Clinical Differential Diagnosis of Cutaneous Lupus Erythematosus

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The cutaneous manifestations of lupus erythematosus (LE) are notoriously diverse and may mimic a broad range of unrelated skin disorders, although many of its skin symptoms are straightforward and pose few diagnostic problems. Clinical differential diagnosis has a place in directing the dermatologist toward the correct diagnosis in the primary screening process. This chapter summarizes the diagnostic considerations at this point, before additional diagnostic procedures are carried out. Of course, a definite diagnosis of LE must be based on the whole of the clinical appearance, history, and the histopathologic, immunofluorescent, laboratory, and, occasionally, phototesting findings (see the respective sections of this book). Obviously, no reference to these investigational procedures are made in this chapter.

The main building blocks that make up the cutaneous lesions of LE are the classic triad of erythema, scaling, and atrophy. The relative weight of these elements, however, is subject to variation according to the type of LE (chronic cutaneous, subacute cutaneous, and systemic), the age and location of the lesions, and the presence of additional morphologic features (e. g., hypertrophy, adipose tissue involvement, and mucopolysaccharide accumulation). Erythema, epidermal thickening and scaling, and atrophy and scarring represent a clinical and dynamic continuum along which all lesions of cutaneous LE (CLE) develop; only the chronic discoid type, however, may go all the way, whereas the other types hold in earlier stages. For this reason, there is a considerable morphological overlap between all types of CLE, and many differential diagnostic considerations pertain to more than one or all types of LE, as will be seen below.

According to an old saying, LE and syphilis are the "great imitators" among the skin diseases. We tried to list only reasonable and practically useful differential diagnoses and may have missed a few less appropriate ones. It must also be borne in mind that erythema, scaling, and atrophy are fairly common cutaneous features. Single LE lesions, particularly fresh ones, may thus be totally indistinguishable from single lesions of a score of other dermatoses; only in the frame of the clinical appearance as a whole does the diagnosis appear obvious and unmistakable. We tried to satisfy both aspects in this chapter.

As the structural framework for differential diagnoses, we used the accepted classification of LE as laid down in the textbooks of dermatology (Braun-Falco et al. 1997, Champion et al. 1998, Fitzpatrick et al. 1999, Fritsch 1998).

Discoid Lupus Erythematosus

Classic Appearance

Discoid LE (DLE) (Kaposi 1872) is the most common variant of CLE. It typically (but not exclusively) evolves at light-exposed skin: face, ears, extensor aspects of the forearms, scalp, trunk, and, more rarely, the oral mucosa. Lesions are single or sparse in most cases; if numerous disseminated lesions are present, they are haphazardly distributed at the predilection sites without striking symmetry. Among multiple lesions, many are found in the butterfly area (see later herein), and some tend to appear in unusual places, for example, the "niches" of the external ear, the eyelids, the lips, or the vestible of the nose; there is a tendency not to transgress natural border lines, for example, the vermilion border of the lip or the areola mammae.

Lesions evolve according to a characteristic time course. Fresh lesions first present as small, round, well-defined, slightly raised erythemas with dull surfaces that soon become rough to the touch and scaly. Scales are adherent and are often attached to the hair follicles ("carpet tack" phenomenon). Follicular orifices are first widened with keratotic plugs and may then disappear completely; there is a gradual loss of hair in the lesions, leading to irreversible scarring alopecia. Lesions spread slowly and regress at the centers, which become smooth and sunken. Intermediate lesions become elevated and indurated at variable degrees and develop atrophy and loss of normal skin texture in their centers. At the periphery, rests of the active lesion remain as ring-like, arcuate, or polycyclic scaly erythemas that continue to spread. Old (burnt-out) lesions may be disfiguring: they are large, with irregular borders, sharply demarcated, depigmented (porcelain white in dark skin), hairless, flat, thin, and with a scarring appearance. Pitted scars and crateriform indentations may occur. In acral location (e. g., nose and ears), there may be a loss of tissue (mutilation).

It is important to note that the lesions differ in their individual ages; fresh lesions will thus be seen alongside intermediate and burnt-out ones. Activity of lesions may spontaneously cease at all stages; fresh lesions may heal with restitutio ad integrum, older ones result in atrophy.

Differential Diagnosis

Fresh Discoid Lupus Erythematosus Lesions

Before central atrophy develops, fresh lesions present as homogenous scaly erythemas. As such, they may resemble a wide spectrum of unrelated disorders.

Actinic keratoses (Fig. 11.1A), as individual lesions, may mimic DLE, especially if flat and inflamed; as a distinguishing mark, they are rougher than DLE lesions and hyperkeratotic rather than scaly (keratotic masses do not detach). At the clinical overview, however, actinic keratoses differ from DLE lesions by their usually smaller size, greater number, and more regular distribution owing to their tendency to concentrate at the sites of the highest cumulative UV damage (forehead, nose, bald head, etc). In addition, patients with actinic keratoses are usually much older than those with DLE (25–45 years), and their facial skin shows signs of chronic actinic damage.

Bowen's disease (Fig. 11.1B) is most often a solitary lesion that may be located anywhere on the body, including light-exposed areas. It may look similar to a DLE lesion;

it is less inflamed, however, and its surface is velvety and occasionally hyperkeratotic. There is no scaling.

In *psoriasis vulgaris,* again, individual psoriatic plaques may be similar to DLE, especially fresh lesions and those of the photosensitive type. Psoriatic plaques are round and well demarcated; their scales, however, are large, silvery, and easily detachable. They do not lead to hair loss or epidermal atrophy. At the clinical overview, psoriasis differs from DLE by its exanthematic distribution and its totally different predilection sites. Also, psoriatic plaques of the face are rare. As antimalarials can aggravate psoriasis, psoriasis should be ruled out before treatment of DLE is started.

Again, individual patches of *seborrheic dermatitis* may resemble fresh DLE lesion because they are well-demarcated, scaly erythemas most often on the face. They differ, however, by their color (light yellow–red) and the type of scaling (small, branny, easily detachable, greasy). At the clinical overview, seborrheic dermatitis is strikingly symmetrical (lesions on and bordering the eyebrows, glabella, nasolabial folds, and V-shaped areas of the chest and the back). Also, it is usually accompanied by seborrheic dermatitis of the scalp. History usually reveals that the condition is chronic, with exacerbations in winter and improvement in the warm season. Importantly, sun exposure can aggravate seborrheic dermatitis, as is also the case in DLE.

Discoid Lupus Erythematosus Lesions of Intermediate Age

At this stage, central atrophy becomes apparent, and active sectors of the lesion appear as annular or semicircular peripheral erythemas (Fig. 11.1C). *DLE lesions of the scalp* usually belong to this category (see below).

Superficial dermatophytic infections typically present as nummular lesions with raised erythematous, scaly borders and central clearing. Annular and semicircular lesions are often found. In contrast to DLE, there is no atrophy. In adults, superficial mycoses are mainly found in the context of tinea pedis and in the inguinal folds and only exceptionally on the trunk or face. Children are much more prone to develop superficial mycoses of the face, but they only rarely develop DLE. Potassium hydroxide examination of scales will quickly reveal the etiology.

Erythema arcuatum, the superficial variant of granuloma annulare, is characterized by stable, erythematous, slightly infiltrated annular lesions predominantly of the upper trunk. In contrast to DLE, the lesions are quite large, the erythematous rings display no scaling, and the centers are nonatrophic.

Erythema annulare centrifugum lesions may be somewhat reminiscent of DLE but they are predominantly located at the trunk and do not exhibit central atrophy, and their elevated borders typically show collerette-like scaling that is nonadherent and localized to the interior slope of the margin. Also, erythema annulare is not stable but is characterized by slow migration.

Superficial basal cell carcinoma may occasionally somewhat resemble DLE. It is usually located on the trunk, may display an atrophic center, and is reddish owing to the presence of telangiectasias. In contrast to DLE lesions, it is not too well defined and has a raised border of translucent peripheral papules (which may be not very conspicuous). Scaling, if present, is scant.

Old (burnt-out) Lesions of Discoid Lupus Erythematosus

Long lasting DLE lesions are dominated by atrophy, scarring, and depigmentation.

Atrophic scars may be indistinguishable from burnt-out DLE, lacking any signs of inflammation, particularly depigmented scars after superficial third-degree burns. Atrophic acne scars differ by their multiplicity and characteristic distribution. They are not accompanied by pigmentary changes in white skin. The characteristically depressed scars after cutaneous leishmaniosis, in contrast, are hyperpigmented. In all instances, the borders of the scars must be carefully inspected to detect residual rims of scaling erythemas, which would be a clue for DLE.

Lesions of vitiligo may closely resemble burnt-out DLE, with regular and only mildly altered surface texture because of its round shape and circular outlines. Lesions must be carefully examined for minimal signs of scarring. At the clinical overview, vitiligo is characterized by its larger lesions and its predilection for periorificial location.

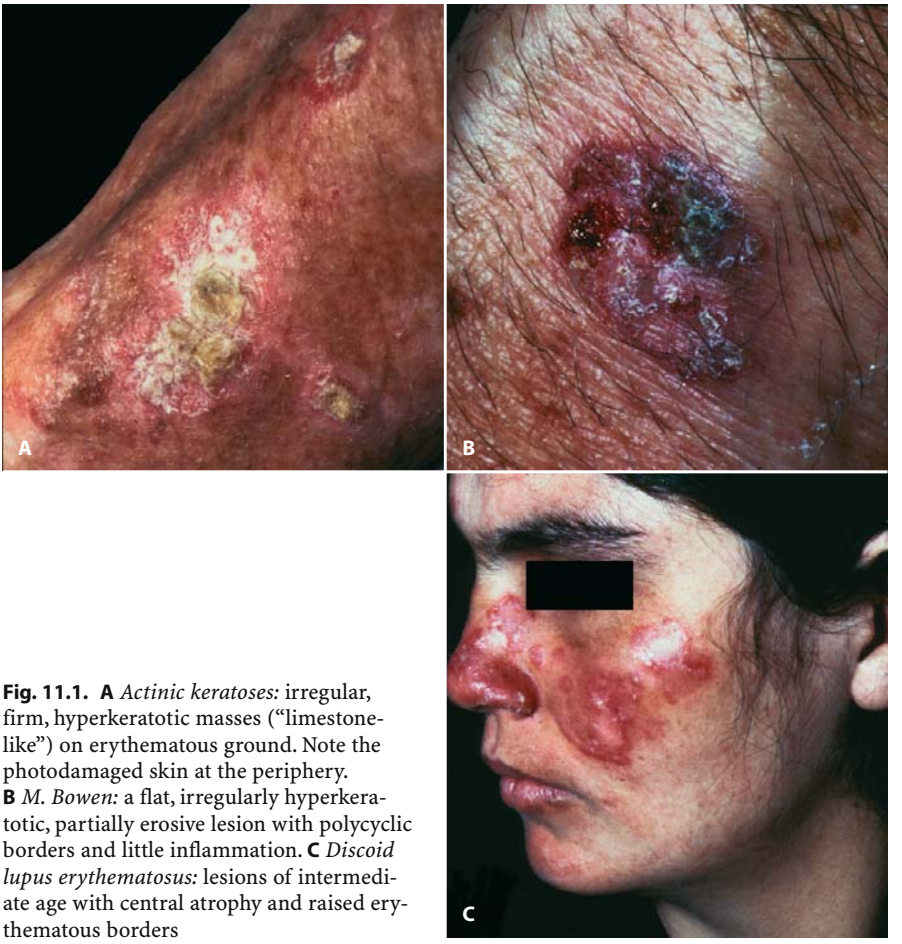

Fig. 11.1. **A** *Actinic keratoses:* irregular, firm, hyperkeratotic masses ("limestone-like") on erythematous ground. Note the photodamaged skin at the periphery. **B** *M. Bowen:* a flat, irregularly hyperkeratotic, partially erosive lesion with polycyclic borders and little inflammation. **C** *Discoid lupus erythematosus:* lesions of intermediate age with central atrophy and raised erythematous borders

Hypopigmented lesions of tuberculous leprosy differ by their ill-defined borders; the presence of residual pigmentation, scaling, and faint erythema; and loss of sensory function.

Lupus vulgaris in advanced stages may show similarity with scarring lesions of DLE. Whereas fresh lesions of lupus vulgaris are characterized by reddish brown macules and patches of soft and friable consistency that display a typical "apple-jelly" color on diascopy, more advanced lesions may exhibit considerable atrophy and scarring. As a distinguishing mark, remnants of tuberculous granulation tissue are often found at the periphery and in the centers; if probed, the instrument tends to break through the overlying skin. Moreover, lupus vulgaris has a tendency to ulcerate, which is very uncommon in DLE, and depigmentation is absent. A common feature of lupus vulgaris and DLE is mutilation of acral sites, for example, ear lobes or nose, which was the historical reason to apply the term "lupus" to both.

Coral reef keratoakanthomas may imitate old DLE lesions, with pronounced scarring and irregular, "moth-eaten" change of the surface texture. These low-grade malignancies are characterized by their large and round size, their location in sun-exposed skin areas, and their elevated borders. In their early stage, they display multiple keratotic plugs that are larger than the follicular plugs of DLE.

Differential Diagnosis at Particular Sites

Discoid Lupus Erythematosus of the Scalp

DLE of the scalp (Fig. 11.2A) typically arises as one or a few roundish erythematous plaques identical to DLE lesions elsewhere on the skin. When atrophy develops, they gradually transform into patches of scarring alopecia that may be surrounded by rims of scaly erythema. In the early phase, it must be distinguished from psoriasis and seborrheic dermatitis (see previously herein). In advanced stages, DLE may

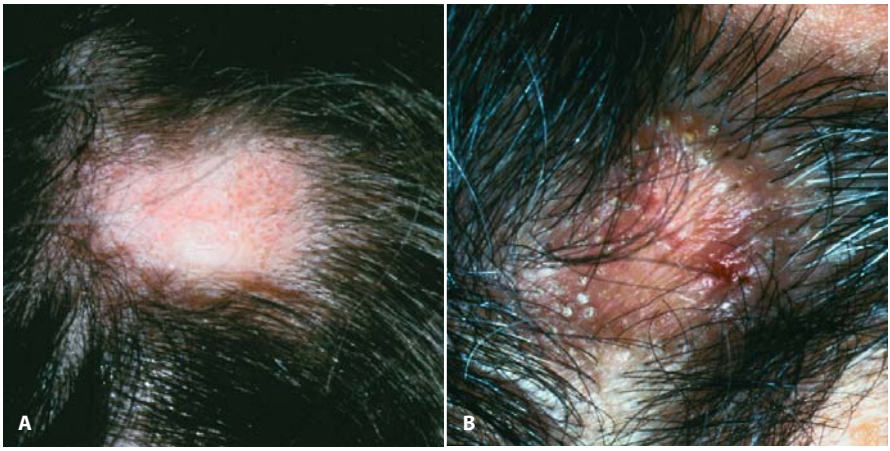

Fig. 11.2. **A** Atrophic alopecia in *discoid lupus erythematosus*. Note the widened erythematous follicular openings between flattened atrophic areas. **B** *Lichen ruber planopilaris*: confluent small areas of atrophic skin with interspersed unaffected hair-bearing follicles

resemble all other instances of scarring alopecia. One important mark is that DLE of the scalp is often accompanied by analogous lesions of the face.

Lichen planopilaris (Fig. 11.2B) of the scalp is characterized by very small (2–3 mm) hairless atrophic areas that, by partial confluence, may occupy larger areas, particularly in the central scalp regions, a distribution pattern reminiscent of lichen planus lesions of the skin. The atrophic areas are smooth, devoid of follicular orifices, and skin colored (because the inflammatory infiltrate is not located at the interfollicular epidermis but around the hair follicles) but may display a subtle violaceous hue at the periphery. Characteristically, tufts of normal hairs emerge from between the alopecic areas, resulting in an irregular, "moth-eaten" appearance.

Linear morphea (coup de sabre) is an easy clinical diagnosis. It is characterized by a single linear paramedian band of depressed sclerodermatous skin that adheres to the deep fascia and even the bone. Erythema and scaling is usually absent, and hair loss develops as a late event.

Folliculitis decalvans, which in its active stages can hardly be confused with DLE because of its pustules and crusts, eventually leads to cicatricial alopecia, which is morphologically similar to that of lichen planopilaris (small areas of alopecia intermingled with tufts of normal hair, most often in the parietal and occipital areas). Similar hairless scars, although less extensive, may arise from furuncles and *trichophytic infections* (*Kerion Celsi* type).

Noninflammatory and *epidemic types of tinea capitis* (*microsporia*) begin with small erythemas or erythematous papules around hair follicles that subsequently spread centrifugally like DLE lesions of the scalp. In contrast to DLE, these lesions tend to be multiple, show little inflammation at early stages, and occur almost exclusively in children. Typically, hairs do not fall out but break close to the skin surface, and residual scarring is minimal. In contrast, scarring is pronounced in the favus type of tinea capitis. This rare type of mycosis can be distinguished from DLE by its typical focal crusting and scaling ("scutula").

Discoid Lupus Erythematosus of the Oral Mucosa

DLE of the oral mucosa is not an infrequent finding. It begins as one or a few round, well-demarcated erythematous plaques with patchy and streaky white hyperkeratosis, most often of the buccal mucosa, the (lower) lips, and the hard palate, that often turn into erosions and even ulcers. Lesions tend to be symptomless. Involvement of the conjunctival mucosa occurs much less often and may lead to ectropium and scarring (differential diagnoses: *cicatricial pemphigoid, chlamydial conjunctivitis, and basal cell carcinoma*).

Lichen planus is set apart from mucosal DLE by its greater extent, its symmetrical distribution, and its (at least in part) reticulated appearance. Patients with mucosal lichen planus commonly exhibit lichen planus of the skin as well. *Erosive lichen planus* is usually accompanied by lesions of classic oral lichen planus. Erosions are often extensive, superficial, covered with fibrin, with irregular outlines, and painful. The sites most often involved are the buccal mucosa, the lateral aspects of the tongue, and the lip mucosa.

Plane leukoplakias are hyperkeratotic plaques of the mucosa, with regular outlines and a tylotic appearance, that are most often caused by chronic frictional trauma. The cause of the lesion is usually obvious, for example, ill-fitting dentures. Plane leuko-

plakias are not or are only minimally inflamed. *Premalignant leukoplakias* have an irregular outline and an irregular, at times verrucous, surface; they progress to squamous cell carcinomas, which may first appear as irregular red erosions (often localized to the floor of the oral cavity).

Recurrent aphthous ulcers of the oral mucosa have a typical morphology: they represent most often small, round, and multiple ulcers covered by a white slough of fibrin and debris, usually bounded by an erythematous rim. Clinical differential diagnosis of a single lesion from DLE may be difficult, but the history of frequent recurrences, painfulness, and spontaneous clearing within days facilitate the diagnosis.

Discoid Lupus Erythematosus of the Palms and Soles

DLE of the palms and soles is a rare occurrence characterized by sharply demarcated erythemas and adherent scaling; the lesions tend to be painful and may become erosive. Atrophy and scarring are the features that allow a distinction from the following:

Palmoplantar psoriasis has no signs of atrophy. Note that palmoplantar psoriasis is only rarely an isolated finding.

Keratoderma blennorhagicum in patients with Reiter's disease presents with psoriasiform palmoplantar lesions composed of erythemas, erosions, crusting, and hyperkeratosis. In contrast to DLE, hyperkeratosis and inflammation may be marked and extend over the whole surface of the palms and soles.

Porokeratosis plantaris and palmaris may be similar to palmoplantar DLE because it presents as relatively small, multiple, sharply demarcated annular lesions with a hyperkeratotic peripheral ridge (cornoid lamella) and central atrophy. Palmoplantar porokeratosis is transmitted as an autosomal-dominant trait.

Special Manifestations

Hypertrophic Discoid Lupus Erythematosus

Hypertrophic DLE usually presents as a solitary, raised, indurated, hyperkeratotic lesion, most often of the face or the extensor surfaces of the extremities. It is not a very characteristic type of lesion, and the diagnosis is often made histologically. Clinical differential diagnoses include hypertrophic lichen planus (usually multiple lesions, location on the extremities, often accompanied by classic lichen planus, extremely itchy), hypertrophic psoriasis (usually exanthematic), nodular prurigo (which is also intensively pruritic), with multiple lesions in a characteristic distribution (trunk and shoulders; only those regions are involved that can be reached by the scratching finger). Particularly in elderly people, squamous cell carcinoma and keratoacanthoma must be considered.

Lupus Erythematosus Profundus

LE profundus (LEP) is an inflammatory condition involving the subcutaneous adipose tissue (lupus panniculitis) and presenting with deep cutaneous and subcutaneous nodules (Kaposi 1883, Irgang 1940). Lesions are usually multiple and symmetrically distributed on the upper arms and face. Lupus panniculitis may arise in association with both DLE and SLE. In the first, lesions tend to be few in number, noninflammatory, firm, attached to the skin, and not painful; they resolve by forming deeply indented atrophic scars, calcification, and lipoatrophy. The epidermis above

these lesions may be normal or show DLE lesions (Kaposi-Irgang type of LE profundus). If associated with SLE, panniculitis lesions are more numerous, inflamed, and tender; there are systemic symptoms; and the lesions are clinically indistinguishable from other instances of *lobular panniculitis* (*idiopathic lobular panniculitis, pancreatic panniculitis, panniculitis of alpha1 antitrypsin deficiency*); they end up in similar deeply indented lipoatrophic scars.

Firm, deep-seated nodules of LEP must be distinguished from benign subcutaneous tumors such as *schwannoma* and *pilomatrixoma* (calcifying epithelioma of Malherbe). Both usually occur in childhood and as solitary lesions (ultrasound investigation allows differentiation of these and LEP). *Insulin- or corticosteroid-induced fat atrophy* may resemble burnt-out LE profundus (history).

Lupus Erythematosus Tumidus

LE tumidus (LET) is a probably not so infrequent variety of CLE that is defined histopathologically by LE-type dermal inflammation, accumulation of mucin, and the absence of epidermal involvement (Kuhn et al. 2003). Clinically, it corresponds to erythematous discoid lesions most often of the face (zygomatic area) that are persistent and without a tendency for atrophy and scarring (Kuhn et al. 2000). Lymphocytic infiltration Jessner-Kanof is defined practically in the same way (Jessner and Kanof, 1953), and many authors argue that these conditions are identical (Ackerman 1997, Weber et al. 2001). Phototesting revealed a high incidence of photosensitivity with a distinct time course profile that was common to both conditions but different from polymorphous light eruption (Kuhn et al. 2001).

Plaque-type sarcoidosis may be clinically similar to LET because it features elevated, smooth-surfaced discoid lesions most often located on the face, scalp, upper trunk, and arms. In contrast to LET, they exhibit a brownish "apple-jelly" color under diascopy.

Plaque-like lesions of *polymorphous light eruption (PLE)* are both clinically and histopathologically similar to LET, and in both a history of photosensitivity is typically found. There are clinical differences, however: LET presents as a solitary or a few persistent nonitchy lesions, especially of the zygomatic area; polymorphous light eruption, in contrast, with multiple itchy lesions, particularly of the sun-exposed areas of the upper extremities, and decolleté, which regress spontaneously within a few days. In the same line, PLE usually arises within 24 hours of sun exposure, whereas LET appears 2–5 days after phototesting (Weber et al. 2001). One should keep in mind, however, that photosensitivity of the PLE type is also found in SLE.

Granuloma faciale is another skin disorder that closely resembles LET. It presents as well-demarcated, elevated, asymptomatic, and persistent nodules and plaques, mostly in the faces of middle-aged patients. Granuloma faciale is usually a solitary lesion.

Subacute Cutaneos Lupus Erythematosus

Differential Diagnosis

Subacute CLE (SCLE) is an exanthematic skin condition with a typical clinical appearance (diagnosis can often be made before the presence of Ro/SSA antibodies

is documented) that is localized at the trunk and the extensor aspects of the upper extremities, more rarely in the face and neck (Sontheimer et al. 1979). Lesions have an intermediate morphology between DLE and SLE: they are erythematous flat plaques, much thinner than DLE, with some dry scaling but without adherent scales and hyperkeratotic follicular plaques. There is a tendency for central regression (which often results in annular lesions), but there is no full-blown atrophy or scarring and depigmentation (Fig. 11.3A). Patients with SCLE only rarely have systemic symptoms, but there is a clear history of photosensitivity.

Psoriasis (Fig. 11.3B) is the skin disorder that most closely resembles SCLE. The size, nummular shape, and color of the individual lesions may be quite comparable, but the predilection sites are different (SCLE has no lesions on the knees, elbows, scalp, and sacral areas), as are the types of scaling (psoriasiform vs small and thin lamellar) and the presence of slight (mostly central) atrophy in SCLE.

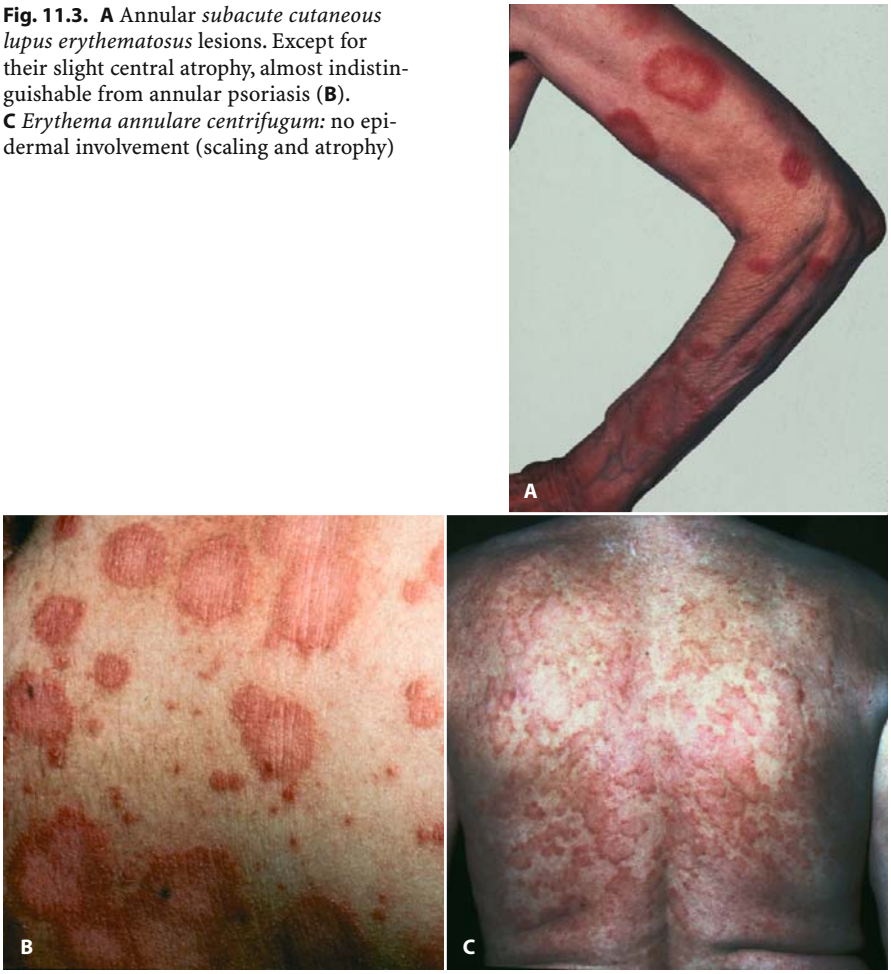

Fig. 11.3. **A** Annular *subacute cutaneous lupus erythematosus* lesions. Except for their slight central atrophy, almost indistinguishable from annular psoriasis (**B**). **C** *Erythema annulare centrifugum:* no epidermal involvement (scaling and atrophy)

Pityriasis rosea differs from SCLE by its acute onset, its more inflammatory character, its typical distribution on the trunk ("christmas tree-like"), and its peripheral collerette-like scaling.

Tinea corporis and *superficial trichomycosis* may be confused with SCLE because they represent annular lesions with a peripheral erythematous scaly margin. Differences are in that the mycotic infections rarely arise in an exanthematic fashion on the trunk (except in immunodeficient individuals), and they are pruritic. Potassium hydroxide preparations quickly resolve diagnostic problems.

Erythema annulare centrifugum (Fig. 11.3C; see above) and other figurated erythemas may clinically (and histopathologically) look similar to SCLE, and indeed they have been equated with this disorder by some authors (Ruzicka et al. 1991). They lack epidermal involvement, however, except of some cases of erythema annulare centrifugum that exhibit a distinctive pattern of scaling at the inner slope of the erythematous margin.

Granuloma annulare, especially the superficial generalized variant (see previously herein) may show some similarity to SCLE; likewise, there is no epidermal involvement.

Neonatal LE (NLE) is caused by maternal Ro/SSA antibodies and therefore shares many features with SCLE: well-demarcated, annular skin lesions with little tendency for atrophy arising in mainly light-exposed areas (photosensitivity) and combined with anemia and heart block. This transient LE syndrome must be distinguished from *seborrheic dermatitis,* which is also found in the first months of life but shows a predilection for the scalp (where it is more desquamative than NLE) and the intertriginous regions (where it is more inflammatory and at times oozing). NLE is further distinguished by larger, stable polycyclic lesions with moderate central atrophy.

Differential diagnosis of neonatal NLE also includes *atopic dermatitis,* which usually sets in at a later time and presents as a more widespread eruption with predilection of the face, extremities, and intertriginous areas. There is pruritus and skin irritability. Neonatal *psoriasis* may look similar to neonatal LE, but it lacks annular patterns and central atrophy.

Systemic Lupus Erythematosus

Differential Diagnosis

Skin lesions of SLE are manifold and often quite characteristic. Most of the cutaneous symptoms are erythematous lesions without or with only mild epidermal involvement (scaling, atrophy, etc): malar erythema (butterfly rash), morbilliform macular rashes, circumscribed erythemas. A second and less frequent morphologic component consists of bullous or ulcerative lesions. Differential diagnosis in SLE is not dominated by the morphology of the cutaneous lesions but by systemic symptoms and laboratory data.

Butterfly Rash

The "butterfly rash" or "malar rash", a proverbial "diagnostic" lesion of SLE, is most often seen in early SLE (Dubois et al. 1964). It is composed of (at least partially) well-

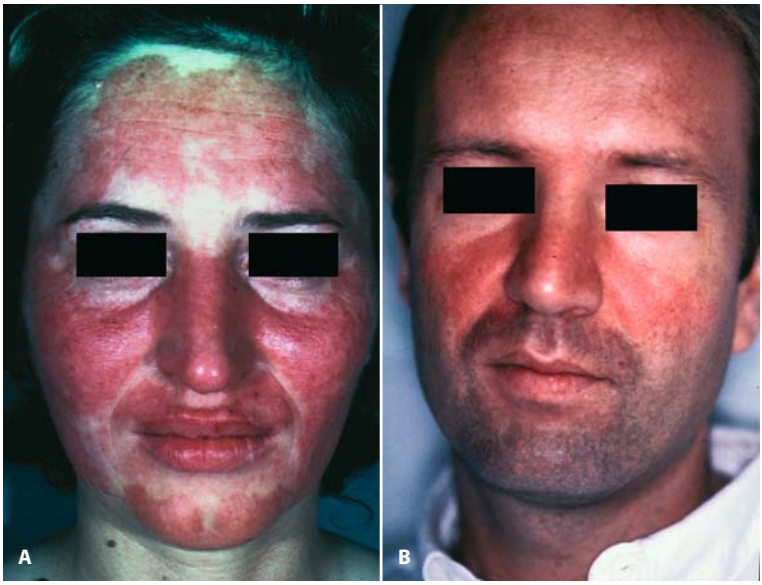

Fig. 11.4. A Butterfly rash in *systemic lupus erythematosus*. A well-demarcated, symmetrical erythema of the malar areas and the back of the nose that has progressed to the forehead and perioral skin. Note the sparing of the nasolabial folds. **B** *Seborrheic dermatitis:* note the yellowish color and involvement of the nasolabial folds

demarcated symmetrical erythemas (and edema) of the malar areas that are connected over the bridge of the nose and thus result in a butterfly-like shape. The forehead and chin may be affected, and the nasolabial folds are characteristically spared (Fig. 11.4A). If the malar rash persists for some time, scales and mild atrophy may develop.

Dermatomyositis may show an analogous erythema of the face ("heliotropic erythema") that may be difficult to distinguish (an encompassing term, "erysipelas perstans," has therefore been coined by the old dermatologists). Typically, the heliotropic erythema is more pronounced in the upper portions of the face (forehead and eyelids), is more edematous, is of a more violaceous color, and not well demarcated. Differential diagnosis may be complicated by muscle weakness and elevated serum muscle enzyme levels, which may be seen in both entities.

Erysipelas of the face is a classic differential diagnosis of the butterfly rash. The main distinguishing marks are its acute onset, asymmetrical distribution pattern, more intensive inflammatory character, regional lymphadenitis, and systemic signs.

Drug-induced phototoxic reactions may be indistinguishable from the butterfly rash of SLE, but they are accompanied by analogous lesions of other exposed body sites in most instances. A history of potentially photosensitizing drugs must be taken (tetracyclines, nonsteroidal anti-inflammatory drugs, amiodarone, phenothiazines, diuretics, sulfonamides, and psoralens).

Seborrheic dermatitis (Fig. 11.4B), *rosacea,* and *perioral dermatitis* are trivial dermatoses that are not always easy to distinguish from facial lesions of SLE; this is less

true for the butterfly rash than for cases of advanced SLE. In these, indistinct erythema and erythematous papules of the face may develop (more often with female patients who more generously apply various ointments on their facial lesions). Distinguishing criteria are the absence of prominent telangiectasias and pustules; absence of inflammatory papules in the perioral regions; absence of seborrhea of the scalp and face; and absence of the yellowish color of seborrheic dermatitis.

DLE lesions may be arranged in the butterfly area, mimicking a chronic butterfly rash.

Maculopapular Exanthemas

Generalized exanthemas of SLE may appear as transitory indistinct morbilliform macular rashes that regress after hours or days and may wax and wane parallel to disease activity; they may persist, however, and transform into more stable macular lesions that are well demarcated, are slightly hypertrophic and scaly, and somewhat resemble the lesions of SCLE. Some may acquire annular shapes or a tylotic morphology (e. g., chilblain lupus). All exanthemas of SLE, except the morbilliform rashes, are situated in the light-exposed areas (face, V region of the neck, extensor surfaces of the arms, wrists, and dorsa of the fingers). Following regression, they leave no atrophy or depigmentation (rather, hyperpigmentation in dark skin). Macular eruptions are clinically much less characteristic than the stable lesions.

Macular drug eruptions and *viral exanthemas* may be morphologically indistinguishable except for the clear predilection of SLE exanthemas for light-exposed areas. Also, SLE exanthemas lack the characteristic symptoms associated with some viral eruptions (such as lymphadenopathy, "catarrhalic" rhinitis and conjunctivitis in rubella, Koplik spots in measles). Constitutional symptoms (fever, malaise, and arthralgias) are little contributory for differential diagnosis because they may occur in all; moreover, episodes of SLE may be precipitated by viral infections, and the respective symptoms may occur simultaneously or in short succession.

Erythema annulare centrifugum may mimic stable lesions of SLE (see previously herein).

Acral maculopapular lesions of dermatomyositis resemble acral maculopapular lesions of SLE. Both appear as reddish and slightly elevated scaly papules of the dorsa of the fingers; there is a peculiar and unexplained difference, however, in that the lesions of dermatomyositis are localized over the interphalangeal joints and spare the skin in between, whereas the opposite is true for the lesions of SLE. Also, those of dermatomyositis are more elevated and hyperkeratotic; nailfold erythemas, telangiectasias, and hemorrhage may occur in both conditions but are more pronounced in dermatomyositis.

Acral vasculitic skin lesions in SLE present as flat, erythematous palmoplantar painful plaques or nodules and resemble *chilblains* ("chilblain lupus"). These lesions are also typically found in LE-like syndromes of *C2* or *C4 deficiency*.

Bullous and Ulcerative Lesions of Systemic Lupus Erythematosus

Vesicle formation and erosions or ulcers are infrequent manifestations of severe SLE (Thivolet et al. 1969). They occur most often as ulcers of the oral mucosa in the course of acute SLE; differential diagnosis includes aphthous stomatitis and erosive lichen planus (see previously herein). Ulcers may arise in the nasal vestible and potentially

lead to perforations of the nasal septum (differential diagnosis: *Wegener´s granulomatosis*).

Nonspecific Skin Lesions in Patients with Systemic Lupus Erythematosus

A spectrum of other skin symptoms that are not LE proper may accompany SLE. By definition, these lesions can be found in other diseases as well, but they do have diagnostic significance.

Vascular lesions play a dominant role. *Raynaud's phenomenon* occurs frequently in SLE, as it does in other collagen vascular diseases. *Leukocytoclastic vasculitis* may arise, often associated with periods of increased disease activity; it may present as cutaneous necrotizing vasculitis (palpable purpura) or as urticarial vasculitis, less often as arteritis, with symptoms similar to polyarteritis nodosa. Thrombophlebitis and thrombotic vessel damage is seen particularly in patients with secondary antiphospholipid syndrome, leading to *livedo reticularis* or *acral cyanosis* or *necrosis*. Thrombocytopenia may cause *thrombocytopenic purpura*. Similar to patients with dermatomyositis, patients with SLE often show *nailfold erythema, telangiectasia, or hemorrhage*. Characteristic nonspecific signs are thin, brittle hair with an "uncombed" appearance, referred to as *woolly* or *lupus hair,* and *telogen effluvium*.

References

Ackerman AB (1997) Tumid lupus erythematosus. In: Ackerman AB, Congchitnant N, Sanchez J, Guo Y (eds) Histologic diagnosis of inflammatory skin diseases. Williams & Wilkins, Baltimore, p 529

Braun-Falco O, Plewig G, Wolf HH (1997) Dermatologie und Venerologie. Springer, Berlin, Heidelberg, New York

Champion RH, Burton JL, Ebling FJG (1998) Textbook of dermatology. Blackwell Science, Oxford

Dubois EL, Tuffanelli DL (1964) Clinical manifestations of systemic lupus erythemosus. JAMA 190:104–111

Fitzpatrick TB (1999) Dermatology in general medicine. In: Freedberg IM, Eisen AZ, Wolff K, Austen KF, Goldsmith LA, Katz SE, Fitzpatrick TB (eds) Dermatology in general medicine. McGraw-Hill, New York

Fritsch P (1998) Dermatologie und Venerologie. Springer-Verlag, Berlin

Irgang S (1940) Lupus erythematosus profundus: report of an example with clinical resemblance to Darier-Roussy sarcoid. Arch Dermatol Syph 42:97–108

Jessner M, Kanof NB (1953) Lymphocytic infiltration of the skin. Arch Dermatol 68:447–449

Kaposi M (1872) Neue Beiträge zur Kenntnis des Lupus erythematodes. Arch Dermatol Syphil 4:36–78

Kaposi M (1883) Pathologie und Therapie der Hautkrankheiten. Urban & Schwarzenberg, Vienna, p 642

Kuhn A, Richter-Hintz D, Oslislo C, Ruzicka T, Megahed M, Lehmann P (2000) Lupus erythematosus tumidus – a neglected subset of cutaneous lupus erythematosus: report of 40 cases. Arch Dermatol 136:1033–1041

Kuhn A, Sonntag M, Richter-Hintz D, Oslislo C, Megahed M, Ruzicka T, Lehmann P (2001) Phototesting in lupus erythematosus tumidus: review of 60 patients. Photochem Photobiol 73:532–536

Kuhn A, Sonntag M, Ruzicka T, Lehmann P, Megahed M (2003) Histopathologic findings in lupus erythematosus tumidus: review of 80 patients. J Am Acad Dermatol 48:901–908

Ruzicka T, Faes J, Bergner T, Peter RU, Braun-Falco O (1991) Annular erythema associated with Sjogren's syndrome: a variant of systemic lupus erythematosus. J Am Acad Dermatol 25:557–560

Sontheimer RD, Thomas JR, Gillilam JN (1979) Subacute cutaneous lupus erythematosus: a cutaneous marker for a distinct lupus erythematosus subset. Arch Dermatol 115:1409–1415
Thivolet J, Perrot H, Beyvin AJ, Preumy H, Storch J (1969) Cutaneous bullous evolution during acute disseminated lupus erythematosus. Bull Soc Fr Dermatol Syphil 76:374–377
Weber F, Schmuth M, Fritsch P, Sepp N (2001) Lymphocytic infiltration of the skin is a photosensitive variant of lupus erythematosus: evidence by phototesting. Br J Dermatol 144: 292–296