

Vulvovaginal atrophy – or is it genitourinary syndrome of menopause?

ROD BABER BPharm, MB BS, FRCOG, FRANZCOG



Although hot flushes and night sweats are universally recognised as the most common symptoms of the menopause in the Western world, vulvovaginal atrophy remains a cause of concern for many postmenopausal women.

The female genital and lower urinary tracts share a common embryological origin, arising from the urogenital sinus, and both are sensitive to the effects of the female sex steroid hormones throughout life. Following the menopause at least half of all women will experience symptoms related to urogenital atrophy affecting sexual function and quality of life. The term vulvovaginal atrophy (VVA) has been used to describe the changes seen and the symptoms experienced in the vulva and vagina in postmenopausal women. The term genitourinary syndrome of menopause (GSM) was chosen in 2013 by an American consensus meeting of the The North American Menopause Society and the International Society for the Study of Women's Sexual Health as it was felt to be more accurate, all encompassing and more acceptable than VVA.¹ Both terms refer to the same clinical picture.

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Associate Professor Baber is a Clinical Associate Professor of Obstetrics and Gynaecology at the Sydney Medical School, The University of Sydney; Head of the Menopause and Menstrual Disorders Clinic at the Royal North Shore Hospital, Sydney, NSW; and President (elect) of the International Menopause Society.

Signs and symptoms

Often the first sign of atrophy will be vaginal dryness, caused by a significant reduction in vaginal secretions. Vaginal pH also rises from 4.5 to 6 or above and there is an increase in colonisation of the vagina by gut flora, including *Escherichia coli*. About two years after the last menstrual period there is evident thinning of the vaginal epithelium and loss of rugal folds (Figure). True vaginal atrophy is not usually seen until about five years after the last menstrual period. The decline in circulating oestrogen at menopause is thus correlated with decreased vaginal lactobacilli (flowchart), increased pH, altered epithelial morphology, reduced vascular flow and reduced fluid secretion from the vagina.

The changes described above lead to a smoother, paler appearance of the vaginal wall, which may be associated with signs of inflammation. There is often a change in vaginal discharge and odour, while the changes to vaginal flora may lead to an increased incidence of urinary tract infections. For sexually active women, the loss of lubrication and elasticity leads to dyspareunia, whereas in patients who are not sexually active, severe atrophy can result in vaginal narrowing and shortening, and even obliteration of the vaginal vault.

Oestrogen deficiency causes atrophic changes in the bladder trigone, less tension of muscular and connective structures of the urogenital diaphragm and decreased activity of the alpha-adrenergic system innervating the bladder neck and urethral sphincter. Taken together, these changes can lead to increased urinary urgency and an increased likelihood of urinary leakage and cystitis.

Diagnosis

Diagnosis of VVA is usually achieved by clinical examination. The two main objective measures used are vaginal pH testing and the vaginal maturation index, calculated by comparing the percentage of superficial cells to intermediate and parabasal cells on

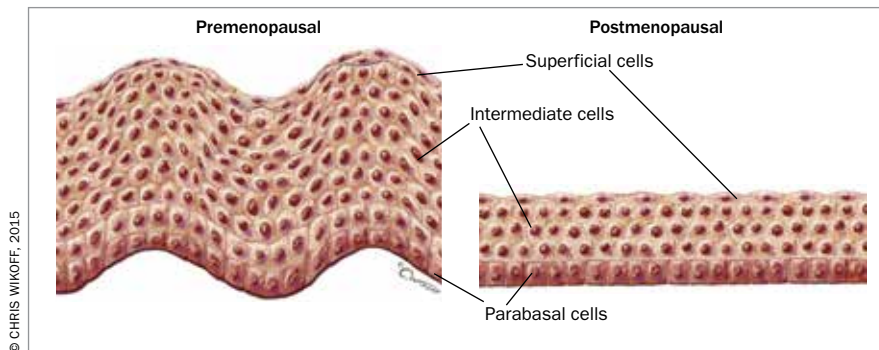


Figure. Illustrations of changes in vaginal epithelium following the menopause (cross sections). a (left). Premenopausal vaginal epithelium. b (right). Postmenopausal vaginal epithelium, showing thinning and loss of rugal folds.

a vaginal smear. The differential diagnosis of vaginal dryness and discomfort is shown in the Box.

Discussing vaginal atrophy with women

Many women are reluctant to discuss vaginal symptoms and sexual problems.

Studies have found that although 50% of postmenopausal women experience symptoms of vaginal atrophy only one in four seeks help.² It is thus crucial that the subject be raised during any midlife consultation. The clinician should be sensitive to the presence, or absence, of a sexual partner, and also whether the woman is distressed

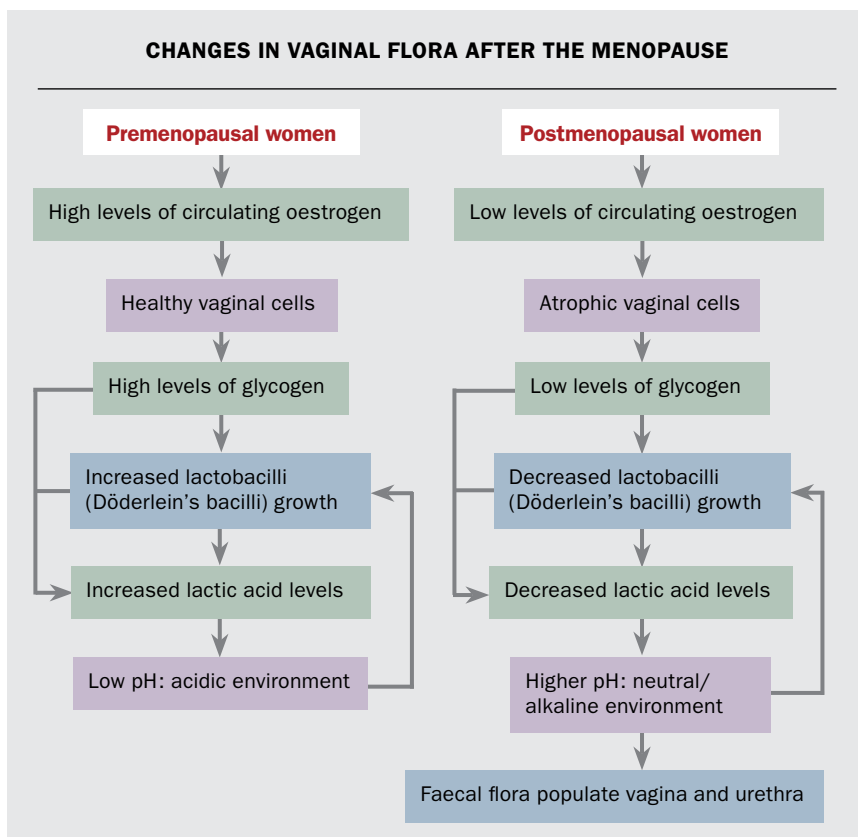
by the vaginal atrophy. Cultural and religious concerns must be respected at all times.³

A useful approach is to initiate questioning about urinary symptoms such as urgency, moving on then to questions about vaginal dryness and discomfort before enquiring about any sexual difficulties. Often the discussion may be initiated following a vaginal examination and Pap smear, when signs of atrophy may be noted. Women should always be asked about any urinary tract or vaginal infections and vaginal trauma, and whether any attempts have been made to alleviate these problems.

Treatment

Most women will attempt to resolve their symptoms themselves before seeking help. Over-the-counter lubricants and non-hormonal treatments for vaginal atrophy are usually a combination of protectants in a water-soluble base and non-hormonal substances, which may mature the vaginal epithelium. Lubricants will alleviate vaginal dryness during sexual intercourse but do not offer a long-term solution. Moisturisers are hydrophilic insoluble cross-linked polymers, which are bioadhesive and attach to mucin and epithelial cells on the vaginal wall, retaining water. They also reduce vaginal pH but there is no effect on the vaginal maturation index. Relief of symptoms is more prolonged than with lubricants but still transient, and in head-to-head comparisons they are less effective than hormonal preparations.

Local oestrogen therapy is an effective and safe treatment for vaginal atrophy.^{2,4,5} The International Menopause Society guidelines recommend that when menopausal symptoms are limited to the urogenital tract topical vaginal therapy should be used.⁶ Oestrogen is readily absorbed through the vaginal wall. Absorption is maximal early in the treatment phase, when the vaginal epithelium is still atrophic, and diminishes as the epithelium matures. Low-dose (10 µg) vaginal oestradiol tablets reach a steady-state oestradiol



DIFFERENTIAL DIAGNOSIS OF VAGINAL DRYNESS AND DISCOMFORT

- Perimenopause and postmenopause
- Breastfeeding
- Pelvic radiation for cancer
- Chemotherapy for cancer
- Adjuvant endocrine therapy for breast cancer
- Use of gonadotrophin-releasing hormone analogues
- Long-term use of high-dose progestins (e.g. in some oral contraceptives)
- Diabetes
- Vaginal infections and inflammation
- Vulvar/vaginal/cervical malignancies and dystrophies

serum level of 2 to 5 pg/mL. When they are applied daily for two weeks and then twice weekly there is no change in endometrial thickness, no incidence of hyperplasia and supplementary progestin therapy is not required.

Oestriol-containing creams and pessaries are also available for vaginal use and have been shown to alleviate symptoms of VVA and to restore vaginal flora and histology. The treatment protocol is the same as that for low dose vaginal oestradiol tablets and when used in this manner no endometrial proliferation has been reported in trials lasting up to 24 months.²

Although oestrogens may relieve urinary urgency and reduce the frequency of urinary tract infections, they are not an effective treatment for stress incontinence.

In women with a history of gynaecological cancer, the use of vaginal oestrogens may be contraindicated and expert advice should be sought.

Finally, any postmenopausal bleeding must be appropriately investigated.

What's new?

Ospemifene, a novel selective oestrogen receptor modulator (SERM) with agonistic activity on vaginal epithelium and bone, antagonistic activity on breast tissue and neutral effects on the endometrium, has

recently been approved in the USA for the treatment of VVA.⁷ Clinical trials have shown that it has beneficial effects on vaginal pH and epithelium together with a reduction in self-reported symptoms of dyspareunia. Like other SERMs, ospemifene is associated with a small increase in VTE risk. Clinical trials have not shown any evidence of hyperplasia; however, in line with good practice guidelines, any postmenopausal bleeding requires thorough investigation. Ospemifene is not currently available in Australia.

Several uncontrolled studies have explored the efficacy of CO₂ laser therapy for vaginal atrophy.⁸ Although results have been promising and favourable changes in vaginal epithelial histology reported, large randomised controlled trials are awaited.

Conclusions

- Symptoms such as vaginal dryness and soreness, dyspareunia and urinary frequency, nocturia and urgency are very common in postmenopausal women, although there is a wide variation in symptoms and signs.
- During a midlife consultation with women it should be mandatory to include appropriate questions to investigate vaginal health and sexual wellbeing, because they may not be willing to initiate such a conversation.
- Local oestrogen preparations are the most effective treatment for VVA and patient preference will usually determine the treatment used. Additional progestin is not indicated when appropriate doses are used.
- Oestrogens may relieve urinary urgency and reduce the frequency of urinary tract infections but are not an effective treatment for stress incontinence.
- If oestrogen is ineffective or undesired, vaginal lubricants and moisturisers can relieve symptoms due to dryness.
- A new oral SERM has shown promise in the treatment of VVA. MI

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Further reading

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