usually more than 5 cm in diameter and accompanied by poikiloderma. Some but not all patients may develop mycosis fungoides (Fig. 22.35). Careful check up of the disease course is necessary. PUVA therapy is effective.

4. Pityriasis lichenoides

This disorder is difficult to classify. This entity is sometimes regarded as cutaneous vasculitis, rather than as a keratotic disorder. Pityriasis lichenoides tends to be limited to the trunk, thighs and upper arms. It rarely occurs on the face, palms or soles. The eruption progresses slowly over the course of many years. Adult men are most commonly affected. Erythema or rose pink papules of several millimeters to 1 cm in diameter, to which white scales are attached, appear. The eruptions are continuously produced, and a distinguishing characteristic of the disorder is the presence of new eruptions together with older ones (Figs. 15.29-1 and 15.29-2). It is asymptomatic. It heals with pigmentation or depigmentation. Pityriasis lichenoides is divided into two main forms, Pityriasis lichenoides chronica (PLC) and Pityriasis lichenoides et varioliformis acuta (PLEVA), but intermediate forms or patients with both forms are often seen.

1. Pityriasis lichenoides chronica (PLC)
   Synonym: guttate parapsoriasis
   This is a chronic form. This individual eruption is a rose pink plaque. Young adults are usually affected.

### Table 15.8 Classification and features of parapsoriasis.

<table>
<thead>
<tr>
<th>Parapsoriasis en plaque and pityriasis lichenoides</th>
<th>Clinical findings</th>
<th>Pathological findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clinical findings</strong></td>
<td>Pityroïd scales and erythema appear. Itching is not present.</td>
<td></td>
</tr>
<tr>
<td><strong>Pathological findings</strong></td>
<td>Lymphocytic infiltration in the dermo-dermal junctions</td>
<td></td>
</tr>
<tr>
<td><strong>Large-plaque parapsoriasis</strong></td>
<td>The eruption is 5 cm or more in diameter, accompanied by atrophy, and may be a precursor of mycosis fungoides in some cases.</td>
<td></td>
</tr>
<tr>
<td><strong>Small-plaque parapsoriasis</strong></td>
<td>The eruption is less than 5 cm in diameter.</td>
<td></td>
</tr>
<tr>
<td><strong>Pityriasis lichenoides</strong> (guttate parapsoriasis)</td>
<td>Clinical findings</td>
<td>Pathological findings</td>
</tr>
<tr>
<td><strong>Clinical findings</strong></td>
<td>Fine white scales, erythema of 1 cm or less in diameter, polymorphic skin lesion with old and new eruptions</td>
<td></td>
</tr>
<tr>
<td><strong>Pathological findings</strong></td>
<td>Lymphocytic infiltration to the epidermis</td>
<td></td>
</tr>
<tr>
<td><strong>Pityriasis lichenoides chronica (PLC)</strong></td>
<td>The main symptom is erythematos plaque.</td>
<td></td>
</tr>
<tr>
<td><strong>Pityriasis lichenoides et varioliformis acuta (PLEVA)</strong></td>
<td>The main symptoms are severe inflammatory symptoms and ulceration.</td>
<td></td>
</tr>
</tbody>
</table>
Pityriasis lichenoides et varioliformis acuta (PLEVA)

Synonym: Mucha-Habermann disease

This is more acute form and less common. Intense acute inflammatory symptoms are present. Multiple papules are accompanied by ulceration. Some patients with lymphomatoid papulosis show similar clinical appearance to PLEVA (Figs. 15.30 and 15.31).

5. Lichen planus

Outline

- Flat-topped, elevated, grayish-blue to purplish-rose plaques form on the flexures of the extremities and in the oral cavity. It progresses slowly.
- It is often induced by drugs. However, the cause is heterogeneous.
- Köbner phenomenon is positive. Delicate white lines known as Wickham striae are seen on the surface.
- Vacuolar degeneration is pathologically found. Band-like infiltration of lymphocytes occurs in the superficial dermis.
- Use of the causative drug is discontinued. Steroid ointments and tacrolimus ointments are useful.

Clinical features

Lichen planus occurs in male and female adults. Polygonal or map-like, grayish-blue to purplish-red papules or flatly elevated, purplish-red erythema of coin size or smaller appear, often with central concavity. The erythema surface is either characteristically glossy, or it has thick whitish scales attached. The eruptions may coalesce to form plaques (Figs. 15.32-1 and 15.32-2). The flexures of the extremities, and the trunk and genitalia are the most frequently affected sites, with itching in some cases. In the oral mucosa, irregularly shaped infiltrative leukoderma, Wickham striae, or erosive plaques are found. Intense pain may be present in such cases. Deformity and thinning of nails are seen in about 10% of all cases (Fig. 15.33).

Pathogenesis

Lichen planus is induced by drugs in many cases. When the cause is not identified, the disorder is classified as idiopathic. Inflammation caused by CD4+ T cells in the dermo-epidermal junctions leads to dyskeratosis accompanied by impairment of basal keratinocytes, resulting in formation of flatly elevated purplish-rose erythema or papules. It may be caused by drugs (antihypertensive agents such as thiazide, cerebral excitometabolic agents, antitubercular agents) or by chemicals (photographic developing solution, dental metals). Association with hepatitis C and bone marrow transplantation (MEMO) has been suggested.
**Pathology**

The pathological findings are hyperkeratosis that is not accompanied by parakeratosis, and thickening of the granular layer, serrated extension of epidermal rete ridges, Vacuolar degeneration of the basal layer, and band-like lymphocytic infiltration in the papillae and lower papillary layer (Fig. 15.34). Dyskeratotic keratinocytes that have undergone vacuolar degeneration are called Civatte bodies.

**Laboratory findings, Diagnosis**

Köbner phenomenon is present (i.e., rubbing normal skin or exposing it to UVB produces lichen planus eruptions). Delicate white lines known as Wickham striae typically cross the slightly scaly surface and form a network on the coalesced plaques. Lichen planus is easily diagnosed by the clinical and pathological findings. History-taking on drugs and dental treatments is conducted to determine whether lichen planus is induced by drugs or dental metal. A drug-induced test may be performed when a drug

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**Fig. 15.32-1  Lichen planus.**

a: A typical case.

**Fig. 15.32-2  Clinical features of lichen planus.**

b, c: Lichen planus annularis. It is important to differentiate this from porokeratosis. Erythema at the periphery of the lesion is characteristic of lichen planus. d: Lichen planus pigmentosus. e: A typical case of lichen planus on the lower leg. f: It is necessary to differentiate this from lichen sclerosus et atrophicus. g: Multiple lichen planus on the foreskin and glans penis. h, i: Affected lips. j: Linear, white lichen planus near the molar teeth in the buccal mucous membrane. k: Typical lichen planus on the wrist.
Lichen planus is suspected of being the cause. It takes several days to induce an eruption.

**Treatment**

Lichen planus progresses chronically but responds to treatment in most cases. The causative drug or other agent is determined and its use is discontinued. It takes several weeks or drug-induced eruptions to disappear after such discontinuation of use. Steroid ointments (ODT) and anti-histamines are applied. Tacrolimus ointments are effective against lichen planus in the mucous membranes.

**Clinical features, Pathogenesis**

Eruptions arrange in linear arrays or along cleavage lines, most frequently on the extremities (Fig. 15.35). The condition is asymptomatic. Lichen striatus begins as several solitary, polygonal to round, sometimes scaly, light pink to dark rose papules of 2 mm to 4 mm in diameter. The papules tend to coalesce and become 1- to 2-cm-wide, linear or band-like, light pink to dark red eruptions. The etiology is unknown.

**Differential diagnosis**

Lichen striatus should be differentiated from inflammatory linear epidermal nevus, incontinentia pigmenti (second-stage), linear warts and lichen planus.

**Treatment, Prognosis**

Topical steroids are the main treatment. Lichen striatus heals spontaneously in most cases, particularly in infants.
7. Lichen nitidus

Clinical features, Pathogenesis
Small papules of uniform size, with a smooth flat glossy surface and a diameter of 1 mm to 2 mm occur. They can be scattered or aggregated (Fig. 15.36). The eruptions do not coalesce or cause erythema; they are normal skin color to yellowish white. Subjective symptoms such as itching are not present. Lichen nitidus most commonly occurs in the genitalia and extremities of young men, especially the glans penis and penis shaft. Köbner phenomenon is observed in about 50% of all cases.

Pathology
Directly under the epidermal rete ridges that slightly extend from small papules, there are epithelioid cells, lymphocytes, and a small spherical infiltrative nest consisting of Langerhans giant cells. Vacuolar degeneration is seen.

Prognosis
Lichen nitidus progresses slowly in cycle of several months. Most cases heal spontaneously.

8. Pityriasis rosea (Gibert)

Outline
- It is transitory, inflammatory keratotic erythema of unknown etiology. It most commonly occurs in young men.
- Oval eruptions scatter mainly on the trunk, presenting as erythematous plaques with peripheral collarettes of scales. The long axes of eruptions run parallel to the cleavage lines.
- The first eruption is called a herald patch.
- It heals spontaneously in 1 to 3 months. Topical steroids are the first-line treatment.

Clinical features
Pityriasis rosea occurs frequently in men and women from the ages of about 10 to 40, especially in spring and autumn. Two thirds of all cases begin as an eruption called a herald patch (Fig. 15.37). An oval erythematous scaling plaque with a diameter of 2 cm to 5 cm occurs on the trunk. The light pink plaque is accompanied by scaling at the rim and slightly yellowish central discoloration (collarette of the herald patch). Seven to ten days after onset, multiple oval erythema of 1 cm to 2 cm in diameter with peripheral scaling occur suddenly. These eruptions vary in size, and the long axes run along the Langer cleavage lines of the skin; a Christmas-tree appearance is seen on the back. The eruptions spread from the trunk to distal areas; however, the palms, soles,
and head (sun-exposed areas) are not involved. There are no severe systemic symptoms, except mild itching sometimes. The condition usually heals naturally in 1 to 3 months and does not recur.

**Pathogenesis**

The cause is unknown. In recent years, association with viral infections including HHV-6 and HHV-7 has been pointed out. Pityriasis rosea may occur as a drug eruption.

**Pathology**

Thickening of the epidermis, spongiosis, parakeratosis, and intraepidermal filtration of mononuclear cells are found. These findings are similar to those of eczema and are nonspecific.

**Differential diagnosis**

Pityriasis rosea should be differentiated from the diseases listed in Table 15.9.

**Treatment**

Topical steroids and oral histamines are the main treatments. Petrolatum, UVB and anti-inflammatory analgesics are also useful. Since these drugs may induce eruptions, history-taking is important.

### 9. Acquired ichthyosis

- It occurs secondarily to a malignant disorder (e.g., lymphoma), sarcoidosis or drug eruption.
- The skin clinical features similar to that of hereditary ichthyosis; however, both the extensor surfaces and flexures of joints are affected.

#### Outline

- It occurs secondarily to a malignant disorder (e.g., lymphoma), sarcoidosis or drug eruption.
- The skin clinical features similar to that of hereditary ichthyosis; however, both the extensor surfaces and flexures of joints are affected.

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**Table 15.9 Diseases that are differentiated from pityriasis rosea.**

<table>
<thead>
<tr>
<th>Disease</th>
<th>Differential points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pityriasis versicolor</td>
<td>Flushing does not occur. Malasezia furfur is detected.</td>
</tr>
<tr>
<td>Seborrheic dermatitis</td>
<td>Seborrheic areas such as the head and face are most commonly involved.</td>
</tr>
<tr>
<td>Roseola syphilitica</td>
<td>Fewer scales are present. Eruptions also appear on the palms and soles. Serologic test for syphilis is positive.</td>
</tr>
<tr>
<td>Psoriasis</td>
<td>Silver-gray scales are present. Auspitz phenomenon and Köbner phenomenon are positive.</td>
</tr>
<tr>
<td>Drug eruption</td>
<td>History-taking on drugs</td>
</tr>
</tbody>
</table>
Various symptoms of ichthyosis are present. Both the extensor surfaces and flexures of the extremities are affected (Fig. 15.38).

Patients have the primary diseases listed below. The symptoms of ichthyosis appear thereafter.

(i) malignant tumor (e.g., malignant lymphoma (Hodgkin’s disease in particular), leukemia, carcinoma, Kaposi’s sarcoma).
(ii) systemic disease (e.g., sarcoidosis, hypothyroidism, Hansen’s disease, tuberculosis, systemic lupus erythematosus)
(iii) drug eruption (e.g., from nicotinic acid)

The pathology of acquired ichthyosis is similar to that of ichthyosis vulgaris.

Acquired ichthyosis cannot be distinguished from ichthyosis vulgaris only by cutaneous symptoms and histopathology. The clinical course and detection of a malignant tumor are important for diagnosis.

**b. Noninflammatory keratoses**

**1. Clavus**

**Clinical features, Pathogenesis**

Clavus, commonly called a “corn,” is localized thickening of the horny cell layer, usually caused by mechanical stimulation (Fig. 15.39). It tends to occur in the feet from the friction of shoes. The center of the thickened horny cell layer sinks deep into the dermis (core), resembling the eye of a chicken or fish. Tenderness is present (Fig. 15.40).

**Differential diagnosis**

Clavus is distinguished from plantar warts, which are caused by human papilloma virus and tend to occur multiply. Plantar warts also occur in areas that are not subjected to friction, and minor bleeding may be seen; differentiation between plantar warts and clavus is easy by scraping the horny cell layer with a razor blade. In clavus, pressure causes pain (tenderness). In plantar wart, pinching causes pain.

**Treatment**

Friction should be avoided. Cushioned footpads are helpful. The horny cell layer is removed, and salicylic acid is applied.