

Skin Infections and its Treatment

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Skin Infections

Common skin infections are:

Viral infections

• When a cell is infected by a virus a lesion can result. Lesions can also result from an inflammatory response to the viral infection.

These include

Warts and Verruca's are typically small, rough, and hard growths that are similar in color to the rest of the skin.

Clinical Manifestation They typically do not result in symptoms except when on the bottom of the feet where they may be painful. While they usually occur on the hands and feet they can also affect other locations. One or many warts may appear. They are not cancerous.

Cause Warts are caused by infection with a type of human papillomavirus (HPV).

❖ Factors that increase the risk include use of public showers, working with meat, low immune system. The virus is believed to enter the body through skin that has been damaged slightly. A number of types exist including: common warts, plantar warts, filiform warts, and genital warts. Genital warts are often sexually transmitted.

Treatment

• Antiviral drugs are prescribed

Procedures

❖ Keratolysis, of dead surface skin cells usually using salicylic acid, blistering agents, immune system modifiers ("immunomodulators"), or formaldehyde, often with mechanical paring of the wart with a pumice stone, blade etc.

❖ Electrodesiccation

❖ Cryosurgery or cryotherapy, which involves freezing the wart (generally with liquid nitrogen), creating a blister between the wart and epidermal layer after which the wart and the surrounding dead skin fall off [1]. An average of 3 to 4 treatments are required for warts on thin skin. Warts on calloused skin like plantar warts might take dozens or more treatments [2].

❖ Surgical curettage of the wart

❖ Laser treatment

Chickenpox, also known as **varicella**, is a highly contagious disease

Cause by the initial infection with varicella zoster virus (VZV)

➤ Respiratory aerosols and contact with secretions from skin lesions transmit the virus.

Clinical Manifestation

Systemic symptoms include headache, fever, and malaise.

It usually starts on the chest, back, and face then spreads to the rest of the body. Other symptoms may include fever, tiredness, and headaches. Symptoms usually last five to seven days.

Complications may occasionally include pneumonia, inflammation of the brain, and bacterial skin infections. The disease is often more severe in adults than children. The early (prodromal) symptoms in adolescents and adults are nausea, loss of appetite, aching muscles, and headache. This is followed by the characteristic rash or oral sores, malaise, and a low-grade fever that signal the presence of the disease. Oral manifestations of the disease (enanthem) not uncommonly may precede the external rash (exanthem). In children the illness is not usually preceded by prodromal symptoms, and the first sign is the rash or the spots in the oral cavity. The rash begins as small red dots on the face, scalp, torso, upper arms and legs; progressing over 10–12 hours to small bumps, blisters and pustules. followed by umbilication and the formation of scabs.

Prevention The varicella vaccine

Treatment

Anti-viral drugs are prescribed, isolation of infected person is very important

Herpes zoster (shingles):

Secondary chickenpox in an adult.

Cause: Shingles is due to a reactivation of varicella zoster virus

Clinical Manifestation Characterized by a unilateral, painful eruption of vesicles along the distribution of a sensory nerve.

- Any branch of the trigeminal nerve may be involved if lesions affect the face.
- Vesicles are often preceded by pain, burning, or paresthesia.
- The disease usually lasts for several weeks.
- Neuralgia may take months to resolve.
- The earliest symptoms of shingles, which include headache, fever, and malaise, are nonspecific, and may result in an incorrect diagnosis.

Treatment

Symptomatic treatment is often needed for the complication of postherpetic neuralgia

Analgesics
Antivirals

Bacterial infections

Also called as **pyodermas**, pus forming bacterial infections of skin may be primary or secondary.

Primary skin infections originate in previously normal appearing skin and are usually caused by single organism.

Secondary skin infection arises from a preexisting skin disorder or from disruption of the skin integrity from injury or surgery

Cause

Several microorganisms may be implicated eg. *Staphylococcus aureus*, group a streptococci

Bacterial infections of skin of common occurrence are:

Impetigo is a highly infectious condition manifesting as superficial skin pustules usually around the nose and mouth.

Cause

Common causative bacteria are ***Staphylococcus aureus*** and ***Streptococcus pyogenes***.

Clinical Manifestation

The lesion of impetigo begins as small, red macules, which quickly become discrete, thin walled vesicles that rupture & become with a loosely adherent honey-yellow crust. These crusts are easily removed to reveal smooth, red, moist surface on which new crusts soon develop.

Treatment

Systemic antibiotic therapy is usual treatment

Topical antibacterial therapy may be prescribed when the disease is limited to a small area eg mupirocin.

Cellulitis is a bacterial infection involving the inner layers of the skin. It specifically affects the dermis and subcutaneous fat. is a diffuse infection of the skin and subcutaneous tissues

Cause The causative bacteria enter the body through a break in the skin and these include ***Streptococcus pyogenes*** or ***Clostridium perfringens***.

Clinical Manifestation

Signs and symptoms include an area of redness which increases in size over a few days. The borders of the area of redness are generally not sharp and the skin may be swollen. While the redness often turns white when pressure is applied, this is not always the case. The area of infection is usually painful [3]. Lymphatic vessels may occasionally be involved, and the person may have a fever and feel tired.

Treatment is typically with antibiotics taken by mouth, such as cephalexin, amoxicillin, or cloxacillin. If un-treated, it may be complicated by necrotizing fasciitis or even septicemia.

Acne Vulgaris

Acne Vulgaris is common in adolescents and is thought to be caused by increased level of male sex hormones after puberty. Sebaceous glands in hair become blocked and then infected, leading to inflammation and pustule formation. Acne is the most commonly encountered skin condition in the adolescents and young adults between 12-35 years.

Clinical Manifestation is characterized by pustule formation on the face in adolescents

The primary lesion of acne are comedones. Closed comedones (white heads)

Open comedones (blackheads)

Treatment

Many different treatments exist for acne. These include alpha hydroxy acid, anti-androgen medications, antibiotics, antiseborrheic medications, azelaic acid, benzoyl peroxide, hormonal treatment, keratolytic soaps, nicotinamide, retinoids, and salicylic acid

Fungal Infections

Fungal infections of the skin are very common and include athlete's foot, ringworm, and yeast infections.

Fungal infections of skin which need to be mentioned here are:

Athlete's Foot, also called tinea pedis, is a fungal infection of the foot. It causes peeling, redness, itching, burning, and sometimes blisters and sores.

Clinical Manifestation

Signs and symptoms of athlete's foot vary from person to person. However, common symptoms include:

- Peeling, cracking, and scaling of the feet
- Redness, blisters, or softening and breaking down of the skin
- Itching, burning, or both

Treatment

Athlete's foot is treated with topical antifungal medication (a drug placed directly on the skin) in most cases. Severe cases may require oral drugs (those taken by mouth). The feet must be kept clean and dry since the fungus thrives in moist environments

Candidiasis

Candidiasis is an intertriginous infection affecting submammary folds, axillae and digital clefts. It is a common cause of vulvovaginitis in females

Clinical Manifestation: Signs and symptoms include white patches on the tongue or other areas of the mouth and throat [4]. Other symptoms may include soreness and problems swallowing [5]. When it affects the vagina, it is commonly called a **yeast infection**. Signs and symptoms include genital itching, burning, and sometimes a white "cottage cheese-like" discharge from the vagina.

Treatment candidiasis is treated with antifungal medications; these include clotrimazole, nystatin, fluconazole, voriconazole.

Pityriasis Versicolor

It is characterized by small confluent scaly depigmented patches.

Cause by the fungus *Malassezia globosa*

Clinical Manifestation

Occasional fine scaling of the skin producing a very superficial ash-like scale

- Pale, dark tan, or pink in color, with a reddish undertone that can darken when the patient is overheated, such as in a hot shower or during/after exercise. Tanning typically makes the affected areas contrast more starkly with the surrounding skin [6].
- Topical antifungal medications containing selenium sulfide are often recommended
- Sharp border [6].
- Oral antifungals including ketoconazole or fluconazole in a single dose, or ketoconazole for seven days, or itraconazole can be used

Dermatophytosis (ring worm infection). The lesions are red, scaly and itchy. The groin and feet (tinea pedis) are common sites.

Cause Fungi thrive in moist, warm areas, such as locker rooms, tanning beds, swimming pools, and skin folds; accordingly, those that cause dermatophytosis may be spread by using exercise machines that have not been disinfected after use, or by sharing towels, clothing, or footwear, such as rental bowling shoes, ski boots, ice skates or roller skates.

Prevention

Advice often given includes:

- Avoid sharing clothing, sports equipment, towels, or sheets.
- Wash clothes in hot water with fungicidal soap after suspected exposure to ringworm.
- Avoid walking barefoot; instead wear appropriate protective shoes in locker rooms and sandals at the beach.
- Avoid touching pets with bald spots, as they are often carriers of the fungus

Treatment

Antifungal treatments include topical agents such as miconazole, terbinafine, clotrimazole, ketoconazole, or tolnaftate applied twice daily until symptoms resolve — usually within one or two weeks. Topical treatments should then be continued for a further 7 days after resolution of visible symptoms to prevent recurrence.

Malignant tumors of skin



Silent features of skin malignancies

- Most commonly epidermal origin
- Basal cell carcinoma
- Squamous cell carcinoma
- Malignant melanoma
- Skin adnexal tumors are rare.
- Chemical carcinogens play a major role.

Common malignant tumours of the skin are:

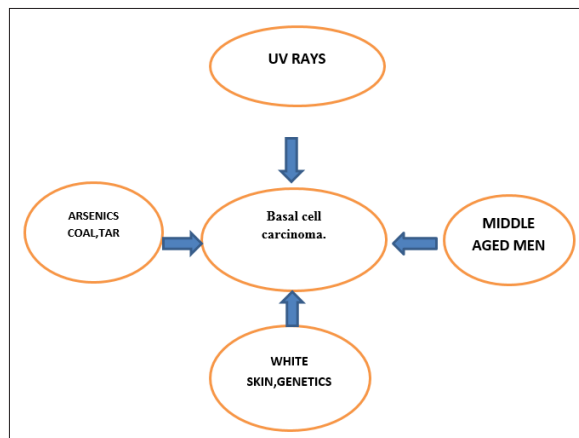
- **Basal cell carcinoma.**



- It is the commonest malignant tumor of skin. It is locally invasive but seldom metastasizes.
- It most commonly involves skin of face and head and neck area i.e. the most sun-exposed sites.
- It starts as small nodule which undergoes central ulceration

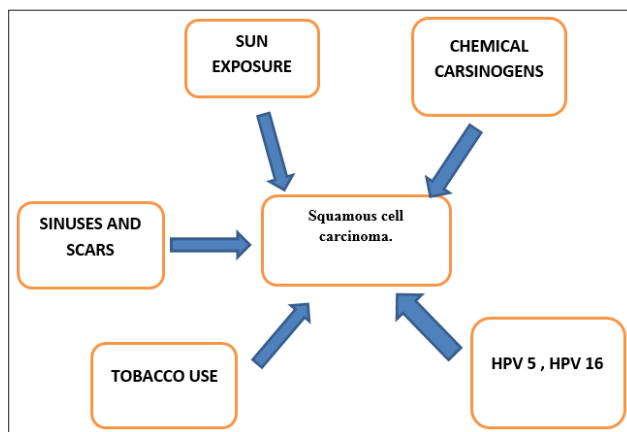
with pearly rolled margins.

- The tumor grows by burrowing and destroying the tissues locally like a rodent and hence the name rodent ulcer.
- 26 histological variants.
- Most common are:
 - Nodular
 - Superficial spreading
 - Infiltrative
 - Pigmented & Morpheaform



Predisposing Factors

- Squamous cell carcinoma
- It commonly arises from the mucocutaneous junctions in the body such as lid margin, lips, penis, etc.
- Its incidence is much less than the basal cell carcinoma.
- It commonly presents as an ulcerated growth with elevated and indurated margins.
- It metastasizes in the lymph nodes.
- 2nd most common tumor
- Cumulative sun exposure and damage
- Associated with pre-existing scars, osteomyelitis, and burn.



- Malignant melanoma.
- It is a rare tumor that may arise from a pre-existing naevus, or denovo from the melanocytes present in the skin.
- Wherever melanocytes exist
- Bowel mucosa
- Retina
- Leptomeninges

Types:

- Superficial spreading
- Nodular melanoma

- Lentigo maligna melanoma
- Acral lentiginous melanoma
- Amelanotic melanoma
- Desmoplastic melanoma

Clinically, it often appears as a flat or slightly elevated naevus which has variegated pigmentation and irregular borders . It may ulcerate and bleed

Metastasis. The tumor spreads locally as well as to distant sites by lymphatics and blood stream.

- **Sebaceous gland carcinoma.** It is a rare tumor arising from the sebaceous glands of skin . In the eyelids it arises from the meibomian glands (modified sebaceous glands).

Clinically it presents on a nodular swelling.

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