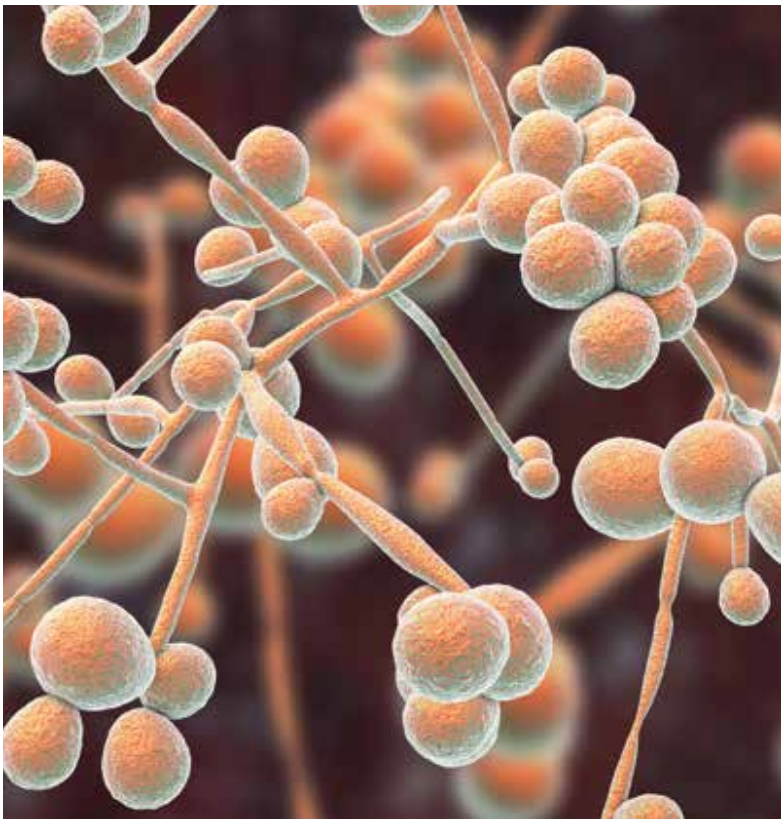
'Doctor, I've got thrush again...'

A guide to vaginal discharge



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There are many different causes of vaginal discharge. An exploration of the symptoms, examination of the patient and relevant testing will help the GP make an accurate diagnosis and guide subsequent management.

Many women, and all too frequently their doctors, think that every complaint of vaginal itch, discomfort or discharge is due to a *Candida* infection, colloquially known as 'thrush'. (Interestingly, this term is so common that the first items to come up in a Google search of 'thrush' all relate to *Candida* rather than birds.) Although some *Candida* species do cause vaginal discharge, there are many different causes of discharge, some of which require treatment and all of which benefit from an accurate diagnosis.

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What can the history tell you?

In women presenting with a complaint of vaginal discharge, the following information can be invaluable in deciding which tests might need to be carried out. Ask the patient:

- What colour is the discharge? Is it thick or runny? Is there any odour?
- Is there any itch (do you need to scratch) or burning (sore, not itchy)?
- Is there any abnormal bleeding or change in menstrual pattern?
- How long have you had this problem?
- Have you ever had this problem in the past?
- Is there any pattern to the discharge, for example, related to your menstrual cycle or sexual activity?
- Have you ever had any tests done? What did they show?
- What treatment have you tried? Was it prescribed by a doctor or over the counter?

It is also prudent to enquire about sexual partners and sexual activity. Depending on the relevance, condom usage and contraception could be asked about. Ask the patient:

- Have you had any change in sexual partner recently?
- Is your partner male or female?
- Do you have any pain in the pelvis, with or without sex?

Why do I need to examine the patient, can't I just do tests?

It is wise to examine any woman who presents with a complaint of vaginal discharge, starting with a visual inspection of the external genitalia. A profuse thick or thin discharge, erythema or scratch marks might give an indication of the diagnosis. Next, a speculum examination of the vagina is needed (in some patients with *Candida albicans* this might not be possible due to excessive discomfort). It is useful to look at the discharge in situ and to observe the following:

1. RECOMMENDED TESTS FOR WOMEN PRESENTING WITH VAGINAL DISCHARGE

- Cervical swab: nucleic acid amplification test (NAAT) for chlamydia and gonorrhoea
- Cervical swab: NAAT for *Mycoplasma genitalium* (ask for resistance testing for azithromycin as the organism is resistant in more than 50% of patients; these infections can be tested on a vaginal swab or first pass urine if you are unable to pass a speculum)
- High vaginal swab: NAAT for *Trichomonas vaginalis*
- High vaginal swab: *Candida* spp., bacterial vaginosis, Group B streptococcal infection (important in pregnancy, seek advice at other times). If there is a repeat history of *Candida* infection, ensure that you are notified of the species of *Candida* and ask for sensitivity testing
- Cervical human papillomavirus and liquid based cytology co-test if the cervix is bleeding or looks grossly abnormal (infection is likely to cause inflammatory change in cervical cells and the tests may need to be repeated after treatment, but it is important not to miss the opportunity for screening in a patient with these symptoms)

- What is the colour and volume of the discharge?
- Does the discharge appear to be coming through the cervix or is it vaginal?
- Is there any blood associated with the discharge?
- What does the cervix look like (colour, texture, cell types visible, ulceration)?
- What does the vagina look like (colour, adherent discharge, ulceration)?

If there is no discharge present when the patient is examined, consider giving her a take-home swab (with instructions on how to use it) and/or advise her to make an urgent appointment when the discharge returns.

TABLE 1. CAUSES OF VAGINAL DISCHARGE AND THEIR CHARACTERISTICS

Cause	Description of discharge
Chlamydia trachomatis	May be associated with a variable amount of cervical discharge (which can be mucopurulent), postcoital or intermenstrual bleeding, dysuria, lower abdominal pain and deep dyspareunia. Frequently asymptomatic
Neisseria gonorrhoeae	Often associated with a profuse, purulent cervical discharge, cervicitis, intermenstrual or postcoital bleeding, lower abdominal pain and deep dyspareunia. Sometimes asymptomatic
Mycoplasma genitalium	Recently added to the list of sexually transmissible infections. Discharge varies from minimal to mucopurulent and may be associated with intermenstrual or postcoital bleeding and deep dyspareunia. Only test symptomatic patients
Candida albicans	Often associated with a thick white discharge, erythema, itch and dysuria. Other species of *Candida*, such as *Candida glabrata*, may cause minimal discharge and burning, not itching
Bacterial vaginosis	Associated with a thin, grey-to-white, frothy discharge with variable volume. No discomfort, but discharge may have a fishy odour
Trichomonas vaginalis	Associated with a thin green discharge that may be profuse, erythema of the cervix (the strawberry cervix) and discomfort, including slight itch and dysuria
Physiological discharge	Discharge may be copious, but is clear or white and nonoffensive, with a normal cervical appearance that may include cervical ectopy with clear mucus flowing from the columnar cells

After removing the speculum, a bimanual examination to check for cervical excitation and to determine whether there is tenderness over the fallopian tubes is wise (if there is any complaint of lower abdominal or pelvic pain) to avoid missing a diagnosis of pelvic inflammatory disease.

What tests should I do?

The choice of test depends on whether you have carried out any tests for this patient in the past; on the patient's answers to your questions; and on your examination findings.

In women presenting with a complaint of vaginal discharge, and who are sexually active, it is useful to test for sexually transmissible infections, even if in a regular relationship. Some infections, such as *Chlamydia trachomatis*, can persist for years and more recently recognised infections, such as *Mycoplasma genitalium*, may never have been tested for. If these are missed the patient may develop a pelvic infection. The choice of test depends on clinical judgement. Options are listed in Box 1.

What is the likely diagnosis, and how do I manage it?

There are many different causes of vaginal discharge, including chlamydia, gonorrhoea, *M. genitalium*, *Candida* spp., bacterial vaginosis and *Trichomonas vaginalis*. Table 1 describes the different causes of vaginal discharge and their associated characteristics.

Management depends on the clinical findings and test results. Chlamydia and gonorrhoea are laboratory notifiable infections and the doctor's responsibility includes a discussion with the patient about contact tracing so that their partner/s can be tested and treated. *M. genitalium* and *T. vaginalis* are not notifiable but are sexually transmissible, so contact tracing and treatment of partners is required. Management options, listed

TABLE 2. RECOMMENDED MANAGEMENT BY INFECTION TYPE

Cause	Treatment	Test of cure
Chlamydia trachomatis		
Simple infection	Azithromycin 1 g immediately or doxycycline 100 mg twice daily for seven days (except in pregnancy)	Not recommended but retesting at three months is valuable as populations with previous positives have a higher rate of positive results than populations at first test
Mild to moderate ambulant pelvic inflammatory disease	Doxycycline 100 mg twice daily for 14 days plus metronidazole 400 mg twice daily for 14 days plus ceftriaxone 500 mg in 2 mL of 1% lignocaine intramuscularly	
Severe infection	Refer to specialist, admit to hospital	
Neisseria gonorrhoeae		
Simple infection	Ceftriaxone 500 mg in 2 mL of 1% lignocaine intramuscularly plus azithromycin 1 g immediately (take a cervical swab for culture and sensitivity before treating as resistance is increasing)	Recommended two weeks after completion of treatment
Pelvic inflammatory disease	Doxycycline 100 mg twice daily for 14 days plus metronidazole 400 mg twice daily for 14 days plus ceftriaxone 500 mg in 2 mL of 1% lignocaine intramuscularly	
Mycoplasma genitalium		
Simple infection	Doxycycline 100 mg twice daily for seven days followed by azithromycin 1 g immediately and 500 mg daily for another three days if macrolide sensitive	Recommended three weeks after the second antibiotic. If the patient is still positive after moxifloxacin, and her partner has been treated, seek specialist advice
Macrolide-resistant *M. genitalium*	Doxycycline 100 mg twice daily for seven days followed immediately by moxifloxacin 400 mg daily for seven days	
Mild to moderate pelvic inflammatory disease	Doxycycline 100 mg twice daily for 14 days plus metronidazole 400 mg twice daily for 14 days plus ceftriaxone 500 mg in 2 mL of 1% lignocaine intramuscularly. After the first seven days of doxycycline, add moxifloxacin 400 mg daily for 14 days	
Candida spp. (**first-line treatment depends on species**)		
Candida albicans	Fluconazole 150 mg immediately ± intravaginal clotrimazole for seven days Recurrent candida will benefit from a longer course of treatment, intravaginally and orally	Not recommended unless infection is complex and recurrent. In such cases, seek specialist advice
Candida glabrata (often resistant to fluconazole and clotrimazole)	Initial treatment: nystatin vaginal cream for 14 days (this is a cheap and frequently effective alternative). If unsuccessful use boric acid vaginal capsules 600 mg nightly for 14 days (first infection) to 28 days (if recurrent). The capsules must be made by a compounding chemist	
Bacterial vaginosis	Metronidazole 400 mg twice daily for seven days (immediate doses are less effective)	Not routine. Only retest if the patient is pregnant or has persistent symptoms
Trichomonas vaginalis	Metronidazole 2 g immediately or tinidazole 2 g immediately. If recurrent infection, metronidazole 400 mg twice daily for five days	Not recommended
Physiological discharge (all tests negative, clear or white discharge)	Reassure the patient	–

2. CASE SCENARIO

Jo, 31 years of age, presents complaining of increased vaginal discharge over the past week. She says she was feeling 'a bit uncomfortable' so used an antifungal cream, but the discharge has not improved. Jo has been with her male partner for three years and has no other partners. She is generally well and takes a low-dose contraceptive pill but no other medication. She describes a thin discharge, and burning rather than itch.

On examination, Jo has no external genital abnormality. Speculum examination shows a thin, grey, slightly frothy discharge and no inflammation. You take a vaginal swab for microscopy and culture and a swab for nucleic acid amplification testing for chlamydia. The microscopy and culture results show clue cells (epithelial cells covered with small coccobacilli and mixed flora) seen on a wet preparation of the vaginal sample, and moderate to heavy growth of *Gardnerella vaginalis*.

You make a provisional diagnosis of bacterial vaginosis and prescribe metronidazole 400mg twice daily for seven days. You advise Jo to avoid taking bubble baths and douching (which can alter the vaginal pH) and to avoid consuming alcohol while taking the medication because of its disulfiram effect. A provisional diagnosis of bacterial vaginosis means that Jo does not need to notify her partner, unless the chlamydia test comes back positive.

by infection type, are outlined in Table 2.

A case scenario that illustrates the recommended investigation and management of a woman with a vaginal discharge is shown in Box 2.

Conclusion

In women presenting with an abnormal vaginal discharge, time should be taken to explore the symptoms and examine the patient. Swabs for microscopy, culture or nucleic acid amplification testing can guide treatment of an acute or recurrent problem. Chlamydia is the most common notifiable infectious disease in Australia. It is important not to miss this diagnosis as it can have long-term clinical implications for the patient (as well as being a public health issue). It is also important to remember the value of contact tracing for sexually transmissible infections to reduce reinfection (this is also a public health obligation).

If a patient has a problematic vaginal discharge that cannot be managed in primary care, seeking advice or referring the patient to a sexual health clinic or gynaecologist is recommended. MT

FURTHER READING

Australasian Sexual Health Alliance. Australian STI management guidelines for use in primary care. Available online at: www.sti.guidelines.org.au (accessed August 2019).

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