كلية : كلية الطب العام

القسم او الفرع : النسائية والتوليد

المرحلة: الخامسة

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اسم المادة باللغة العربية : أمراض النساء

اسم المادة باللغة الإنكليزية : gynecology

اسم المحاضرة الثلاثون الثلاثون باللغة العربية: عدوى الجهاز التناسلي السفلي

اسم المحاضرة الثلاثون باللغة الإنكليزية: Lower genital tract infection

محتوى المحاضرة الثلاثون

Lower genital tract infection

Anatomy and physiology

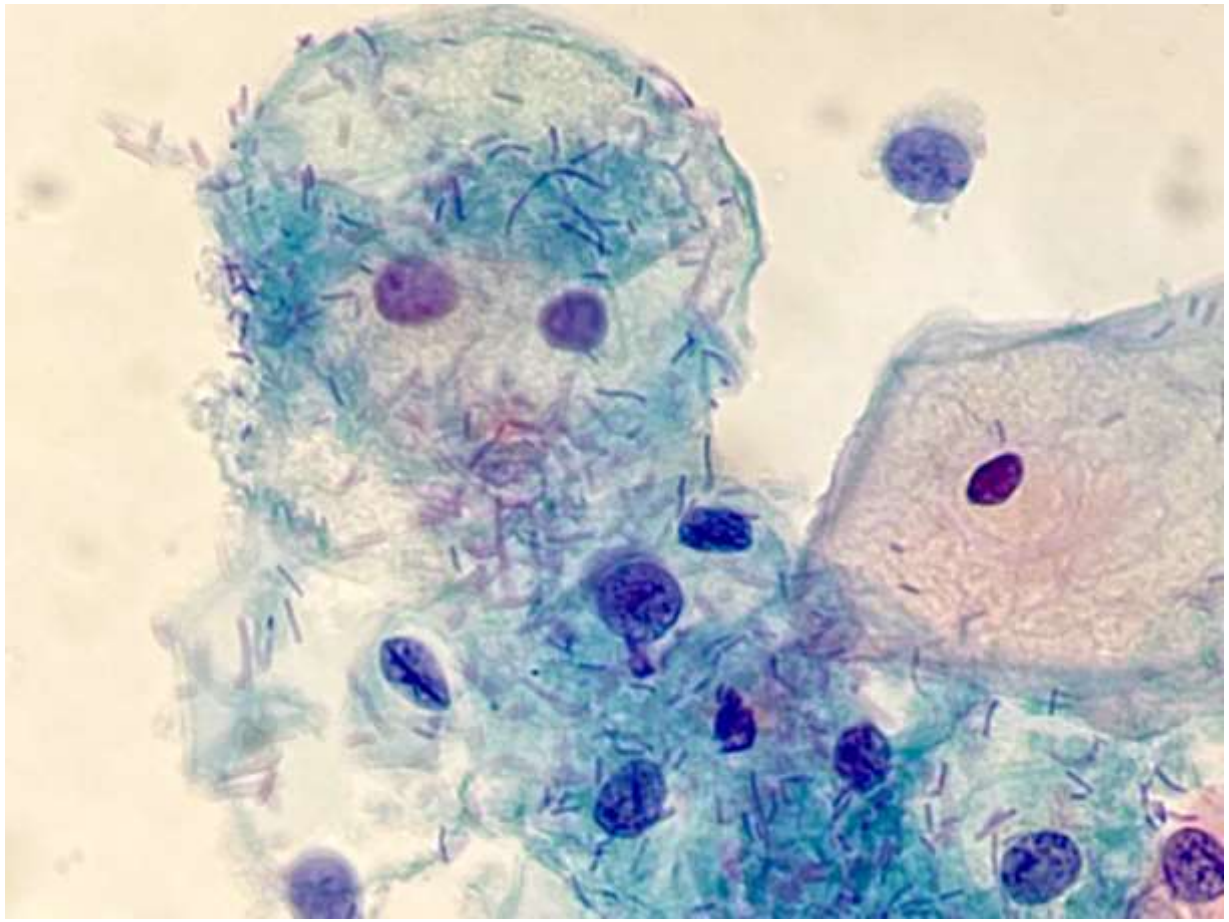
The vaginal epithelium is lined by stratified squamous epithelium during the reproductive age group under the influence of oestrogen. The pH is usually between 3.5 and 4.5 and lactobacilli are the most common organisms present in the vagina. Following the menopause, the influence of oestrogen is diminished making the vaginal epithelium atrophic with a more alkaline pH of 7.0, the lactobacillus population declines and the vagina is colonized by skin flora.

It is important to differentiate normal physiological changes from true infections. Thus, a thorough history and examination with the back up of laboratory testing is fundamental before a diagnosis is made.

Physiological discharge occurs in response to hormonal levels during the menstrual cycle. It is usually white and changes to a more yellowish colour due to oxidation on contact with air. There is increased mucous production from the cervix at the time of ovulation followed by a thicker discharge/ cervical plug under the influence of progesterone. The discharge mainly consists of mucous, desquamated epithelial cells, bacteria (lactobacillius) and fluid.

Ascending infection can occur from the vagina and cervix to the uterine cavity and to the Fallopian tubes through direct spread or via the lymphatics leading to severe pelvic inflammatory disease and pelvic peritonitis. Infections can be broadly divided into lower and upper genital tract depending on the site and affection of the infective organism.

Lactobacillus



Lower genital tract infections

vulvovaginal candidiasis:

The vagina is colonized with *Candida* sp. in up to 20% of women in their reproductive years, rising to 40% in pregnancy, and is most often asymptomatic.

Vulvovaginal candidiasis is one of the most common genital infections and is caused by Candida albicans in around 80–92 per cent of cases. Other non-albican species like C. tropicalis, C. glabrata, C. krusei and C. parapsilosis can also cause similar symptoms, although sometimes more severe and recurrent. C. albicans is a diploid fungus and is a common commensal in the gut flora.

Signs and symptoms

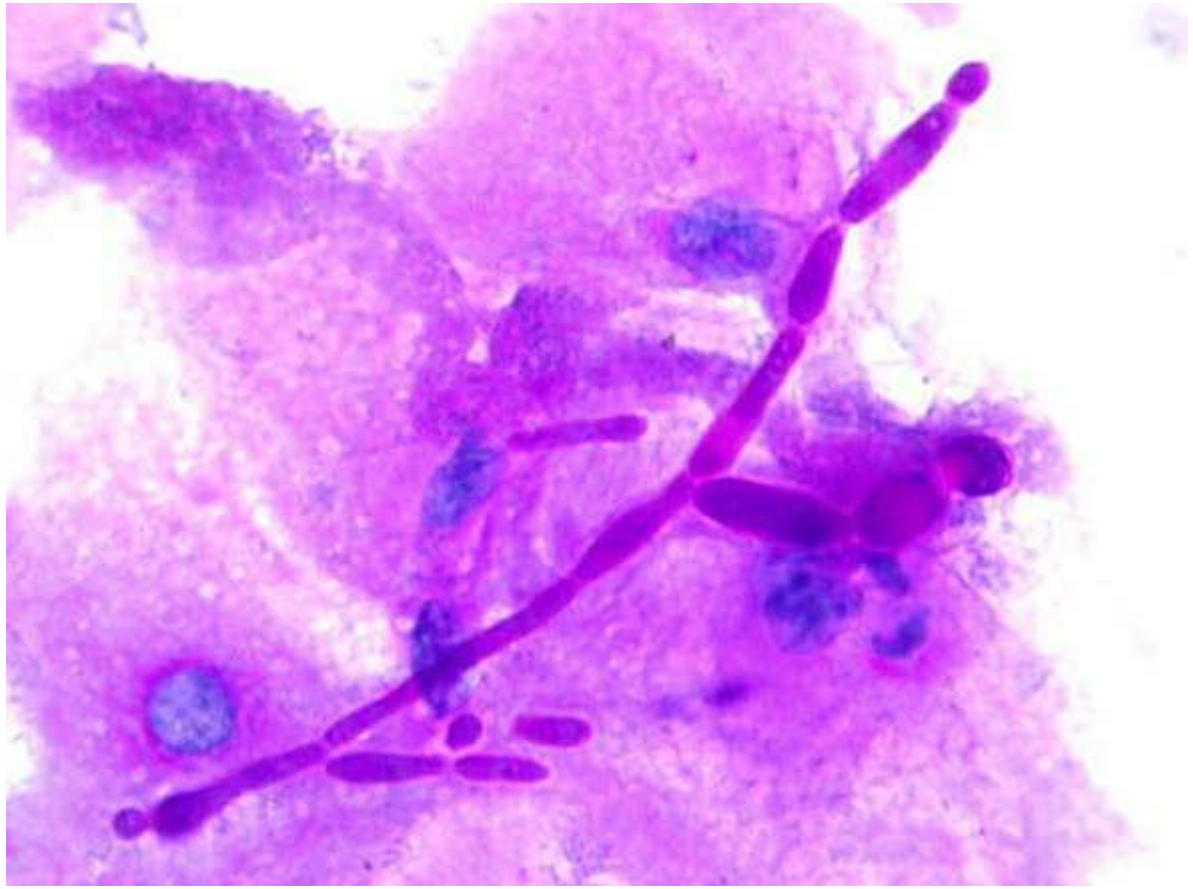
On examination, signs of inflammation, including erythema, oedema, excoriation, and fissuring of the vulva and vagina, together with the thick curdy vaginal discharge and dysuria and discharge may be observed. Vulval itching and soreness.Normal vaginal pH.

Diagnosis:

It is important to confirm the diagnosis with a perineal and/or vaginal swab for microscopy and culture. Conditions such as contact dermatitis, allergic reactions and non-specific vaginal infections can present in a similar manner. Testing can be done with a Gram stain or wet film examination and direct plating on to fungal media.

Further testing to type the species may be required in recurrent or very severe cases as some species such as C. krusei can be resistant to some of the imidazoles, such as fluconazole.

Presence of Candida (pseudo)hyphae and a few blastospores



Predisposing factors

Pregnancy, high-dose combined oral contraceptive pill, immunosuppresion, broad spectrum antibiotics, diabetes mellitus, hormone replacement therapy and HIV-infected women have a higher predisposition to develop vulvovaginal candidiasis.

Treatment

Up to 30–40 per cent of asymptomatic women may have C. albicans grown on a vaginal swab. These women do not need treatment even if they are pregnant. There is no evidence of any adverse effects in pregnancy to either the mother or the baby if treated with topical imidazoles. However, the oral imidazoles are contraindicated in pregnancy.

Topical antifungals and the use of aqueous cream as an emollient and cleansing agent provide symptomatic relief. This is not an STI and hasbends without symptoms do not require treatment.

General and supportive care

Women should be advised to avoid using any soaps, perfumes and synthetic underwear.

The high-dose oestrogen combined oral contraceptive pill should be changed to a lower-dose pill. If there are persistent or recurrent symptoms, consideration should be given to change to a progesterone-only contraception. Check blood sugars to rule out undiagnosed diabetes mellitus and if present good glycaemic control should be the aim. Avoid recurrent courses of broad spectrum antibiotics. The treatment of vulvovaginal candidiasis can be based on whether the infection is uncomplicated or severe and recurrent.

Uncomplicated infection

Azoles/imidazoles are the mainstay of the treatment. They can either be used either as a local topical application (pessaries/creams) or oral preparations. There are several types of imidazoles with similar efficacy with a cure rate of over 80 per cent. The treatment is usually based on the preference of the physician, local availability and costs. The common imidazoles are clotrimazole, econazole and miconazole. Other antifungals, such as nystatin cream or pessary, can also be used. The medication can be taken as a single pessary treatment or a course of pessaries for a few days at a lower dose.

The commonly prescribed medication is clotrimazole, which can be taken as single 500 mg pessary or a course of a 100 mg pessary over 6 days. Oral imidazoles, such as fluconazole, are given as a single dose at 150 mg or itraconazole 200 mg twice a day for 1 day. However, these are contraindicated in pregnancy. There is no evidence to treat the asymptomatic husband.

Recurrent infection

Recurrent infection is defined as at least four episodes of infection per year and/or a positive microscopy of moderate to heavy growth of C. albicans. In such cases, the principle of treatment would be an induction regimen to treat the acute episode followed by a maintenance regimen to treat further recurrences.

Commonly fluconazole 150 mg is given in three doses orally every 72 hours followed by a maintenance dose of 150 mg weekly for six months. There is a 90 per cent cure rate at six months and 40 per cent at one year with this regimen. Oral imidazoles cannot be used in pregnancy but a topical imidazole can be used for 2 weeks for induction followed by a weekly dose of clotrimazole 500 mg for possibly 6–8 weeks.

Trichomonas vaginalis

Trichomonas is a flagellate protozoan and can cause severe vulvovaginitis. It is usually sexually transmitted and commonly recurrences occur if the husband is not simultaneously treated. It can also cause urinary tract infection.

TV is sexually transmitted and simultaneous treatment of husband is required. There is some evidence of an association with pregnancy outcome: preterm birth, low birthweight and maternal postpartum sepsis, although further research is required.

Signs and symptoms

1.Vulval soreness and itching.

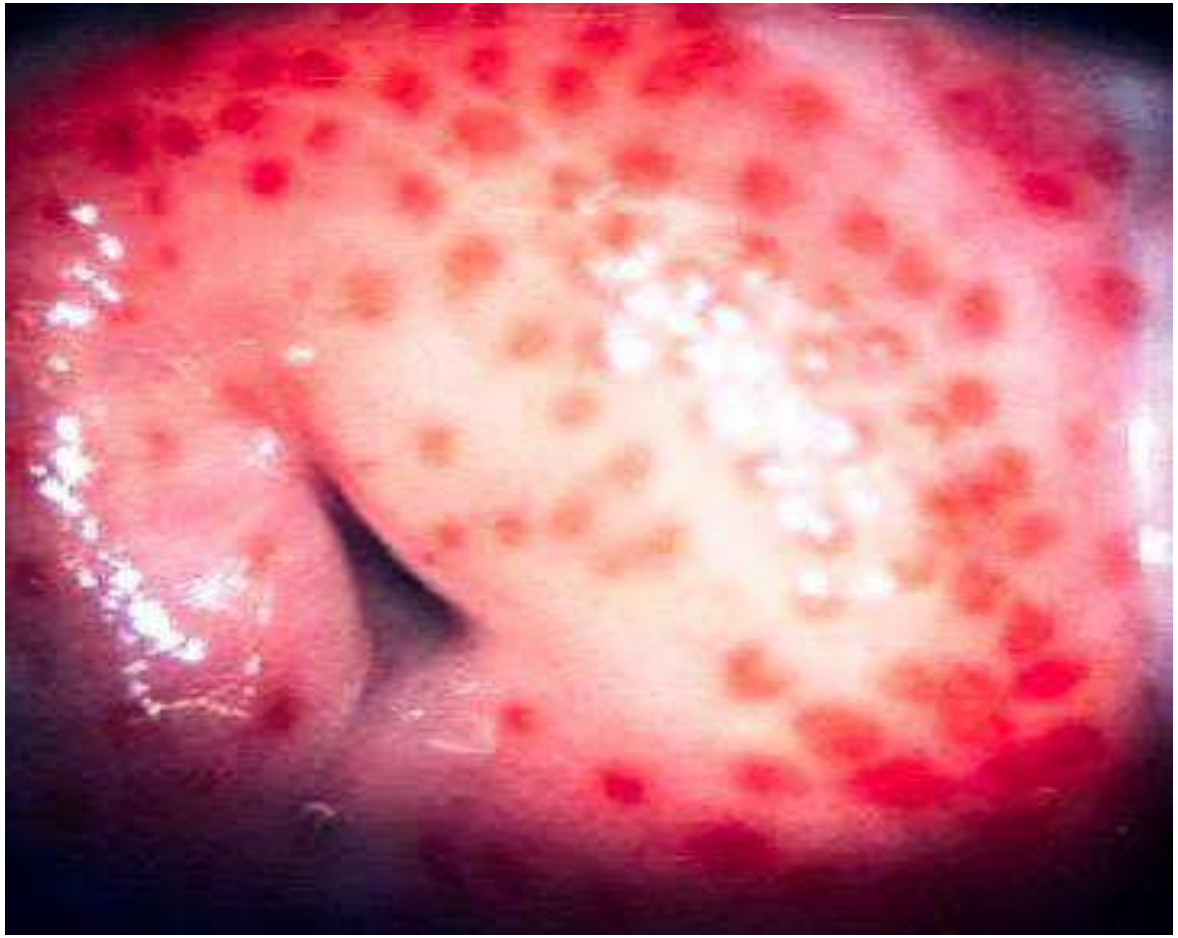
2. Foul smelling vaginal discharge, sometimes frothy yellowish green in nature.

3.Dysuria and abdominal discomfort.

4. Asymptomatic infection is observed in up to 50% of women and most of their husbands.

5.Appearances of strawberry cervix due to the presence of punctate haemorrhages.

Strawberry cervix due to trichomonas vaginalis

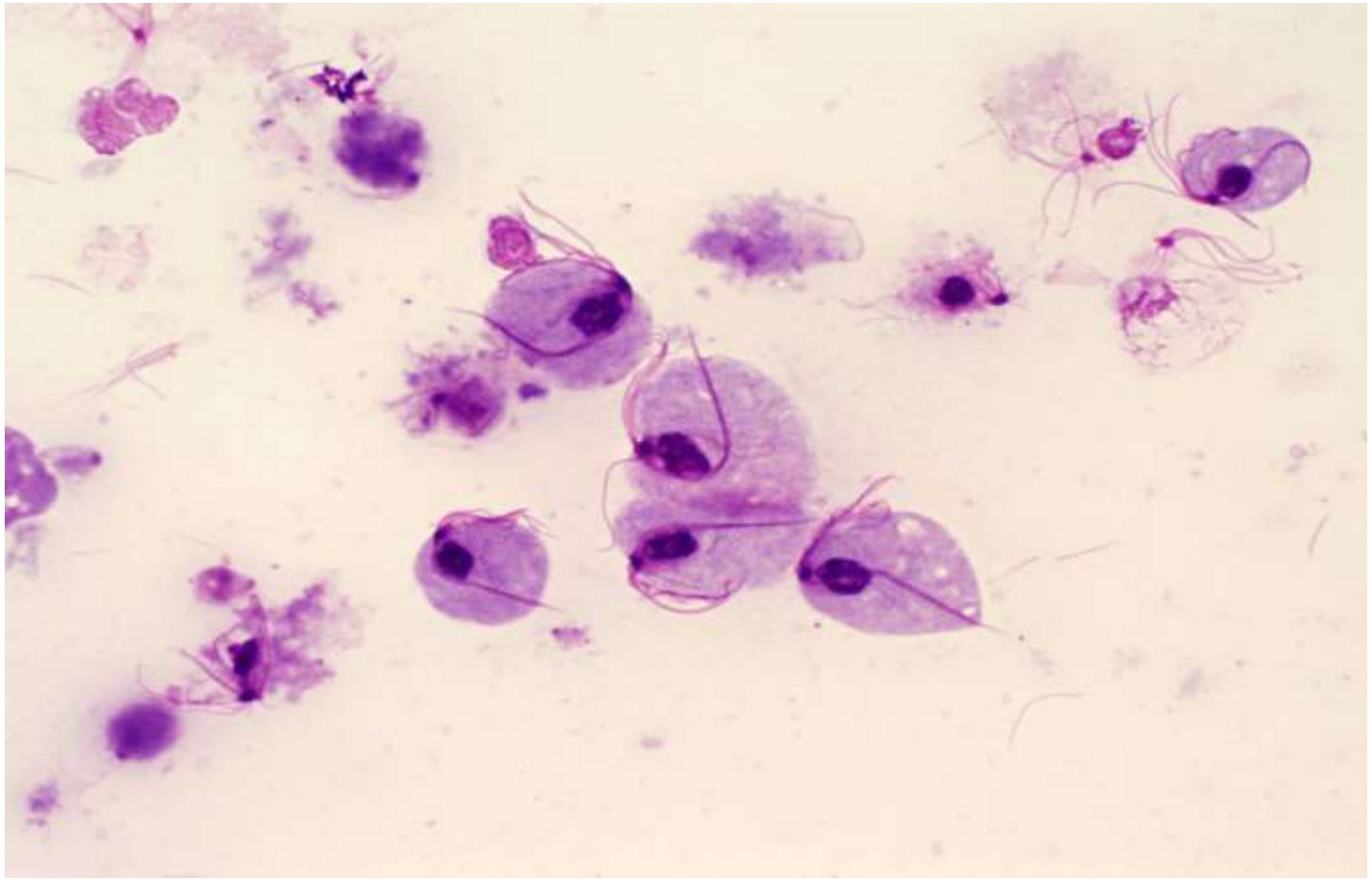


Diagnosis

Testing is indicated in symptomatic women, and the gold standard is a nucleic acid amplification test (NAAT) preferably on a vaginal or endocervical swab or on urine, with sensitivities and specificities reaching over 95%, depending on the specimen and the test. Microscopy and culture of a sample of the vaginal discharge and point of care test (POCT) using different techniques are also used but are limited by reduced sensitivity.

Microscopy of vaginal discharge and culture in Diamond's medium. Wet mount, where the discharge is mixed with saline and examined under the microscope, may show the motile protozoal organism with the typical flagellae. This is sensitive in diagnosing between 60 and 70 per cent of cases.

Trichomonas vaginalis



Management

The patient and the husband should be treated and both should be screened for other sexually transmitted infections.

Drug treatment

Metronidazole in a single oral dose of 2 g, or 400 mg twice daily, is a very effective with cure rates of up to 95 per cent. Single-dose regimens are more compliant and can be cheaper. Tinidazole in a single oral dose of 2 g is equally effective, but can cost more.

Treatment failures occur if the husband has not been treated, failure of compliance of the medication due to side effects, or resistance develops to the treatment. In such cases, the history should be reviewed, the route of administration changed (rectal rather than oral) or in some cases higher doses of metronidazole given. It is also thought that there may be some vaginal organisms which may reduce the potency of metronidazole, and treating the patient with some broad spectrum antibiotics may actually improve the response.

Bacterial vaginosis

Bacterial vaginosis is a common condition characterized by the presence of foul-smelling vaginal discharge with no obvious inflammation. While a definitive cause is not determined, It occurs due to the growth and increase in anaerobic species with simultaneous reduction in the lactobacilli in the vaginal flora causing an increase in the vaginal pH making it more alkaline (4.5 to 7.0). The common species involved are Gardnerella vaginalis, Mycoplasma hominis and Bacteroides spp. Gardnerella spp. are commonly isolated in women with no clinical signs of infection, so the diagnosis should be carefully considered.

It is the commonest cause of abnormal vaginal discharge, bacterial vaginosis (BV) has been reported in 5– 50% of females worldwide. Other risk factors include douching, black race, smoking. BV is associated with a number of pathologies including pelvic inflammatory disease (PID), post hysterectomy vaginal cuff cellulitis.

Signs and symptoms

1. Fishy malodorous vaginal discharge
2. Asymptomatic carriers
3. More prominent during and following menstruation
4. Creamy or greyish-white vaginal discharge commonly adherent to the wall of the vagina.

Diagnostic features

Amsel criteria:

1. Presence of clue cells on microscopic examination.

Clue cells are epithelial cells which are covered with bacteria giving a characteristic stippled appearance on examination.

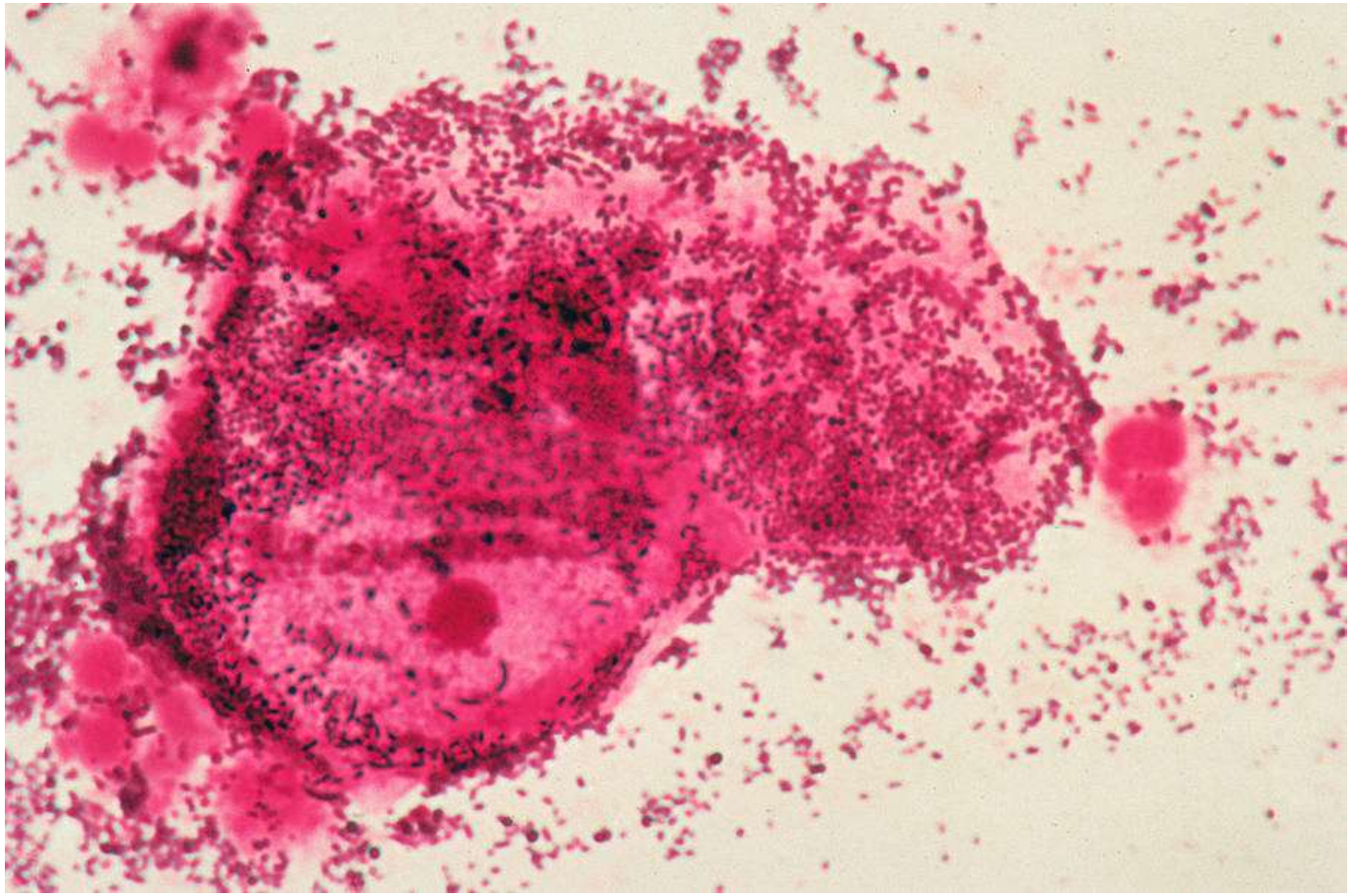
2.Creamy greyish white discharge which is seen on naked eye examination.

3.Vaginal pH of more than 4.5.

4.Release of a characteristic fishy odour on addition of alkali: 10 per cent potassium hydroxide.

There should be at least three criteria for diagnosing bacterial vaginosis using this Amsel criteria.

Light micrograph of a cervical smear from a patient with bacterial vaginosis. An epithelial cell (pink, center) is covered in Gardnerella vaginalis bacteria (rods), one of the species of bacteria that cause vaginosis.



Management

Metronidazole either orally or as a gel is a simple and effective form of treatment. It is given in an oral dose of 400 mg twice a day for 5 days or a single dose of 2 g.

Alternatively, it can be used as a local intravaginal gel (0.75 per cent) usually applied at night for between 5 and 7 days.

Clindamycin 300 mg twice daily or a topical vaginal cream (2 per cent) is also effective in treatment, however it is more expensive. There are also development of psuedomembranous colitis with clindamycin.

However, the drug is more effective in treating the different anaerobic species when compared to metronidazole.

Oral or intravaginal treatments with metronidazole or clindamycin are indicated in women with symptoms or those in whom it is diagnosed and elect for treatment – especially prior to gynaecological surgical procedures. Women with BV should be advised that vaginal douching or excessive genital washing should be avoided.

Pregnancy and bacterial vaginosis

Presence of bacterial vaginosis in the first trimester can lead to late second trimester miscarriages and preterm labour with its associated complications and rupture of membranes. Women with a previous history of second trimester loss or preterm delivery should have a vaginal swab performed in early pregnancy and if bacterial vaginosis is detected, it should be actively treated in the early second trimester of pregnancy. Metronidazole is safe to use in pregnancy, however, large or prolonged doses should be avoided. An increased risk of HIV acquisition is observed in women at risk with BV.

Vaginal discharge in children

Vaginal discharge in children is not uncommon. It has been found to be the commonest gynaecologic complaint in girls and the most common reason for referral of pre-pubertal girl to gynaecologists. It can be a source of distress for the girl, care giver and the health provider. The low estrogen levels in girls predispose the vaginal epithelium to infection. In children is different from that seen in adults. A thorough knowledge and awareness will help the physician/ paediatrician/ dermatologist to effectively treat these girls without the need for unnecessary referrals.

VD can be physiological or pathological in children. Mucoid often bloody VD in the first fourteen days of life and milky white or clear mucoid discharge in prepubertal age are considered physiological. Any VD other than these should be viewed as pathological.

The following features will to some extent help suspect the cause of VD in young girls. Thick, white, cheesy – candidal; brownish and malodorous- foreign body induced; whitish grey with fishy odour– bacterial vaginosis; mucopurulent sometimes bloody– Shigella; purulent thick yellow – gonorrhoea; frothy watery yellow - trichomoniasis; and colourless discharge – pinworm infestation.

THANK YOU