D. Other bacterial infections

1. Trichomycosis palmellina

It occurs most frequently in young patients with hyperhidrosis and poor hygiene. Bacteria in colloidal suspension, ranging from yellowish brown to white, attach in clusters to axillary or pubic hairs. The hairs appear to be yellowish and swollen. The condition may be accompanied by foul odor. The pathogenesis in most cases is infection caused by *Corynebacterium tenuis*, which fluoresces as yellow, white, or blue under Wood’s lamp. The treatments are hygiene improvement, antisepsis, shaving of hair, and topical tetracycline.

2. Erythrasma

**Clinical features**

Moist intertriginous regions such as the genitocrural region, axillary fossae and interdigital clefts are most commonly involved. Erythrasma presents as sharply margined, red or reddish-brown patches on whose surface thin and fine scales attach. Papules or blisters do not occur. The center of the lesion does not heal, whereby erythrasma can be distinguished from tinea. Erythrasma tends to be asymptomatic, and there may be itching and burning in rare cases.

**Pathogenesis**

Erythrasma is caused by infection in the horny cell layer by *Corynebacteria* called diphteroids. It often occurs in patients with diabetes, obesity or hyperhidrosis. It is thought to be an opportunistic infection.

**Diagnosis, Examination**

It is difficult to differentiate erythrasma in the toe clefts from tinea pedis; however, coral-red fluorescence of erythrasma observed under Wood’s lamp is diagnostic. Since erythrasma and tinea pedis are present together in many cases, mycological examination of scales is necessary. Gram-positive short bacilli are observed in the scales of the lesion.

**Treatment**

Topical imidazole antifungal agents and oral erythromycin are effective.
Actinomycosis is classified by the primary site into cervicofacial actinomycosis, thoracic actinomycosis and abdominal actinomycosis. Of these three subtypes, cervicofacial actinomycosis, which is often induced by dental caries and accompanied by skin lesions, accounts for about half of all actinomycosis cases. Thoracic actinomycosis and abdominal actinomycosis are accompanied by a lesion in the internal organs; unless there is a fistula that affects the skin, these two subtypes are not addressed in dermatology.

Reddening, swelling and induration occur, forming a dark red subcutaneous nodule (Fig. 24.19). The nodule partly softens and forms an abscess, leading to a fistula from which pus excretes for a long period of time. A chronic suppurative granulomatous lesion is produced. Mild fever and pain are present in most cases. Actinomycosis is nearly asymptomatic; however, there is difficulty opening the mouth when the masticatory muscle is involved.

Pathogenesis

Actinomyces israelii, a microbe resident in the human oral cavity, tonsillar fossae and dental plaques, invades the body from a minor injury, proliferates and forms a lesion. Once believed to be a fungus, Actinomyces israelii has been found to be a bacterium.

Pathology

Microabscess forms in parts of fibrotic inflammatory granulomatous tissue. Actinomycosis is characterized by bacterial mass in the microabscess called “sulfur granule” (Fig. 24.20).

Differential diagnosis

Nocardia infection causes lesions similar to those of actinomycosis. External dental fistula and inflammatory epidermal cyst should be differentiated from actinomycosis.

Treatment

Penicillin, tetracycline and cefem antibiotics are administered orally.

4. External dental fistula

As a result of progression of dental caries or alveolar osteitis, a fistula forms from which pus is excreted (Fig. 24.21). Dental treatment is necessary. It may be misdiagnosed as subcutaneous ulcers such as epidermal cyst or actinomycosis.
Skin lesions caused by nocardiosis are divided by morphology into three subtypes: nocardia mycetoma, which progresses in a process very similar to that of actinomycosis; localized cutaneous nocardiosis, in which subcutaneous abscess forms; and cutaneous lymphatic nocardiosis, in which the lesion enlarges on skin over the lymph vessels. This section focuses on nocardia mycetoma.

The legs are most frequently involved. Dark red subcutaneous nodules appear after multiple reddening, swelling and induration. The nodules form abscesses where fistulae are produced, excreting pus for a long period of time. Some of the pus may be granular. Opportunistic infectious nocardiosis invades the lung and progresses in a course similar to that of bacterial pneumonia. A skin lesion and a cerebral abscess occur in cases with hematogeneous dissemination.

Pathogenesis

Nocardiosis is infection by the anaerobic bacteria of the genus Nocardia. In developing countries, Nocardia in the soil causes skin lesions. The bacteria may invade the lung and cause an opportunistic infection and systemic nocardiosis. Nocardia asteroides is the causative species in most cases.

Laboratory findings, Diagnosis

Pus or sputum smears are examined after Gram staining. Cultures are obtained on Sabouraud glucose medium. Or Nocardia are identified by skin biopsy. Infiltration of Nocardia into bone is investigated by bone X-ray. Drugs for treatment are chosen by measuring MIC.

Treatment

The most effective drug for each case is chosen from among sulfate drugs, minocycline, or penicillin. The treatment is continued for several months. For cases in which all drugs are ineffective or bone is involved, surgical removal is performed.