the potential to cause complications and there is a significant incidence of recurrence of between 3.9 to 9.7% after surgery.[5] The mainstay of conservative treatment is a vaginal pessary made of silicone, which will not cure the prolapse but may relieve symptoms. Pessaries need to be removed and cleaned on a regular basis. They are best changed by the patient's GP every two months. Pelvic floor exercises can be suggested to patients; however, these are unlikely to reverse an already present prolapse but may improve urinary or bowel symptoms.[6] Vaginal oestrogens improve associated discomfort, facilitate the wearing of a vaginal pessary and improve tissue strength before surgery.[7]

Surgical treatment

If there is significant ulceration of the vaginal skin and/or there is ureteric obstruction from the prolapse, surgery is preferable to conservative options.

The aim of surgery is to restore the anatomy, correct urinary and bowel symptoms and re-establish and maintain sexual function. Before surgery, a thorough assessment of the degree of prolapse will help plan the best approach for the patient. Surgery should be offered to women who have failed or declined conservative management.

Synthetic mesh versus native tissue repair

Efforts to combat treatment failure rates with native tissue repairs led to the introduction of synthetic mesh. Mesh for prolapse surgery was first introduced in 1996.[8] Many modifications of mesh materials followed and a large number of mesh kits were manufactured subsequently.

In 2011, the US Food and Drug Administration released a safety communication regarding the use of mesh for prolapse repair. It stated that surgical placement of the mesh 'may expose patients to greater risk than other surgical options'. Problems occurring with mesh usage leave doctors open to potential medicolegal issues.

So, in 2014 where do we stand with surgery for women with pelvic organ prolapse?

We know that mesh surgery has good anatomical results but erosion can occur in more than 10% of cases and there are other significant complications.[9] Mesh erosion alone can be a devastating symptom for a sexually active woman manifest by an offensive yellow to bloodstained constant discharge, pain, inability to sit or drive a car, and dyspareunia that may lead to apareunia.

To improve the results, mesh surgery can be used selectively for those women in whom prolapse recurrence is highly probable; patients should be warned of the high recurrence rate if they decline mesh surgery. In the future we may be able to address and correct the principal anatomical injury and reduce or compensate levator muscle defects.[10,11]

By imaging the pelvic floor with 3D/4D perineal ultrasound, we can detect the status of the levator muscle (Figures 2

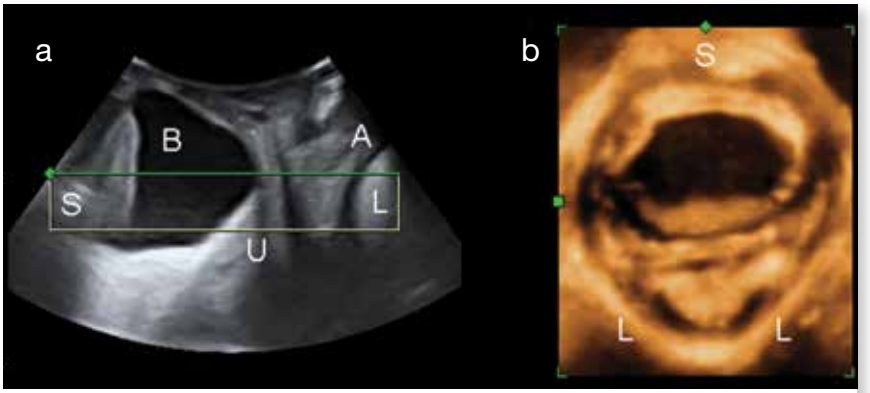

Figure 3. 3D/4D perineal ultrasound demonstrating third-degree cystocoele visible in the midsagittal plane (a) and marked levator hiatal ballooning in the axial plane (b).
S = symphysis pubis; B = bladder; U = uterus; A = anal canal; L = levator ani.

Courtesy of Professor HP Dietz, Sydney.

and 3) and calculate the area of the urogenital hiatus. Based on the area and status of the levator muscle, the risk ratio of prolapse recurrence can be determined (Figure 4).[12,13] The probability of recurrence increases with enlargement of the urogenital hiatus. If there is no levator muscle avulsion then there is no significant difference between recurrence rates when synthetic mesh is used as compared with native tissue surgery.

If there is avulsion of the muscle, then there is a significantly higher risk of recurrence with native tissue surgery as compared with synthetic mesh surgery. Based on 3D/4D perineal ultrasound, a decision can be made to recommend synthetic mesh with all the attendant risks of such surgery or suggest native tissue repair and warn the patient of the high risk of recurrence.

Before surgery, the patient is assessed with an appropriate vaginal examination and the prolapse is classified according to the POP-Q system. Recording the genital hiatus (gh) plus perineal body (pb) provides criteria similar to those available on 3D/4D perineal ultrasound. Measurement of the genital hiatus and palpation of the puborectalis muscle looking for avulsion at its insertion into the pubis is useful in determining the risk of prolapse recurrence.[14]

Additionally, imaging by 3D/4D perineal ultrasound will allow appropriate assessment of the prolapse before surgery, determination of damage to the pelvic floor and calculation of the size of the urogenital hiatus. This allows prediction of the likelihood of prolapse recurrence after surgery[15] and aids in the decision about the type and choice of operation.

Repair of anterior vaginal wall prolapse

Women who have symptoms related to problems with urinary voiding or just an uncomfortable bulge are candidates for anterior vaginal wall repair. The most common form of repair is an anterior colporrhaphy, which is achieved by incising the vagina, exposing the fascial defect and then re-enforcing the fascia with interrupted slowly absorbable sutures.

Synthetic mesh may be inserted in those patients who have a significantly high risk of a prolapse recurrence, such as those with a large cystocoele (Figure 5). Although this may result in improved objective and subjective outcomes compared with native tissue repair, there is markedly increased morbidity, such as vaginal pain, incontinence (twofold increased risk) or dyspareunia (threefold increased risk).[16] Synthetic mesh insertion is also associated with longer operating time, greater blood loss and an extrusion rate of 10.4%.[17]

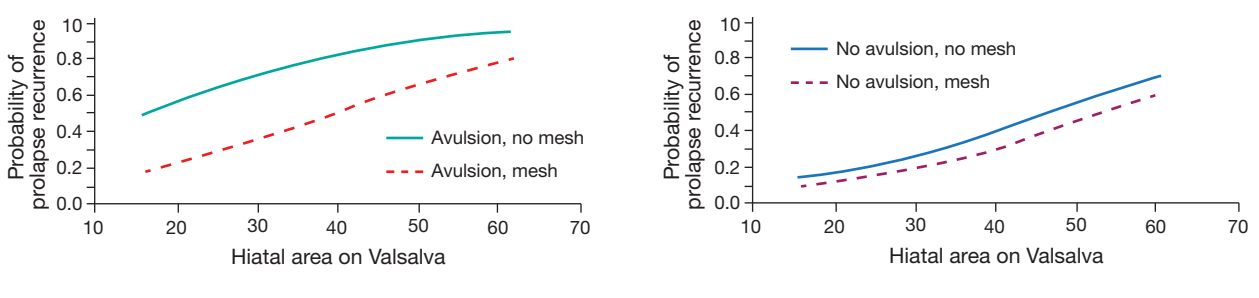

Figure 4. Risk of prolapse recurrence 2.5 years after anterior colporrhaphy in women with (a, left) and without (b, right) levator avulsion relative to hiatal area and mesh use. Based on the area and status of the levator avulsion the risk ratio of prolapse recurrence can be determined.

Reproduced with permission from Rodrigo N, et al. Neurourol Urodynam 2012; 31: 168.[12]

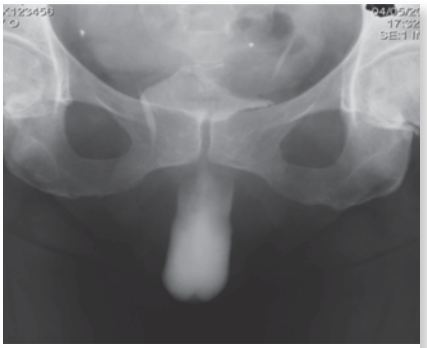

Figure 5. Cystogram of a large cystocoele.

Courtesy of Dr Lynsey Hayward, Auckland.

Figure 6. Enterocoele after hysterectomy.

Repair of apical vaginal prolapse

After hysterectomy, enterocoeles can occur; this is a hernia of the small bowel through the apex of the vagina (Figure 6). Surgical repair of an apical prolapse is performed by either a vaginal or abdominal approach, which can be open or laparoscopic. Following surgery, the quality of life parameters are not significantly different between these two procedures. In apical prolapse repair the use of mesh, when an abdominal approach is used, is both safe and effective.

Repair of posterior vaginal compartment

The goal of posterior vaginal compartment repair is to relieve obstructive defaecation or laxity of the vagina leading to unsatisfactory sexual intercourse. Posterior vaginal repair can be performed with a traditional posterior colporrhaphy in association with a levatorplasty or a site-specific repair. There is evidence that posterior colporrhaphy with levatorplasty has a better objective outcome than site-specific posterior repair; however, this is associated with a higher rate of dyspareunia.[18-20] There is at present no evidence in the literature to support the use of synthetic mesh in posterior compartment repairs.[20]

Anatomical outcomes for traditional versus site-specific repairs do not appear to be significantly different; however, levator ani plication is more likely to cure defaecation disorders.

CONCLUSION

Pelvic organ prolapse is common and often seen in general practice. GPs can play an important role in counselling and managing affected patients by identifying those who need referral, further assessment and surgery. Conservative management of women with prolapse can be effectively performed in general practice. MT

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COMPETING INTERESTS: None.