Clinical Manifestations of Sexually Transmitted Diseases : An Overview

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Abstract

The global health burden of sexually transmitted infections including Human Immune Deficiency Virus (HIV) is large and ever increasing. The world health organization estimates that there are around 498 million people aged 15-49 years who are infected each year with chlamydia, gonorrhoea, syphilis and chancroid. Various taboos and stigmas associated with these diseases negatively impact on the treatment seeking behavior and delay the treatment. Reporting of less number of cases also reduces the resources allocated for their control.

Introduction

Sexually transmitted infections are infections that are transmitted by sexual contacts. It is a broad term which includes infections by bacteria, virus, protozoa that result in clinical manifestations involving genitalia and other parts of the body in sexual interaction. In this article we are going to discuss about clinical presentations of six main sexually transmitted diseases which are commonly seen in clinical practice. An overview of chlamydia and gonorrhea infection is also given as these are of common occurrence in dermatology outpatients.

Syphillis

Syphillis also known as 'Great imitator' is a chronic systemic infectious disease caused by

spirochaete Treponema pallidum subspecies pallidum. Based on the modes of the transmission, it is classified into acquired type and congenital type. Acquired type can be early acquired or late acquired.

Classification

1. **Acquired**

A. Early Acquired	B. Late Acquired
1.Primary	1. Late latent
2.Secondary	2. Tertiary syphilis
3.Early latent	Benign tertiary
	Cardiovascular
	Neurosyphillis

2. **Congenital**
   Early congenital
   Late congenital

Pathogenesis

The clinical course of syphilis is extremely varied and is interrupted by various phases of variable duration. Although the exact course of disease is not yet clear, report of Oslo study [1] describes the natural course of disease as follows.

Exposure to Treponema pallidum (after unprotected sex $^{1}/_{3}$ of exposed get infected)

↓

Primary chancre (heals in 3-8 weeks)

↓

Secondary syphilis (heals in 3-9 months)

↓

Early latent syphilis (relapse may occur in 25% cases)

↓

Late latent (>2 years from onset)

↓

↙ ↘

Remission (2/3 cases)

Tertiary (1/3 cases)
- Late
- Cardiosyphilis
- Neurosyphilis

Primary chancre

It presents as a well-defined ulcer with regular raised or rolled out edges and a clean base. Indurated base of chancre giving the feel of a button entitles it with the term hard chancre. Lymph nodes enlarge in 7-10 days, initially unilateral but soon become bilateral and appear small, discrete, non-tender, firm, and rubbery. Chancre may be tender due to secondary bacterial infection and may occur in extragenital sites like oral, anorectal, breast and digits. Proctitis has been reported among homosexuals [1].

Secondary Syphilis

Initially it presents with a rash which is non-vesicular, non-pruritic and bilaterally symmetrical. 'Macular syphilide' is the earliest generalized syphilide which appears as pinkish to coppery red non-scaly macules on trunk, palms and soles soon converting into papular syphilide that presents as annular or discrete circular, corymbose papules. Papules in moist intertriginous areas coalesce to form fleshy, flat topped, broad base masses which are highly contagious are known as condyloma lata. At times they have been reported independent of appearance of skin rash [2].

Other signs and symptoms are as follows-

- Hair – Irregular patches of non-scarring hair loss in occipital and parietal region, popularly known as 'Moth eat on alopecia'.
- Nail – Lusterless, brittle with pitting, splitting and onycholysis.
- Mucous membrane – Irregular serpiginous erosions or ulcers known as 'Snail track ulcers'.
- Constitutional symptoms like fever, malaise, arthralgia, myalgia, and headache are common.
- Bilaterally symmetrical non tender, discrete, mobile, non suppurative firm lymph nodes.
- Anemia, leukocytosis, raised erythrocyte sedimentation rate may be seen in this stage.
- Signs of meningitis may occur.

Early latent syphilis

No clinical signs are appreciated in this stage, however the reaginic and specific tests are positive.

Early relapsing syphilis

25% latent cases relapse back with clinical signs and symptoms due to which this phase is known as 'chancre redux'.

Late syphilis

After 2 years disease enters into a non-infective phase. Reaginic test is positive in low dilution but neurosyphilis needs to be excluded by cerebrospinal fluid (CSF) examination.

Tertiary syphilis

Characteristic lesion is gumma which is single or multiple, varying in size from pin head to a few centimeres and has a central area of tissue necrosis resembling casseous material surrounded by a granulation tissue with a tough outer fibrous border. It heals with central scar. Psoriasiform or scaly lesions may be seen in this stage. Other structures like bones, muscles, joints may be involved. Important organs involved are as follows-

Cardiovascular syphilis

Symptoms appear after 10-40 years from the onset of disease.

Great vessels like aorta, pulmonary artery may show thickening, median wall destruction followed by dilatation of vessel. Aortic aneurysm is seen in 20% of cases. Chest X-ray may show egg shell calcification.

Neurosyphillis

Features of meningitis may suggest its onset with CSF examination showing high cell count (predominantly lymphocytes) and raised proteins.

Herpes Genitalis

It is one of the commonest occurring sexually transmitted disease, which is caused by Herpes virus hominis. There are two types of Herpes

simplex viruses HSV1 and HSV2. HSV 2 is more commonly seen in genital area, however genital HSV1 is being commonly seen in young adults now-a-days [3].

Pathogenesis

Herpes virus infects epidermal cells leading to ballooning degeneration of cells. The outcome of this change is formation of multinucleate giant cells with intranuclear inclusion bodies which is one of the golden sign for making the diagnosis.

Primary genital herpes

The primary lesions occur usually with constitutional symptoms like fever, malaise, headache, myalgia followed by skin lesions. The lesions start as grouped vesicles which soon rupture to form erosions coalescing together to form superficial ulcers with polycyclic margins. New lesions continue to occur for 8-10 days and viral shedding usually continues for the first 2 weeks. Scarring is uncommon.

First episode of genital herpes may lead to

- Secondary bacterial infection
- CNS involvement like Aseptic meningitis, Transverse myelitis, Sacral radiculopathy
- Extragenital lesions frequently seen on thighs, buttocks and groins

Recurrent genital herpes

Episodes are milder and last for only 5-7 days. Over 90% patients have prodromal symptoms varying from mild tingling sensation to shooting pain prior to appearance of lesion. Healing is usually complete in 7-10 days.

Herpes genitalis infection in HIV positive patients

Atypical presentations are common with deep progressive ulcers. Continuous and prolonged viral shedding is the commonest sequelae. Hemorrhagic deep ecthyma like ulcer may form. Systemic involvement like hepatitis, pneumonitis is more common in such immunocompromised state.

Anogenital Warts

It is caused by human papilloma virus (HPV) which is a DNA virus. Both cell mediated immunity and humoral immunity are hampered.

Lesions appear after the incubation period of 1-8 months with an average duration of 3 months. In males, genital warts appear most commonly in subprepucial region, frenulum followed by glans and coronal sulcus. In females, common sites involved are posterior part of introitus, labia, perineum, and perianal area. Various clinical presentations are as follows [4].

1. Condyloma accuminata - Lesions are pedunculated cauliflower like with fissures and irregular surface.
2. Papular wart - Non pedunculated dome shaped papules are located in fully keratinized skin.
3. Verruca vulgaris type - Firm papular lesions with slightly rough horny surface with no pedicle are seen.
4. Flat topped papules
5. Bowenoid papulosis - It is a variant of papular wart characterized by hyperpigmented, dome shaped, smooth, flat topped papules. It is caused by HPV 16 and shows high grade squamous intra-epithelial neoplasia.
6. Buschke Lowenstein tumor - It is a verrucous hyper-keratotic exophytic growth in genital and perianal area.

Chancroid

Chancroid, also known as 'soft sore' is an acute infectious disease caused by gram negative bacillus Haemophillus ducreyi. It's Incubation period is usually short, ranging from 1-14 days.

Initially, it starts with a small inflammatory papule surrounded by erythema which progresses to form a well circumscribed painful ulcer covered with purulent exudates. Base of the ulcer is non-indurated and has ragged undermined edges. Removal of the exudate reveals unevenly distributed, highly vascular granulation tissue which may bleed on scraping or gentle manipulation. Painful inguinal lymphadenopathy is seen. Nodes are mostly unilateral and matted together. They may suppurate and form an abscess. If untreated these may rupture through the skin with formation of a single sinus which may breakdown to form a chancroidal ulcer. Other complications include phimosis, paraphimosis and urethral fistula.

Clinical variants of chancroid include

- Giant chancroid
- Phagedenic chancroid
- Follicular chancroid
- Popular chancroid
- Dwarf chancroid

Lymphogranuloma Venereum

Lymphogranuloma venereum (LGV) is a sexually transmitted infection caused by gram negative intracellular bacilli Chlamydia trachomatis serovars L1, L2, L3. It is also known as 'Tropical bubo'. Incubation period varies from 1-2 weeks.

There are three stages of infection [5,6].

1. Primary
2. Secondary (inguinal)
3. Tertiary (complication)

Primary stage

Primary lesion mostly goes unnoticed but about ¼ of the patients may present with a papule, a vesicle, an erosion or an ulcerated area at the site of inoculation.

Secondary stage

Characteristic unilateral inflammatory swelling of inguinal and their draining lymph nodes is seen which may be bilateral in about 1/3 of the cases. Lymph nodes may get matted and overlying skin becomes thick, dusky and it soon ruptures [7,8]. In 20% of the patients femoral group of lymph nodes are also involved separated from inguinal lymph nodes by pauparts ligament giving the term 'groove sign of greenblat' [8]. Fever, sweating, malaise may be present. Rupture of the lymph nodes form multiple sinus and get resolved after some time.

Complications

- Lymphatic obstruction leads to elephantiasis of the genitals.
- In males, chronic massive oedema may give rise to 'ram horn penis' and 'saxophone penis'.
- Likewise in females chronic edema may cause enlargement of the vulva giving it a fancy name 'esthiomene' [8,9].

Donovanosis

Also known as 'Granuloma inguinale', it is a slowly progressive, chronic, mildly contagious ulcerative disease caused by Calymmatobacterium granulomatis. One of the characteristic histopathological feature is the presence of intracytoplasmic structure, known as 'Donovan bodies'. Incubation period ranges from 3 days to 3 months.

It begins as single or multiple firm papules, which rupture to form a well-defined painless ulcer with beefy red color and granulomatous base and bleeds easily on touch. Phimosis or lymphoedema may occur in active stage only. Lymph nodes are less commonly involved but secondary infection may cause them to appear. However lesions present in the groins may give the appearance of an enlarged lymph node, popularizing the term 'Pseudo bubo'. Other sites like perianal, inguinal region may be involved in 10-20% of cases.

Other morphological variants are-

- Classical or fleshy exuberant type - Most commonly seen variant with a characteristic finding of exuberant beefy red granulation tissue over the top of the lesion.
- Hypertrophic type - Raised warty looking appearance of the lesion.
- Sclerotic or cicatricial type - Extensive fibrous tissue is present which may lead to deformity of external genitalia.
- Destructive or necrotic type - mainly associated with super-added anaerobic infection.

Gonorrhoea

It is caused by gram negative diplococci Neisseria gonorrhoeae. Incubation period ranges from 1 to 14 days. Mucopurulent discharge per urethra is the most common complaint in men. Over a span of 1-2 days this discharge becomes thick, profuse and purulent with increased tendency of burning micturition [10]. In females, moderate degree of burning micturition, frequency and urgency is the earliest complaint. However scanty mucoid discharge may follow. Complications include epididymitis, prostatitis in men and salpangitis and bartholin abscess in women.

Chlamydia

Chlamydia trachomatis serovar B, D, E, F, G, H, I, J and K is one of the commonest cause of nongonococcal urethritis now a days. Incubation period ranges from 7 to 21 days. Dysuria followed by mild urethral discharge is the commonest complaint in most of the cases. Some patients may present with hematuria owing to the involvement of bladder.

Without proper treatment other organs may get involved and can lead to epididymitis, prostatitis and proctitis in men and cervicitis, endometritis and salpingitis in women.

Conclusion

Sexually transmitted diseases are caused by a diverse group of organisms. Many individuals have asymptomatic early infections, and this favours onward transmission. Various complications leading to infertility, postabortal and postpartum infections and significant discomfort to the normal sexual life of a person is a matter of concern. A coordinated approach is therefore required to reverse the rising trend of sexually transmitted infections. This approach will be effective if signs and symptoms of infections are recognized early, correct diagnosis is done and treatment is given according to accepted protocol.

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