VAGINAL DISEASES

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The vagina is the lowest part of the internal genital tract of the female. The vagina consists of a , non-keratinized squamous epithelial lining supported by connective tissue and surrounded by , circular and longitudinal muscle coats. The vaginal epithelium has a longitudinal column in the anterior and posterior wall and from each column there arenumerous transverse ridges or rugae extending laterally on each side.

The squamous epithelium during the reproductive years is thick and rich in glycogen. It does not change significantly during the menstrual cycle, although there is a small increase in glycogen content in the luteal phase and reduction immediately premenstrually. The prepubertal and postmenopausal epithelium is thin or atrophic. Between puberty and the menopause the presence of lactobacilli maintains a pH between 3.8 and 4.2.

This protects against infection. Before puberty and after the menopause the higher pH and urinary and faecal contamination increase the risks of infection. The other time when vaginal atrophy is noted is in the post-partum period or associated with lactation.

Vaginal Diseases:

1. vaginal infection
2. ,vaginal atrophy,
3. vaginal trauma, fistula,,
4. endometriosis
5. vaginal intraepethelial neoplasia (VAIN) diethylstibesterol
6. related vaginal lesions benign vaginal tumors, malignant vaginal tumors

Vaginal infection

Normal physiological vaginal discharge consists of transudate from the vaginal wall, squames containing glycogen, polymorphs, lactobacilli, cervical mucus and residual menstrual fluid, and a contribution from the greater and lesser vestibular glands.

Vaginal discharge varies with oestrogen levels and does not automatically mean infection. Non-specific vaginitis may be associated with sexual trauma, allergy to deodorants or contraceptives and to chemical irritation from topical antimicrobial treatment. Non-specific infection may be further provoked by the presence of foreign bodies, for example, ring pessary, continual use of tampons and the presence of an intrauterine contraceptive device.

BACTERIAL VAGINOSIS

Bacterial vaginosis has been associated with organisms of the ***Bacteroides spp, Mobilincus spp, Mycoplasma hominis, Haemophilus*** species and more recently with the organism ***Gardnerella vaginalis,*** the ***lactobacilli*** may be reduced or absent. These organisms are believed to be sexually transmitted.

Usually the vagina is not inflamed and therefore the term vaginosis is used rather
than vaginitis. Nearly half of'infected' patients will not have symptoms.

Diagnosis: the diagnosis is commonly made in clinical practice using the (Asmel) criteria

Examination will reveal a thin grey white discharge

Vaginal pH increased to greater than 4.5.

• Gram stain of collected material will show 'clue cells' which consist of vaginal epithelial cells covered with microorganisms and the absence of lactobacilli.

• Adding a drop of vaginal discharge to saline on a glass slide and adding one drop of 10% potassium hydroxide. This releases a characteristic fishy amine smell.

Treatment: is with metronidazole, either as 200-400 mg three times a day for 5- 7 days or as a single 2 g dose. Alternatively,clindamycin can be used as a vaginal cream. Clinical significance: There are claims that bacterial vaginosis is associated with increased risk of preterm labour, endometriosis, pelvic inflammatory disease and postoperative pelvic infection.

VAGINAL CANDIDIASIS

Over three-quarters of women have at least one episode of vaginal candidiasis. A few women have frequent recurrences. The organism is carried in the gut, under the nails, in the vagina and on the skin.The yeast ***Candida albicans*** is implicated in more than 80 per cent of cases. Sexual acquisition is rarely important, although the physical trauma of intercourse may be sufficient to trigger an attack in apredisposed individual.

predisposing factors: Immunosuppression, HIV, immunosuppressive therapy, e.g. steroids, diabetes mellitus, vaginal douching, bubble bath, shower gel, tight clothing, , increased oestrogen, pregnancy, high-dose combined oral contraceptive pill, underlying dermatosis, e.g. eczema, broad-spectrum antibiotic therapy

The classical presentation is with itching and soreness of the vagina and vulva, with a curdy, white discharge, which may smell yeasty, but in some cases there may be itching and redness with a thin, watery discharge. The pH of vaginal fluid is usually normal, between 3.5 and 4.5. Microscopy and culture of the vaginal fluid can confirm a diagnosis .Asymptomatic women from whom ***Candida*** is grown on culture do not require treatment.

Treatment: Vaginal creams and pessaries can be prescribed at a variety of doses and durations of treatment. For uncomplicated ***Candida,*** a singledose treatment, such as clotrimazole 500 mg, is adequate. Some women have a preference for oral therapy, particularly if treatment is required at the time of menstruation

OTHER INFECTIONS: like syphilitic lesions either primary lesion which usually appears as a single painless well-demarcated ulcer with indurated edges associated with lymphadenopathy,

or secondary lesion as condylomata lata diagnosed by microscopical identification of the causative agent ***Treponema pallidum*** or by serological tests like (ELISA).

Treatment by procain penicillin. Viral infection like human papilloma virus (vaginal warts), or herpes simplex virus infection can be seen in the vagina.

Vaginal Atrophy

This is seen following the menopause, but also prior to puberty and during lactation. Diagnosis: Examination shows loss of rugal folds and prominentsubepit helial vessels, sometimes with adjacent ecchymoses. The patient may present with vaginal bleeding, vaginal discharge, or vaginal dryness and dyspareunia.

Treatment: requires oestrogen to restore the vaginal epithelium and pH. This is usually by topical oestrogen cream,

but care must be taken to avoid excessive absorption through the thinned mucosa. Vaginal cream inserted nightly for a week and repeated monthly. Alternatively in postmenopausal **women, hormone replacementt**herapy **can be used**

Vaginal trauma

This may follow coitus, with damage to the epithelium or less frequently vaginal muscle wall, or breaking down of adhesions at the vault following vaginal surgery. It may be associated with parturition or be iatrogenic, *for example, ulceration associated with the use of a ring pessary. Trauma may be associated with significant haemorrhage and occasionally will leave vesical or rectal fistulae.

A fistula may be due to trauma, or it may be due to carcinoma or Crohn's disease, rectovaginal fistula may follow an obstetrictear or extension of an episiotomy, and an incomplete or inadequate repair. Fistulae involving ureter, bladder or rectum may follow gynaecological surgery.

Endometriosis

Occasionally deposits **of** endometriosis can be found beneath the vaginal epithelium, following surgery or episiotomy. They may cause abnormal vaginal bleeding (e.g.after hysterectomy) or pain. They are most easily identified while they are bleeding. Treatment can be by laser vaporization or excision, or by drug therapy as for endometriosis elsewhere.

Vaginal Intraepethelial Neoplasia (VAIN):

The terminology and pathology of VAIN are analogous to those of CIN (VAIN I-III). The main difference is that vaginal epithelium does not normally have crypts, so the epithelial abnormality remains superficial until invasion occurs.

The common exception to this is found following surgery - usually hysterectomy - when abnormal epithelium can be buried below the suture line or in suture tracks.

Natural history of VAIN: VAIN is seldom seen as an isolated vaginal lesion. It is more usual for it to be a vaginal extension of CIN. In most cases it is diagnosed colposcopically prior to any treatment during the investigation of an abnormal smear. However, it may not be recognized until after a hysterectomy has been performed. When this happens, abnormal epithelium is likely to be buried behind the sutures used to close the vault.

Consequently a portion of the lesion will remain invisible and invaluable. These often prove to have unexpected invasive disease. Untreated or inadequately treated VAIN may progress to frank invasive cancer. Very rarely, VAIN may be seen many years after radiotherapy for cervical carcinoma, when it is probably a new lesion. Care must be taken in these women to ensure that post radiotherapy changes are not being misinterpreted as VAIN.

Treatment **of** VAIN:

- If the cervix is still in situ, local ablation or excision of VAIN is very effective.
- After hysterectomy, if the lesion involves the suture line, a partial vaginal colpectomy that removes the vaginal vault is usually recommended to younger women. The results of this approach are good, and early invasion may be identified.
- In older women or when access is poor, local radiotherapy produces excellent results.

Diethylstilboestrol (DES) and related vaginal lesions:

DES was used from the mid-1940s for the treatment of recurrent or threatened abortion and unexplained fetal loss late in pregnancy. Reported associated diseases include:

- Clear cell adenocarcinoma of the vagina (affect young girls 14-19 years old).
- Vaginal adenosis was often seen in combination with cervical eversion or ectropion.
- Ridge between the vaginal and cervical tissue referred to as a collar (occurs in 25% of exposed patients).
- Sometimes there will be cytological abnormality, extensive immature metaplasia and CTN.

Benign vaginal tumours

These are uncommon but occur within the vaginal wall and include myoma, fibromyoma, neurofibroma, papilloma, myxoma and adenomyoma.

Cystic lesions may be found within the vagina, usually laterally and occasionally extending from the fornix down to the introitus. These are usually of Gartner's or Wolffian duct origin, these mesonephric (Gartner's) or paramesonephric cysts may be seen near the fornices. If asymptomatic,

they are best not treated. If treatment is required, marsupialization is effective and safer than excision. They may increase to such a size as to interfere with coitus or tampon use.

Vaginal cancer

Invasive vaginal cancer is rare. **Incidence:** is 0.7/100000 women.

Etiology: There is little firm evidence of etiological agents^radiotherapy for cervical cancer may be a risk of subsequent development of vaginal cancer 10-40 years later, intrauterine exposure to diethylstilboestrol is associated with increased prevalence of clear cell adenocarcinoma of vagina.

Pathology: The great majority (92 per cent) of primary vaginal cancers are squamous. . Others like clear cell adenocarcinoma, melanoma is very rare

Natural history: The upper vagina is the commonest site for invasive disease. Squamous vaginal cancer spreads by local invasion initially. Lymphatic spread occurs to .the pelvic nodes from the upper vagina and to both pelvic and inguinal nodes from the lower vagina.

Clinical staging:

FIGO staging for vaginal cancer (1995)

Stage	Definition
0	Intraepithelial neoplasia
1	Invasive carcinoma confined to vaginal mucosa
II	Subvaginal infiltration not extending to pelvic wall
III	Extends to pelvic wall
Iva	Involves mucosa of bladder or rectum
IVb	Spread beyond the pelvis

Diagnosis and assessment

History & examination: The most common presenting symptom is vaginal bleeding, other symptoms are vaginal discharge and pelvic pain being less common. Some are detected when asymptomatic by cervical cytology.

investigation: High-definition MRI has become the most important part of the pre-treatment assessment of invasive cancer of the vagina. A careful examination under anaesthesia combined with colposcopy will identify coexisting VAIN and help to define the location of the lesion. A chest X-ray and an IVP are the only radiological investigations required routinely.

• The majority of cases of vaginal carcinoma are treated using pelvic radiotherapy.

• although surgical excision is an appropriate form of management in selected cases (such as when tumor is stage l in the posterior upper l/3rd of vagina to be treated by radical hystrectomy+pelvic lymphadenopathy+vaginectomy, or the tumor is small mobile stagel lower down in the vagina amenable to be treated by vulvectomy+lymghadenectomy.

- **Experimental chemotherapeutic regimes are being developed both alone and in conjunction with radiotherapy for advanced cases or recurrent disease.**

Radiotherapy:Techniques utilized have included:

- External beam radiotherapy (teletherapy)
- Brachytherapy (e.g. interstitial implants, intravaginal cylinders or vaginal ovoids)
- Combination of the two.

The optimal dose remains unclear but the mid-tumour dose should beat least 75 Gy. Acute complications include:

- Proctitis
- Radiation cystitis
- Vulvar excoriation or ulceration and even vaginal necrosis.

Significant long-term complications reported include:

- Vesico-vaginal or recto-vaginal fistulae
- Rectal stricture
- Vaginal stenosis.

In younger women, vaginal stenosis may be a long-term complication of great significance.

Prognosis

FIGO stage	Corrected 5-year survival%
I	97
II	85
III	46
IV	50

The 5-year survival figures described for Stage I are generally good, but the results of therapy in more advanced disease are much less satisfactory.