

education

ART OF MEDICINE

“I’m sorry, doctor, my dog ate my inhaler”

The aphorism “never work with children or animals” is credited to W C Fields, a comedian, though I suspect he may also have worked in clinical research.

I am running a trial to see if childhood asthma can be improved by attaching devices to inhalers to record and feed back adherence rates. The children are asked to bring them to clinic for us to download the data. It sounds all so simple.

The first hurdle is to see the children at all. Nearly 30% simply don’t attend, and we sit forlornly in clinics. When children do turn up, we often wish they hadn’t. Many devices are forgotten. Three have been lost altogether. One device was thought to be lost, only to be later found inside a toy helicopter. Devices have also been left at a grandparent’s house, at a sleepover, in the caravan. On four occasions the battery has been lost. Not surprising perhaps, until you realise that the battery compartment is securely fixed and its removal requires a sharp implement and considerable dexterity.

Many devices are reported as “broken.” A more accurate description may be “destroyed,” with screens peeled off, doors prised open, and casing completely shattered. One device met its demise when dropped in a cup of tea. When asked about the damage the children’s answer is often clear: “My brother did it.”

I write not seeking sympathy but as a word of warning to prospective researchers. Choose your patient group carefully; the small ones may look innocent but in reality are anything but.

Robert Morton, clinical research fellow, Academic Unit of Child Health, University of Sheffield r.w.morton@sheffield.ac.uk

Cite this as: *BMJ* 2015;350:h2097

We welcome contributions to this column via our online editorial office: <https://mc.manuscriptcentral.com/bmj>.



PRACTICE UPDATES

Infective endocarditis

Patients with acquired valvular heart disease, hypertrophic cardiomyopathy, previous infective endocarditis, structural congenital heart disease, or valve replacements are all at increased risk of developing infective endocarditis. Prophylactic antibiotics are not routinely recommended for people undergoing dental procedures or for upper and lower gastrointestinal tract, genitourinary tract, and upper and lower respiratory tract areas. Offer patients at increased risk of infective endocarditis clear information about the benefits and risks of antibiotic prophylaxis and why it is no longer routinely prescribed. Advise patients about the importance of good oral health and the risks of non-medical interventions such as body piercing.

<http://bit.ly/29ULXXb>

Diabetes in children and young people

Children and young people who present to primary care with suspected diabetes should be referred to a multidisciplinary paediatric diabetes team on the same day, say new NICE standards. Offer children with type 1 and 2 diabetes a programme of diabetes education that is updated annually. Ensure children have access to mental health professionals with an understanding of diabetes. Make blood ketone testing strips and a blood ketone meter available to children and young people with type 1 diabetes.



<http://bit.ly/29RZfaN>

FAST FACT—HEART FAILURE AND RENAL DECLINE

When a patient is started on an angiotensin converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB), a rise in serum creatinine concentration of 50% from the baseline is likely to be acceptable, or a rise of 266 $\mu\text{mol/L}$, whichever is smaller. For patients with an increase in creatinine above an “acceptable” level, consider:

- Avoiding further up titrations of ACE inhibitor or ARB, or spironolactone
- Stopping or avoiding nephrotoxic drugs
- Reducing or stopping non-heart failure therapy antihypertensives
- Halving the dose of the ACE inhibitor or ARB

BMJ Learning For more information visit BMJ Learning (bit.ly/1TzXtWO)

You can gain CPD points from

your reading by recording what you have read in your appraisal folder. You should try to link your reading back to a learning need and also consider how you plan to improve your practice as a result of your learning. <http://learning.bmj.com>

CPD/CME

We print a statement on financial interests and patient partnership with each education article because they are important to us. We have resolved to reduce the involvement of authors with financial interests that *The BMJ* judge as relevant. We encourage and make clear how patients have been involved and shaped our content. More details can be found on thebmj.com.

WHAT YOUR PATIENT IS THINKING

I never asked to be ICE'd

Rosamund Snow questions the role of the acronym ICE when doctors talk to their patients

A while ago I was talking to friends about the visit one of us recently made to her general practitioner.

“Don’t you hate it when they ask you what *you* think is wrong?” she asked. “I was tempted to say, ‘why, don’t you know? You’re the bloody doctor. If I knew what was wrong already I wouldn’t need the GP!’”

We’d all experienced something similar, and none of us could work out why our doctors were doing it.

Being ICE'd

One day I mentioned it to a friend who is a GP, and who teaches at the local medical school. She recognised it instantly: I’d been “ICE’d.”

In other words, she explained, the doctor had been looking for my Ideas, Concerns, and Expectations. She offered an example: a patient might think his symptoms are cancer when actually they are something much less serious, but he might not share that information without being asked; ICE is taught as a communications tool to help get at what patients are worrying about so doctors can deal with those concerns.

The best intentions

As you probably already know, she was right. I found websites that suggested doctors ask: “Tell me about what you think is causing it?” and “what were you hoping we might do for this?” I learnt that these come from good intentions; concerned doctors trying hard to look at the whole patient rather than to reduce their patients to a bunch of symptoms.

I wonder, though, did anyone ask patients how these questions sound or might make them feel?

When doctors ask me “what do *you* think is wrong?” it either sounds as if they don’t know what they are doing or feels like they are testing me. It is as if they have gathered all the symptoms and know the answer but won’t share it,

WHAT YOU NEED TO KNOW

- Try to avoid using acronyms or formulaic questions to structure conversation with patients
- Share and discuss your thoughts as you go along: knowing why you ask a question will help patients give a more useful answer
- If you don’t have time to cope with the reply, think carefully before asking patients to express their fears



CPD/CME

0.5 CREDIT

in a game in which only the doctor knows the rules. This makes me feel less and less likely to trust that doctor.

There are some more worrying aspects too. For example, one GP training website goes on to suggest asking patients about their “darkest moments,” or “what are your worst fears?” How can that possibly end well? In the darkest moments, what fears do I have about my health that we can deal with in the remaining two minutes of this consultation? However good doctors are, I doubt they will be able to address my worst fears in that time.

Doing without ICE

A little while later I saw a doctor who I felt had gold standard communication skills. Afterwards I thought about what she had done to make me feel so able to talk to her. Instead of probing my feelings with ICE-based questions, her primary focus was answering the questions I had asked, so I felt she was listening, and that we were working together. If she needed information I had not yet volunteered, she made clear why she was asking each question. She shared her thoughts as we went along, so we could discuss them, rather than putting me on the spot—and that made it much easier for me to share my thoughts and worries with her, too. It didn’t take long. I had already started to trust her in the first 15 seconds.

I understand now why GPs ICE me. But an acronym can’t build rapport; it’s just another checklist. And it feels like it, on the receiving end.

Competing interests: see <http://tinyurl.com/hq3bvrw>.

Cite this as: *BMJ* 2016;354:i3729

Find this at: <http://dx.doi.org/10.1136/bmj.i3729>

• For series information contact Rosamund Snow, patient editor, rsnow@bmj.com

None of us could work out why our doctors were doing it

Poor adherence to antihypertensive drugs

Mohammed Awais Hameed,^{1 2} Indranil Dasgupta,¹ Paramjit Gill³

WHAT YOU NEED TO KNOW

- Non-adherence to antihypertensives and other drugs is common
- If you identify non-adherence, discuss risks of untreated hypertension, expected benefits of drugs that lower blood pressure, and lifestyle changes using the patient's personalised risk
- Negotiate an achievable goal with the patient

A 56 year old man has had persistently raised blood pressure readings at home and in clinic since his diagnosis of hypertension three years ago. He was diagnosed after ambulatory blood pressure monitoring, and is prescribed four antihypertensives. At a routine blood pressure review he says not to bother with another prescription because he doesn't take the drugs.

As many as half of patients with apparent resistant hypertension do not take their prescribed drugs.¹ Consider non-adherence in those taking antihypertensives with elevated blood pressure readings particularly in those with apparent resistant hypertension, where blood pressure is persistently $\geq 140/90$ mm Hg despite taking ≥ 3 titrated antihypertensive drugs including a diuretic. Biological resistant hypertension affects around 10% of those treated for hypertension in the UK, and such patients need specialist management. Attempt to identify and manage poor adherence before referring the patient to a specialist.

What you should do

To find out about adherence to drugs ask patients questions such as: "I know many people have difficulty taking their medicines, how do you manage yours?" or "Take me through your medications."

The rate that patients are prescribed or collect their drugs can also provide information on adherence. In patients whose blood pressure remains uncontrolled despite multiple (≥ 3) antihypertensive drugs consider referral to a specialist hypertension clinic for directly observed therapy, where a patient is observed taking their drugs while having their blood pressure measured during and afterwards,¹ or toxicological analysis of urine.² Explore to what extent and why the patient is

¹Heart of England NHS Foundation Trust, Birmingham, UK

²Institute of Applied Health Research, University of Birmingham, UK

³Primary Care Clinical Sciences, University of Birmingham, UK

Indranil.dasgupta@heartofengland.nhs.uk

This is part of a series of occasional articles on common problems in primary care. *The BMJ* welcomes contributions from GPs.

HOW PATIENTS WERE INVOLVED IN THIS ARTICLE

No patients were involved in the creation of this article

EDUCATION INTO PRACTICE

Do you explore adherence in patients with apparently poorly controlled hypertension?

not taking the prescribed drugs. The table overleaf shows factors identified in observational studies that are associated with non-adherence and could provide a framework for discussion.³ If the patient declines treatment you can explain: "I respect your decision not to take drugs for your blood pressure, but I would like to explore the reasons behind this decision so that I can support you in this choice."

What you should cover

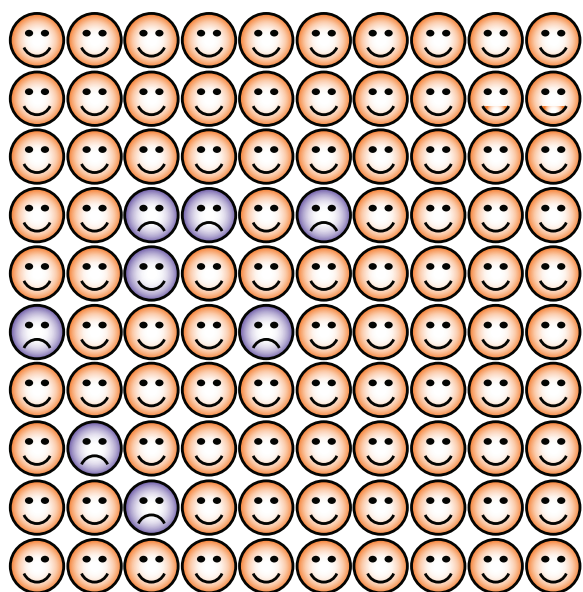
Discuss risk

Hypertension is generally an asymptomatic condition and patients might not understand the clinical course of hypertension and the reduced risk of harmful consequences with lifestyle and medical therapies. The risk associated with increasing blood pressure is continuous. Each 2 mm Hg rise in systolic blood pressure is associated with a 7% increased risk of death from ischaemic heart disease, and a 10% increased risk of death from stroke for people aged 40-69 years.⁴ Avoid using descriptive terms when explaining risks to patients. Use absolute numbers with visual aids and consistent denominators. For example, "In a population of 100 people aged 40-69, with every 2 mm Hg rise in blood pressure, 10 people are at risk of dying from a stroke and seven people are at a risk of dying from heart disease such as a heart attack."

To help patients understand what that means for them calculate their QRISK2 score (<https://qrisk.org>). For example, the QRISK for a 56 year old man with no other associated risks is 7.9% over 10 years. This can be explained by: "In a crowd of 100 people with the same risk factors as you, eight are likely to have a heart attack or a stroke in the next 10 years." Supplement this information by showing patients the visual representation of their estimated risk displayed on the QRISK website (figure).

Discuss lifestyle

If "medication burden"—taking large numbers of drugs—is identified as a contributing factor to a patient's suboptimal adherence, then it might help to revisit lifestyle changes that help lower blood pressure with him or her. Talk about the blood pressure reductions that might be expected from different



QRISK2 score

lifestyle modifications. A reduction in salt intake of 4.4 g/day on average reduces blood pressure by 5/3 mm Hg (systolic/diastolic).⁵ Two medium slices of white bread, two rashers of bacon, a packet of crisps, and half a cupful of baked beans altogether contain 4.4 g of salt. A systematic review and meta-analysis showed that three to four sessions of 40 minutes of aerobic exercise at a

moderate intensity, on average, lower blood pressure by 5/3 mm Hg.^{6,7} One randomised controlled trial showed that each pound (0.45 kg) of weight loss reduced blood pressure by about 1 mm Hg in overweight or obese people.⁸ The DASH (dietary approaches to stop hypertension) diet is high in vegetables, fruits, low fat dairy products, whole grains, poultry, fish, and nuts and low in sweets, sugar sweetened beverages, and red meats.⁹ One randomised controlled trial showed a 6/4 mm Hg reduction in blood pressure when the DASH diet was compared with a control diet that was typical of the diets of a substantial number of US citizens. Dealing with multiple lifestyle modifications simultaneously has been shown to be more effective than a sequential approach,¹⁰ and may have a cumulative effect on blood pressure reduction.

Discuss medication

Determine how the patient is managing his or her drugs. Pay particular attention to the side effects of the drugs, the dosing frequency, and number of different drugs. A reduction in the number of drugs could be negotiated, aiming for a higher, more realistic blood pressure target. The expected blood pressure reductions achieved on drugs can be quoted on the basis of a meta-analysis of 147 randomised controlled trials.¹¹ It depends on the patient's pretreatment blood pressure and the number of drugs taken. For example, a patient with a pretreatment blood pressure of 178/98 mm Hg may expect reductions of 11.7/4.6 mm Hg, 22.2/11.0 mm Hg, and 31.7/15.6 mm Hg if treated with standard doses of one, two, or three antihypertensives, respectively.¹¹

Consider simplifying the patient's drug regimen. Complicated dosing regimens are associated with lower adherence.¹² Fewer daily doses, monotherapy, and fewer changes in antihypertensives could be considered. A meta-analysis has shown that single pill combination drugs are associated with improved adherence and blood pressure control, and they could be used where patients are prescribed multiple antihypertensive drugs.¹³

Set a goal

Empowering patients to monitor their blood pressure at home and to manage their drugs improves blood pressure control.¹⁴ Consider motivational interviewing, which has been shown to improve adherence to antihypertensives and blood pressure control.¹⁵ This involves getting patients to explore why and how they can change their behaviours. The healthcare provider's role is to guide patients through setting the agenda for change by eliciting their internal motivation to change:

- **Ask** open ended questions so patients can consider how and why they might change
- **Listen** to patients' accounts and express empathy
- **Inform** by asking permission to provide information

Competing interests: None declared.

Cite this as: *BMJ* 2016;353:i3268

Find this at: <http://dx.doi.org/10.1136/bmj.i3268>

Factors contributing to non-adherence in hypertension with possible solutions. Adapted from WHO report on adherence to long term therapies ³	
Factors	Possible solutions
Socioeconomic	
Poor socioeconomic status	Make patients aware of support from governmental and voluntary agencies such as the Citizens Advice Bureau
Illiteracy	
Unemployment	
Limited drug supply	Issue repeat prescriptions to cover a longer duration—such as three months
Cost of drugs	
Healthcare system	
Clinician-patient relationship	Book longer appointments
Lack of knowledge and training for healthcare providers	Training of all staff to discuss adherence
Inadequate time for consultation	
Condition	
Lack of symptoms	Education through written and verbal information—shared decision making
Chronic or incurable disease	
No immediate consequences of stopping the drugs	Patient support groups Peer support and education
Treatment	
Complex treatment regimens	Simplify the regimen and minimise side effects through use of monotherapy, single pill combination drugs, lower doses to prevent side effects, slow release formulations to reduce dose frequency, trying other drugs in the same class or changing the class
Duration of treatment	
Low drug tolerability and adverse effects of treatment such as dry cough with angiotensin converting enzyme inhibitors, ankle swelling with calcium channel blockers, and electrolyte disturbances and gout with diuretics	
Patient	
Patient's knowledge of the disease	Patient education through written and verbal information
Patient's perception of risk and awareness of costs and benefits of treatment	Motivational interviewing
Non-acceptance of monitoring	Promoting self care through home monitoring
Psychiatric illness	Using smart phone applications to set medication reminders and record their home blood pressure, which could be shared electronically with their doctor

Pelvic organ prolapse

Matthew D Barber

CPD/CME

1 CREDIT

Center for Urogynecology and Pelvic Floor Disorders, Obstetrics, Gynecology and Women's Health Institute, Cleveland Clinic, Cleveland, OH, USA
barberm2@ccf.org

This is an edited version, full version on thebmj.com

A woman's lifetime risk of surgery for pelvic organ prolapse (POP) is 12-19% with over 300 000 prolapse surgeries performed annually in the US alone.¹⁻³ POP accounts for about 15-18% of hysterectomies, and uterovaginal prolapse is the most common indication for hysterectomy in postmenopausal women.⁴ About one in 12 women in the UK report symptoms of pelvic organ prolapse.⁵

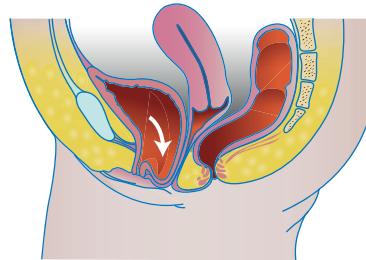
POP is the downward descent of the female pelvic organs (vagina, uterus, bladder, and/or rectum) into or through the vagina. This review provides an evidence based update on the epidemiology, evaluation, and management of this condition.

How common is pelvic organ prolapse?

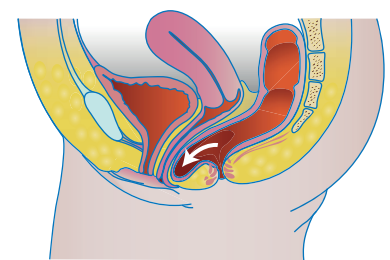
Loss of vaginal or uterine support is seen in up to 30-76% of women presenting for routine gynaecology care, with 3-6% of those with descent beyond the vaginal opening (that is, level of the hymen).⁶⁻⁸ One population based study found that about 3% of 1961 adult women surveyed reported symptomatic vaginal bulging.⁹

Prolapse of the anterior vaginal wall, or cystocele, is the most common form of POP, detected twice as often as posterior vaginal prolapse (that is, the rectocele), and three times more common than apical prolapse (uterine and/or post-hysterectomy vaginal vault prolapse) (fig 1).^{10,11} However in most cases of symptomatic POP, prolapse of multiple segments of the vagina are noted.

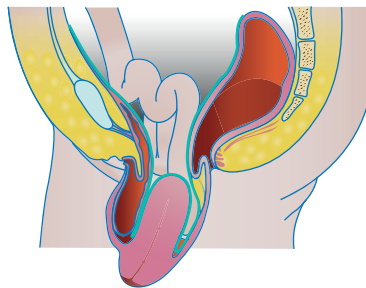
A Anterior vaginal prolapse (cystocele)



B Posterior vaginal prolapse (rectocele)



C Uterine prolapse



D Post-hysterectomy vaginal vault prolapse

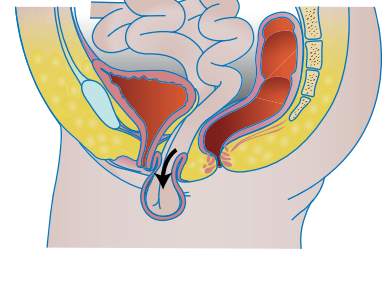


Fig 1 | Types of pelvic organ prolapse

What are the risk factors for pelvic organ prolapse?

Vaginal childbirth, advancing age, increasing body mass index, and previous hysterectomy are the most consistent risk factors for POP (see box 1).^{20,21}

How do women with pelvic organ prolapse present?

The symptom that most strongly correlates with and is most specific for POP is a feeling of vaginal bulging or a vaginal bulge that can be seen or felt.^{7,22} Women who develop symptoms may present with a single symptom such as feeling a vaginal bulge or pelvic pressure, or they may present with a combination of symptoms.²³ Loss of normal vaginal support occurs in most women with advancing age, particularly if they have had children.⁷⁻¹⁷ Severity of symptoms varies and is the driving factor in patient presentation and when to offer treatment (box 2). A cross sectional study of 237 women evaluated for POP found 73% with concurrent urinary incontinence, 86% with urinary urgency/frequency, 34-62% with voiding dysfunction and 31% with faecal incontinence.⁶ Importantly, other than vaginal bulging symptoms, none of these associated symptoms are specific to POP. Considerable overlap exists with other pelvic floor disorders and clinicians should be aware of other potential sources for the patient's complaints including primary bladder or bowel dysfunction.²² Women with severe prolapse may develop erosions of the vagina or cervix which can present with vaginal bleeding or spotting.

How should women with pelvic organ prolapse be evaluated?

Offer a pelvic examination to women presenting with symptoms suggestive of POP to define the extent of

HOW WERE PATIENTS INCLUDED IN THE CREATION OF THIS ARTICLE?

Debra Pyle, a patient who has undergone surgery for pelvic organ prolapse, critically reviewed this manuscript and provided helpful input about patient symptoms and made suggestions for and reviewed the resources for patients.



WHAT YOU NEED TO KNOW

- Pelvic organ prolapse can substantially affect quality of life
- The most consistent risk factors are vaginal childbirth, advancing age, increasing body mass index, and previous hysterectomy
- Evaluate and offer treatment to women only if they report bothersome symptoms
- Effective conservative treatments include vaginal pessaries and pelvic floor physical therapy
- Surgery is generally reserved for patients with bothersome prolapse symptoms who have at least stage 2 prolapse on examination when conservative treatments have failed or no longer work

Box 1 | Risk factors for pelvic organ prolapse (POP)

Established risk factors

- Higher parity—An observational study found increasing vaginal parity was the strongest risk factor for POP in women <60 years old. Compared with nulliparous women, relative risk of developing POP was 8.4 for a woman who had delivered two children and 10.9 (95% CI 4.7 to 33.8) for someone with four or more children.¹³
- Vaginal childbirth—Cross sectional study of 3050 women from a California health maintenance organisation found the attributable risk of vaginal delivery for development of symptomatic POP was 46%.¹⁴
- Advancing age—Studies suggest that the prevalence of POP increases by 40% with each decade of life.¹⁵ Peak age of surgery for POP is 71-73 years with an annual risk of 4.3/1000 women.
- Obesity
- Previous hysterectomy

Potential risk factors

- Forceps delivery—Caesarean section seems to protect against prolapse development, whereas forceps delivery enhances risk.^{14,16}
- Other obstetric factors—High infant birth weight (>4500 g), prolonged second stage of labour, age <25 years at first delivery, and perhaps even pregnancy itself have been associated with POP.^{16,17}
- Family history of pelvic organ prolapse—One study found a higher risk of prolapse in women with a mother or sister reporting POP (odds ratios 3.2 (95% CI 1.1 to 7.6) and 2.4 (1.0 to 5.6) respectively).¹⁸
- Shape and orientation of the bony pelvis
- Occupations entailing heavy lifting
- Constipation
- Connective tissue disorders—A recent meta-analysis found moderate epidemiological credibility for association between POP and a variation of the collagen type 1 gene (COL1A1).¹⁹

Box 2 | Symptoms associated with pelvic organ prolapse*

Vaginal symptoms

- Sensation of vaginal bulging or protrusion
- Seeing or feeling a bulge
- Pelvic or vaginal pressure
- Heaviness in pelvis or vagina
- Urinary symptoms
- Urinary incontinence
- Urinary urgency and/or frequency
- Weak or prolonged urinary stream
- Feeling of incomplete emptying
- Manual reduction of prolapse to start or complete voiding (“splinting to void”)
- Position change to start or complete voiding

Bowel symptoms

- Incontinence of flatus or stool (liquid or solid)
- Feeling of incomplete emptying
- Hard straining to defecate
- Urgency to defecate
- Digital evacuation to complete defecation
- Splinting vagina or perineum to start or complete defecation

Sexual symptoms

- Dyspareunia
- Decreased sensation
- Decreased arousal or orgasm
- Decreased body image

Pain

- Pain in vagina, bladder, or rectum
- Pelvic or low back pain

*Adapted from Barber²³

prolapse and establish the segments of the vagina affected (anterior, posterior, or apical).²⁴ Observe the woman while resting and straining both standing and supine to reproduce the maximum extent of prolapse that the patient has in her daily life. The pelvic organ prolapse quantification system (POPQ)²⁴ is the POP grading system with the highest reliability and is the most widely used internationally. This includes a five point staging

system (fig 2). A split-speculum examination with a Sims speculum or the posterior blade of a Graves speculum is used to assess anterior and posterior vaginal descent. To assess for anterior vaginal prolapse, the speculum is used to retract away the posterior vagina while the patient strains. Conversely, to assess for posterior vaginal prolapse, the speculum is placed anteriorly during straining.

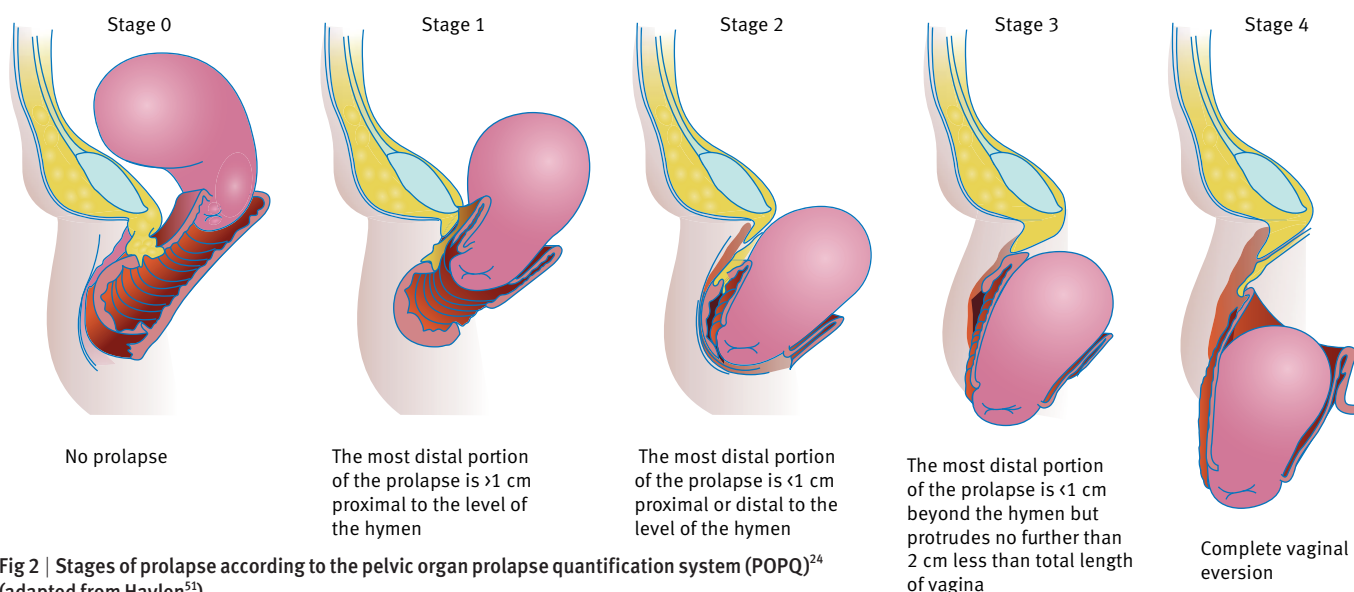


Fig 2 | Stages of prolapse according to the pelvic organ prolapse quantification system (POPQ)²⁴ (adapted from Haylen⁵¹)

Most women will need little additional testing, and this should be guided by the presenting symptoms. For those with POP and lower urinary tract symptoms, offer urine analysis and post-void residual volume evaluation to test for urinary tract infection, haematuria, and incomplete bladder emptying. Urodynamics can be considered in women with substantial urinary incontinence, irritative voiding symptoms, or voiding dysfunction. Defecography, anal manometry and endoanal ultrasound can be considered in women with outlet constipation or faecal incontinence. Radiographic imaging is generally not necessary but dynamic magnetic resonance imaging or ultrasonography may be considered when the patient's symptoms cannot be adequately explained by the office evaluation

When to offer treatment

Treatment is unnecessary in women with mild prolapse who are asymptomatic. Some women with advanced POP (stage 3 or 4) can have few symptoms and report little or no bother. In these cases, observation is appropriate.²⁵ Offer treatment for women with POP if they develop symptoms attributable to the prolapse that they find bothersome.

What treatments for pelvic organ prolapse are available in the non-specialist setting?

Conservative management options for POP with demonstrated efficacy include pelvic floor muscle training and pessary use.^{26,27} Offer these options to all patients with symptomatic POP before considering surgery. They are particularly useful for women with a mild degree of prolapse, those who wish to have more children, who are frail and elderly, and those unwilling or not suitable to undergo surgery.²⁷ Lifestyle advice that is commonly offered patients with POP—including weight loss, minimising straining or constipation, and avoidance of heavy lifting, coughing, or high impact exercise—is not supported by evidence but, as it offers little risk, may be reasonable.



Fig 3 | Common vaginal pessaries: ring pessary (top left), doughnut (top right), ring pessary with support (bottom left), Gellhorn (bottom right)

Pelvic floor muscle training

Several recent randomised trials have demonstrated pelvic floor muscle training is effective as a conservative option for improving symptoms in women with mild to moderate POP, but no improvement was noted in the degree of POP on examination.^{28,29} In each of these trials, patients received regular supervised pelvic floor physiotherapy sessions with a trained physiotherapist that included education and manual biofeedback to ensure proper pelvic floor muscle contraction and were given an individualised home exercise programme for 12-16 weeks.^{28,29} In one study, symptom improvement was greater than in controls through 12 months after start of treatment, but there was no difference from controls in the proportion of women going on to surgery (11% v 10% by 12 months, $P=0.84$).²⁸ The efficacy of pelvic floor muscle training beyond 12 months is unknown. Similarly, there have been no studies evaluating pelvic muscle exercises for POP performed without the aid of a trained physiotherapist. However, as there is little risk, this is a reasonable recommendation in areas where trained physiotherapists are not available.

Pessary

Pessaries are mechanical devices inserted into the vagina. They reduce prolapsed tissue inside the vagina, provide support to related pelvic structures, and relieve pressure on the bladder and bowel in order to avert or delay the need for surgery.²⁶ Pessaries are available in different shapes and sizes. The most commonly used are the ring, ring with support, Gellhorn, and doughnut pessaries (fig 3).³⁰ A ring pessary or ring with support, which is easy to insert and remove, is a good first option for most patients. In a prospective study of 110 women, pessaries were successfully fitted in 74% of patients.³¹ Of these, 96% received a ring pessary. If a device of this type cannot be successfully inserted, trial and error are usually necessary to find the correct pessary size and shape for an individual patient.

In spite of its frequent use, there are few publications on the appropriate indications, proper management, and effectiveness of pessary treatment of POP.

Patients are typically unable to remove Gellhorn or doughnut pessaries on their own, so these pessary types are often not a good choice for sexually active women. Because of the risk of developing vaginal erosions and new bowel and bladder symptoms, offer women examination every three to six months to identify pessary related complications.³¹ Age greater than 65 years, severe comorbidity, and maintenance of urinary continence are predictors of continued pessary use after one year.³⁴

What surgical treatments are available?

The goal of POP surgery is to restore normal pelvic anatomy, eliminate POP symptoms, and normalise bowel, bladder, and sexual function. Surgery is usually reserved for patients who have at least stage 2 POP on examination, report bothersome symptoms, and have failed or declined more conservative treatments. About one in eight women with POP undergo surgery by age 80.¹ Of those who receive prolapse surgery, some 13% will require a repeat operation within five years, and as many as 29% will undergo another surgery for genital prolapse or a related condition at some point during

Surgical procedures for pelvic organ prolapse		
Type of prolapse and surgical approach	Surgical route	
	Transvaginal	Abdominal*
Anterior segment:		
Native tissue (non-mesh)	Anterior colporrhaphy Paravaginal repair	Paravaginal repair
Mesh augmented	Free graft Commercial mesh device†	Sacrocolpopexy‡
Posterior segment:		
Native tissue	Posterior colporrhaphy Perineorrhaphy	NA
Mesh augmented	Free graft Commercial mesh device†	Sacrocolpopexy‡
Apical (post-hysterectomy):		
Native tissue	Vaginal vault suspension: Uterosacral Sacrosacral Iliococcygeus Enterocoele repair	Abdominal vaginal vault suspension: Uterosacral Enterocoele repair
Mesh augmented	Free graft Commercial mesh device†	Sacrocolpopexy
Uterine§:		
Native tissue	Vaginal hysterectomy and vaginal vault suspension: Uterosacral Sacrosacral Sacrosacral Sacrosacral hysteropexy	Hysterectomy with abdominal vaginal vault suspension
Mesh augmented	Commercial mesh device with or without hysterectomy†	Hysterectomy and sacrocolpopexy Sacrohysteropexy
Obliterative¶ (all compartments):		
Native tissue	ColpocleisisLeFort partial colpocleisis	NA

* Includes procedures performed via laparotomy and laparoscopy with or without robotic assistance.
† Specific commercial mesh devices consist of synthetic polypropylene mesh and mesh delivery or attachment systems and may be designed to address more than one segment (such as anterior-apical, posterior-apical, or total (anterior, posterior, and apical)).
‡ Sacrocolpopexy is primarily used for apical prolapse but may be used for anterior or posterior prolapse when apical prolapse is also present.
§ In women with uterine prolapse a hysterectomy may be performed in conjunction with one of the listed procedures, or a uterine suspension (hysteropexy) can be performed. A hysterectomy alone without additional apical procedure is not appropriate treatment for uterine prolapse.
¶ Obliterative procedures close off the vaginal canal, thus precluding future vaginal intercourse. They are usually reserved for women who are elderly, medically compromised, and no longer sexually active. They are associated with low operative risk and very low risk of recurrence.

their life.³⁵⁻³⁶ Surgery can be performed transvaginally or transabdominally (via laparotomy or laparoscopy with or without robotic assistance), and 80-90% are performed via the transvaginal approach.³⁵⁻³⁷ Native tissue (non-mesh) and synthetic mesh augmented repairs exist (table).

In women with advanced POP, prolapse of multiple segments of the vagina is the norm, and usually some combination of resuspension of the anterior, apical, or posterior vaginal walls is necessary. There is currently no consensus regarding which surgical approach is superior, and each has its own risk-benefit profile, although transvaginal mesh augmented repairs have come under scrutiny by national regulatory agencies and professional medical societies in recent years because of an increased risk of adverse events relative to other approaches.²⁵⁻³⁹

Apical pelvic organ prolapse

In women with uterine prolapse, hysterectomy is often performed along with an apical suspension procedure, though uterine suspension procedures (hysteropexy) are also available for those who wish to preserve uterine function. A hysterectomy performed alone without additional apical

suspension procedure is not adequate treatment for uterine prolapse.

Various surgical techniques exist for correcting apical POP, with the two most common transvaginal approaches being uterosacral ligament fixation and sacrospinous ligament fixation.

Anterior pelvic organ prolapse

Anterior colporrhaphy uses native tissue to repair anterior vaginal prolapse. The success rate ranges from 80-100% in cases series to only 40-60% in randomised trials.⁴⁷ Commercial mesh devices have been used to augment anterior POP repairs to improve durability. Use of mesh results in better anatomical and functional success but is associated with longer operating time, greater blood loss, greater apical or posterior compartment prolapse, and mesh erosion or exposure in 10.4% (with 6.3% requiring surgical correction).^{42,47}

Posterior pelvic organ prolapse

Posterior colporrhaphy is associated with success rates of 80-95% for correcting posterior vaginal prolapse.⁴¹ Resolution or improvement in bowel symptoms can be expected in most women after posterior colporrhaphy and pelvic reconstruction, while new bowel symptoms develop in 11%.⁴⁸ Use of polypropylene mesh has not been associated with improved outcomes and is not recommended for posterior vaginal POP surgery.^{41,42}

Synthetic mesh in pelvic organ prolapse surgery

The increased rate of complications seen with vaginal mesh for POP led the US Food and Drug Administration to issue two public health notifications in 2008 and 2011.³⁹ Erosion or exposure of the mesh into the vagina or other viscera is the most common mesh-specific complication. Patients with complications from mesh may present with vaginal bleeding, pelvic pain, dyspareunia, or bowel or bladder dysfunction. In 2014 the Scottish government called for a suspension on synthetic mesh use, but the UK Medicines and Healthcare products Regulatory Agency (MHRA) concluded that the benefits of POP mesh devices outweigh the risks.^{49,50}

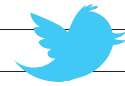
Over the past five years, the use of vaginal mesh devices worldwide has declined substantially, and many such devices are no longer commercially available. National and international professional bodies have issued guidelines on appropriate use, patient selection, and informed consent processes. Generally, vaginal mesh repair should be performed by specialists and reserved for high risk patients in whom the benefit of mesh placement may justify the risk, such as individuals with recurrent prolapse (particularly of the anterior segment) or with medical comorbidities that preclude more invasive and lengthier open and endoscopic procedures.³⁸

Transabdominal mesh procedures (that is, sacrocolpopexy) have not come under similar scrutiny because of lower risk of mesh complications and more favourable risk-benefit profile.³⁹

Patient consent: None declared.

Cite this as: *BMJ* 2016;354:i3853

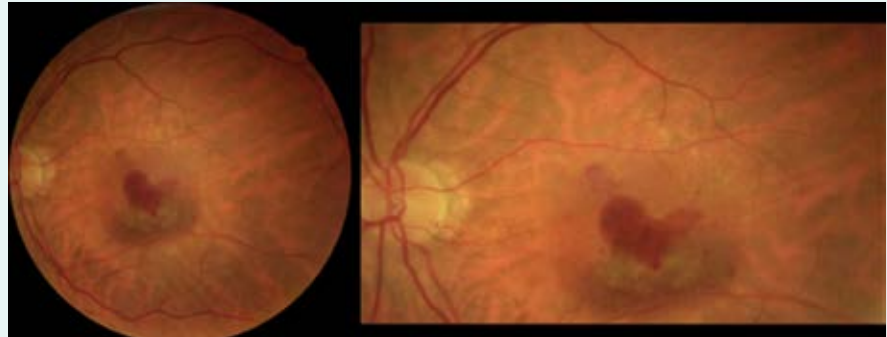
Find this at: <http://dx.doi.org/10.1136/bmj.i3853>



CASE REVIEW

Unilateral metamorphopsia in a 73 year old woman

A 73 year old woman presented to her general practitioner with a two month history of distorted and blurred vision. Her symptoms had worsened in the two weeks before presentation. Her history was unremarkable. Clinical examination showed visual acuity of 20/25 in the right eye and 20/100 in the left eye. Apart from early cataracts, the examination of the anterior segment was unremarkable. Direct fundoscopy showed a haemorrhagic elevated lesion at the macula in the left eye (figure).



- 1 What is the most likely underlying diagnosis?
- 2 Do patients with this condition need further investigations?
- 3 Is the other eye at risk?

- 4 Are there any predisposing factors for this condition?
- 5 How should this condition be treated?

Fundus of left eye showing haemorrhagic elevated lesion in macular area

Submitted by Ilias Georgalas, Menelaos Kanakis, Dionisis Pagoulatos, and Petros Petrou

Patient consent obtained.
Cite this as: *BMJ* 2016;354:i3720



SPOT DIAGNOSIS

An amateur runner with hip pain and antalgic gait

A 52 year old amateur runner who had increased his running distance over a short period of time presented to clinic with a 17 week history of hip pain associated with antalgic gait. He had no other symptoms or medical history of note and was not taking any drugs. His blood tests showed low testosterone levels only, and his DEXA (dual energy x ray absorptiometry) scan was normal. Pelvic radiography was performed (figure); what is the diagnosis?

Submitted by Henry James, Jonathon Hughes, and Stefan Kluzek
Patient consent obtained.

Cite this as: *BMJ* 2016;353:i2400

If you would like to write a Case Review for inclusion in the Endgames section please see our updated author guidelines at <http://bit.ly/29HCBAL> and submit via our online editorial office at <http://bit.ly/29yyGSx>

answers

CASE REVIEW Unilateral metamorphopsia in a 73 year old woman

- 1 Wet age related macular degeneration (AMD).
- 2 Optical coherence tomography and fundus fluorescein angiography are the most important investigations to detect newly formed or recurrent neovascularisation and guide treatment.
- 3 Yes. Preventive measures are necessary.
- 4 Cigarette smoking, age, ethnicity, and genetic factors.
- 5 Intravitreal injection of anti-vascular endothelial growth factors, regular eye examination, self monitoring, smoking cessation, vitamin supplementation, and vision rehabilitation.

SPOT DIAGNOSIS An amateur runner with hip pain and antalgic gait

A tension side completed stress fracture of the right femoral neck.

A supraclavicular swelling

A 63 year old man presented with a longstanding right sided supraclavicular mass that had recently increased in size (figure). Clinical examination suggested a giant lipoma (>5 cm), although a liposarcoma could not be excluded. The mass was excised and histological examination confirmed a giant lipoma. His recovery was uneventful. Liposarcomas are the most common soft tissue sarcoma, often seen in men during the fourth to sixth decade. Liposarcomatous change in an existing giant lipoma is rare

(<0.1%) but documented. A sudden increase in size, change in consistency, onset of pain, or development of lymphadenopathy should prompt urgent referral to exclude malignancy. First line treatment is surgery with close follow-up because metastasis can occur in certain subtypes.

Neil Scott (neil.scott@mac.com), University Hospital Wales, Cardiff CF14 4XW, UK; Seryth Colbert and P A Brennan

Patient consent obtained.

Cite this as: *BMJ* 2016;353:i2364



If at 29th go you don't succeed

A longitudinal survey in Ontario followed 1277 people who were trying to give up smoking, by contacting them every six months for up to three years, beginning in 2005 (*BMJ Open* doi:10.1136/bmjopen-2016-011045). The authors warn that previous studies, based on recall by successful quitters, greatly underestimate the difficulty many smokers experience. The estimated average number of quit attempts before success ranged from 6.1 under the assumptions of previous research, to 19.6 using a constant rate approach, 29.6 using the method with the expected lowest bias, and 142 using an approach including previous recall history.



GPs don't select medical school entrants

A survey of selection procedures for British medical schools finds a strange mismatch between lead selectors and the NHS workforce (*J Roy Soc Med Open* doi:10.1177/2054270416632706). A proforma sent to all 33 schools received a response from 18, and of these, eight had a non-clinician as lead, seven had a secondary care clinician, and two had a general practitioner, with one unclear. Looking at the selection panels in more detail, 683 (78%) included a secondary care doctor, but only 261 (29.8%) included a general practitioner.

Continuity of care and survival

A key aspect of general practice is to provide continuity of care in an increasingly fragmented, technocratic medical world. A 17 year prospective study of 1712 adults aged 60 or older from the Netherlands (*Br J Gen Pract* doi:10.3399/bjgp16X686101) found that 43.3% of participants had a maximal rating for continuity of primary care, and compared with the lowest third of continuity they had a higher level of survival, although this was only just statistically significant (hazard ratio for lowest third 1.20, 95% confidence interval 1.01 to 1.42).

Learning to reason in emergencies

Grounded theory was used to explore the ways in which junior doctors learn to deal with emergency medicine, in a qualitative study using interviews and focus groups (*Emerg Med J* doi:10.1136/emered-2015-205650). Three phases of clinical decision making were identified in the process, leading from case framing to a decision about discharge. Each involved a constant dialectic between intuitive and analytical cognition, similar to that described in Iain McGilchrist's book on the right and left brain, *The Master and his Emissary*, 2009.

Pubic hair grooming

Depictions of Minerva always show her clothed, whereas her naughty fellow goddess Venus is often portrayed naked. Few of these paintings and statues grant her any pubic hair. Minerva does not know if this is due to shaving, since Venus seldom shares confidences with her; but a survey of 3372 women in the US shows that 83.8% of them practise pubic hair grooming (*JAMA Dermatol* doi:10.1001/jamadermatol.2016.2154). Older women

and women from non-white groups are less likely to, and the authors suggest that "Healthcare professionals and those who provide grooming services can use this information to better counsel patients and understand grooming practices."

High sensitivity troponin overdiagnosis?

When cardiac troponin assays were rapidly adopted into clinical practice 15 years ago, they changed the management and classification of acute coronary events. Now, high sensitivity cardiac troponin T (hs-cTnT) testing can detect lower levels of cardiac myocyte damage, and this has raised concerns about overdiagnosis and over-investigation. But a study in several hospitals across Europe where hs-cTnT was introduced at different times, shows that it does not lead to an increased or inappropriate use of coronary angiography (*Eur Heart J* doi:10.1093/eurheartj/ehw232). In fact, it is associated with an improved "rule out" process and thereby reduces the need for stress testing and time to discharge.

Anaemia in heart failure

Out of 4465 patients referred to a clinic in east Yorkshire with possible heart failure, one third of those confirmed to have heart failure also had anaemia. Even those with normal haemoglobin levels often had iron deficiency (*JAMA Cardiol* doi:10.1001/jamacardio.2016.1161). Both anaemia and iron deficiency are associated with an increase in all cause and cardiovascular mortality, and the authors suggest that both might be therapeutic targets in this population.

Cite this as: *BMJ* 2016;354:i3936

