Lichen planus

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About two-thirds of patients with lichen planus experience their first attack between the ages of 30 and 60 years. The condition has a number of clinical variants and possible treatment options.

Case history

A 70-year-old woman presented with a five-week history of a progressively worsening, very itchy rash on her trunk and limbs. It had started on her feet and legs and then spread to her forearms and hands. After two months, the rash had become widespread, and it was extensive by the time the patient presented to me. The rash consisted of many small, somewhat livid papules and plaques, some with a fine scale. On some sites there was a clear linear accumulation of the papules typical of a Koebner reaction. Mucosal sites, scalp and nails were not affected. Her family doctor had given her betamethasone dipropionate cream, but it had made no impact on the rash or itch. She was using no other medications.

Diagnosis

The clinical diagnosis was lichen planus (LP). The patient had positive antibodies for hepatitis C and for the core antibodies of hepatitis B but her results were negative for hepatitis B surface antigen and core immunoglobulin M. She had been given a blood transfusion 25 years ago. Results of a full blood examination, liver function tests and antinuclear antibody tests were all normal.

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Treatment

The LP slowly cleared over three and a half months with combination therapy:

- 50 mg prednisolone (reducing over a two-week period)
- narrow band UVB phototherapy (delivered three times a week for 14 weeks)
- mometasone ointment (twice daily application).

Small areas of LP papules continued to recur over the next three months, but these responded well to the mometasone ointment.

Comment

The annual incidence of cutaneous LP is between 0.22 and 1%. The annual incidence of oral LP is between 1 and 4%. Two-thirds of patients experience their first attack of LP between the ages of 30 and 60 years (e.g. in a series of 200 LP patients, only 2% were younger than 20 years). Women may be more commonly affected than men. The characteristic clinical presentation is of multiple flat-topped violaceous papules and plaques, some with a polygonal appearance. The plaques are often quite itchy and may be scaly, frequently forming fine white lines known as Wickham's striae. The Koebner (isomorphic) response may also be present, as with the case presented, where lesions come up at trauma sites and often appear as linear papules at scratched sites.

Examples of lichen planus are shown in the box on page 64 (Figures 1a to e). There is a wide variation in the extent of the rash and the severity of itching in LP. Common sites are the distal limbs (dorsal hands, ventral wrists and forearms, elbows, dorsal feet and legs), the lower back and the neck. However, the rash can also be widespread. It can affect the palms of the hands or soles of the feet (causing yellowish hyperkeratotic plaques) and the genitals (both mucosal and nonmucosal sites). On the glans penis it may be somewhat annular or erosive. Development of LP can be slow or rapid, as can the treatment response (50% of patients are clear of the condition within nine months; 85% by 18 months). However, recurrence does occur, sometimes many years later. Acute widespread forms of LP, such as described in the case presented, may clear more quickly (within three to six months).

LP is a T-cell mediated attack on the epidermis, hair follicle or nail apparatus. It is likely that the immune attack is against altered self-antigens expressed on the surface of keratinocytes. Various causes have been hypothesised, including post-viral infections, drugs and contact allergens. There is a well documented case series of oral LP from contact allergy to amalgam tooth restorations – the clue being that LP develops mainly where the filling touches the affected mucosa.[1] In this situation, if cutaneous patch tests are positive to amalgam or mercury, removal of the filling often resolves the LP. Alternatively, a galvanic reaction between the mucosa and metals has been implicated here. Some studies point to a possible role of hepatitis C infection in LP as positive serology is more common in LP patients in areas endemic for hepatitis C.[2] However, not all studies have shown a correlation. There are also a few reports of LP developing after hepatitis B vaccination.

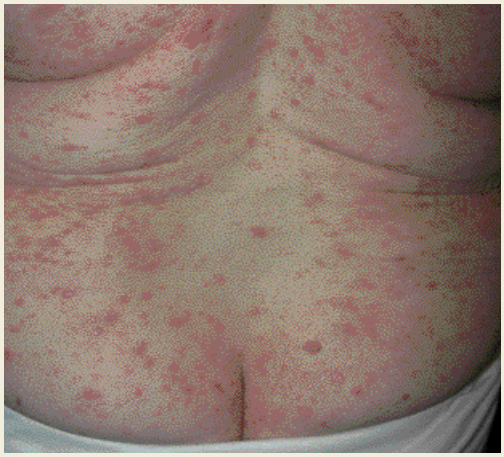
Clinical variants of lichen planus

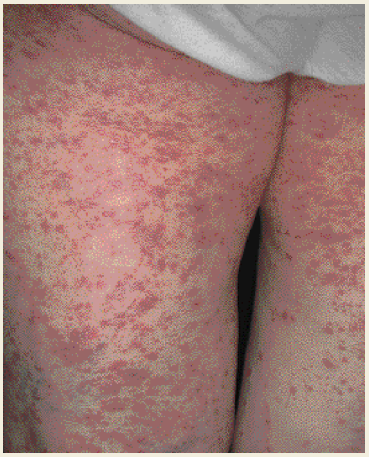
Mucosal LP

Oral LP is seen in less than 75% of patients who have cutaneous LP. In patients whose first site for LP is the mouth, only 10 to 20% will later develop LP on the skin. Commonly affected areas of the mouth

continued

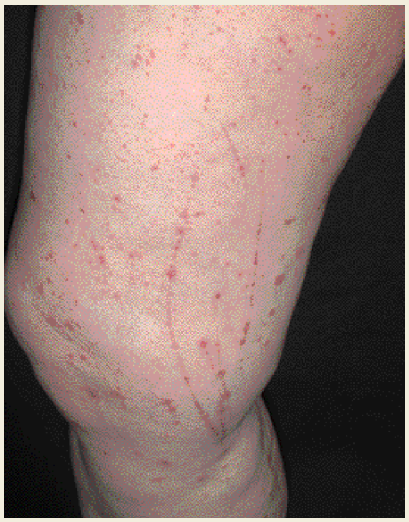
Clinical presentations of lichen planus

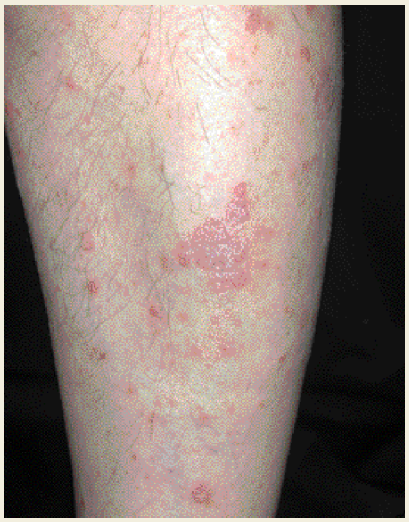


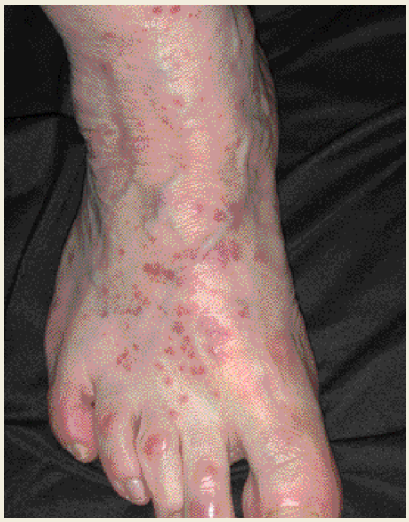


Figures 1a to e. Widespread lichen planus showing typical livid, slightly purplish polygonal papules and plaques on the back (a, far left), thighs (b, left), legs (c and d, below left and centre) and foot (e, below right).

Note the linear distribution of papules on the inner thigh (Koebner reaction from scratching) and somewhat hypertrophic plaques on the legs.







are the labial and buccal mucosae, but the condition may also occur on the gingivae, gingival sulcus or hard palate. Genital LP can also be mucosal in origin, appearing on the foreskin or vulva. Mucosal LP typically presents as white plaques, which often have a lacy appearance. The plaques are frequently associated with erythema. Hypertrophic lesions or erosions may occur. The erosive form of LP tends to be chronic and patients with this form are prone to develop squamous cell carcinoma, particularly those who smoke.[3]

Hypertrophic LP

In patients with hypertrophic LP, the plaques are thick, sometimes scaly and probably arise from heavy scratching and rubbing. They are most often seen on the legs and dorsal feet, and less often on the forearms, lower back and neck.

Atrophic LP

Atrophic LP can be hard to diagnose. It is most often seen on the lower legs as slightly depressed dusky or pigmented plaques.

Actinic LP

Brown, slightly red macules or plaques that appear mostly on the face, neck, upper trunk or forearms of the patient suggest actinic LP. This type of LP occurs more often in younger people of Middle Eastern descent. The patient is not aware of photosensitivity and the role of sunlight in its aetiology is uncertain.

Ulcerative LP

Ulcerative LP is occasionally seen on the soles of the feet. The ulcers are painful and recalcitrant. There may be no LP elsewhere.

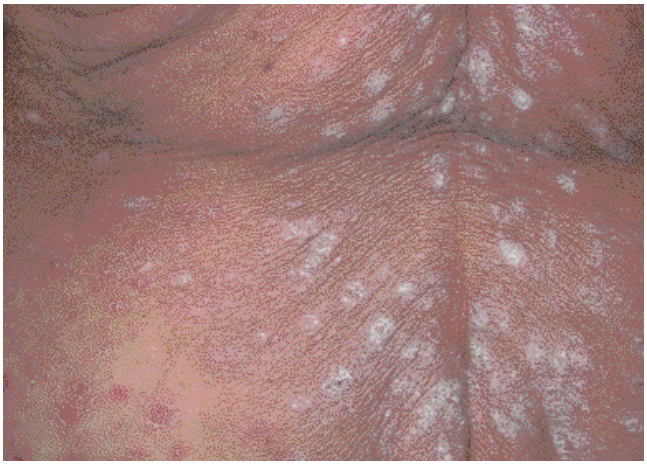


Figure 2. Lichenoid drug eruption which appeared two months after gold injections in a patient with rheumatoid arthritis.

Table. Commonly used drugs implicated in lichenoid drug eruptions

Gold (injected or oral)
Diuretics – thiazides, frusemide
Beta blockers
ACE inhibitors – captopril, enalapril, lisinopril
Quinoline derivatives – quinine, quinidine, hydroxychloroquine, chloroquine
NSAIDs
Phenothiazines
Antibiotics – tetracycline, penicillamine
Anticonvulsants – carbamazepine, phenytoin

Bullous LP

This variant of LP presents with vesicles or small bullae on LP papules and plaques. Biopsy sent for direct immunofluorescence will distinguish it from the rare form of LP that is associated with bullous pemphigoid ('LP pemphigoides'). LP pemphigoides shows a positive immunoglobulin G reaction along the basement membrane with direct immunofluorescence.

Lichen planopilaris

When LP affects hair follicles it is classified as lichen planopilaris. It is usually seen on the scalp, but widespread perifollicular papules can occur anywhere on the body. The affected hairs have perifollicular erythema and scaling. Ultimately, the condition may permanently destroy the hair follicle leading to a gradually extending scarring alopecia that is distinguished from nonscarring alopecias by the affected skin being smooth with no visible follicular orifices. This form of LP is initially localised and patchy but can eventually lead to cosmetically disfiguring extensive alopecia. I liken the process to a 'peat fire'.

LP of the nails

About 10% of patients with LP are affected by this form of LP, which can change the nails in any number of ways. It may cause multiple tiny pits that lead to lusterless, seemingly rough nails (trachyonychia). Partial or complete nail loss can occur, usually as a result of scarring of the proximal nail fold, which causes a pterygium to form. Other possible changes include atrophy, fissuring or lifting (onycholysis) of the nails, or a yellowing and thickening of the nails.

Linear LP

When LP only affects the lines of Blaschko it is known as linear LP. This type of LP is rare, and its occurrence on these embryonic developmental lines suggests that the affected skin was made prone to LP by somatic mutation during embryogenesis.

Lichenoid drug eruptions

Lichenoid drug eruptions tend to be more widespread than idiopathic LP, be somewhat photodistributed, and have features tending towards psoriasiform eczema or pityriasis rosea (Figure 6). Mucous membranes and genitalia are usually spared. Many drugs have been implicated in lichenoid drug eruptions (Table). Unlike other drug eruptions, lichenoid drug eruptions typically occur months after the drug has been started but this latent period can vary from months to three years. In one study of 17 patients, the mean latent period was 12 months. It also tends to take longer to clear (weeks to months) after withdrawing the offending drug than other drug-related skin reactions.

It is also worth commenting on the lichenoid form of chronic graft versus host disease. This condition usually occurs months after allogeneic bone marrow transplantation or peripheral blood stem cell transplantation but it can sometimes appear as soon as a month after transplantation. It is characterised by violaceous or red papules on the dorsal hands, forearms or trunk and is sometimes widespread. It occasionally localises to a dermatome previously affected by herpes zoster. Mucus membranes are commonly affected.

The histopathology of both LP and lichenoid drug eruptions show band-like lymphohistiocytic infiltrate at the dermoepidermal junction. The infiltrate causes epidermal keratinocyte apoptosis, which leads to the formation of colloid bodies. The epidermis is irregularly thickened in a sawtooth pattern (but is thin in the atrophic form of LP). There may be melanin in upper dermal macrophages. Lichenoid drug eruptions are more likely to contain eosinophils or plasma cells in the dermal infiltrate but there are no definite features that distinguish a lichenoid drug eruption from LP.

Differential diagnosis

The clinical features of LP are often distinctive enough to make other diagnoses unlikely. Possible differential diagnoses are listed below. It is important to be able to differentiate idiopathic LP from lichenoid drug eruptions.

Discoid lupus erythematosus

Discoid lupus erythematosus occurs particularly on the head and neck although it can occur elsewhere. Photosensitivity is more common than in LP and may lead to scarring. The plaques are red, sometimes tumid (swollen) and may be scaly. Hyper- and hypopigmentation may occur. Both LP and discoid lupus erythematosus can cause scarring alopecia.

Pityriasis rosea

Pityriasis rosea usually presents with scaly, sometimes itchy plaques on the trunk in a 'fir tree' distribution. Papular and inverse forms (where there are more plaques on the limbs than the trunk) are seen too. Pityriasis rosea usually settles within 10 weeks.

Papular eczema

These itchy papules, unlike other forms of eczema, tend to be smooth or minimally scaly but are usually more dynamic than LP (changing over days). The papules in this form tend to become confluent and the rash may also have urticarial features.

Psoriasis

Psoriasis plaques vary a lot in size but are often larger than those found in LP, tend to have a thicker, more silvery scale, may not itch, and occur more often on the elbows, knees and scalp. Both psoriasis and LP can affect palms, soles and nails.

Bowen's disease

The multiple patches of Bowen's disease or superficial basal cell carcinomas could be mistaken for LP, particularly on the limbs.

Granuloma annulare

Granuloma annulare may present in its typical form of annular red plaques on the dorsal hands, fingers, feet or elbows but it can also be widespread. Itch is uncommon. Sarcoidosis can also look like papules or plaques of granuloma annulare but the plaques tend not to be annular.

Secondary syphilis

There is a wide spectrum of cutaneous manifestations of syphilis. Secondary syphilis usually develops three to eight weeks after the chancre appears (the two may overlap). Typically there are roseola-like macules at first followed by widespread coppery red maculopapules that also affect the palms of the hand and the soles of the feet. If untreated,

this cutaneous manifestation of syphilis tends to spontaneously settle in three to eight weeks, leading to a latent phase.

Candidiasis, dental trauma, leucoplakia

In patients with oral LP, candidiasis, whitening from dental trauma, and precancerous or cancerous leucoplakia (which is more common in smokers) should also be considered.

Treatment

The evidence base for treatment of LP is scant. Topical corticosteroids are the mainstay of management for patients with less extensive LP and there are a variety of treatment options that can be tried for patients with more extensive LP or localised LP that has not responded to potent topical corticosteroids.

Topical therapies

Less extensive LP often slowly settles with twice daily applications of potent topical corticosteroid ointments such as mometasone furoate (Elocon, Novasone), betamethasone valerate 0.05 to 0.1% (Betnovate, Cortival) and betamethasone dipropionate (Diprosone, Eleuphrat). Hypertrophic LP needs twice daily applications of a potent topical corticosteroids like Diprosone OV ointment (enhanced activity betamethasone dipropionate). If the plaques are quite thick it may be useful to apply the ointment overnight using cling wrap occlusion for the first week or two.

Alternatively, intralesional corticosteroids like triamcinolone (Kenacort A10) or betamethasone (Celestone Chronodose) can be prescribed. Topical tacrolimus 0.1% ointment can also work well although it is only available from hospital or compounding pharmacies in Australia.[4] Antihistamines or cool compresses may help reduce itching.

A typical topical regimen for oral mucosal LP is mometasone furoate cream applied to the sites twice a day. The cream is held in the mouth for 5 minutes then rinsed out. Topical corticosteroid inhalers like budesonide (Rhinocort, Budamax) sprayed onto the oral mucosa are another option. Topical antifungal agents such as miconazole (Daktarin Oral Gel) or amphotericin lozenges (Fungilin Lozenges) can be given twice daily to reduce the risk of oral thrush. Topical tacrolimus 0.1% ointment may also be effective. A recent trial of pimecrolimus 1% cream (Elidel) for six weeks in 11 women with vulval LP found that the condition cleared in six of the patients and partially cleared in three others.[5]

Lichen planopilaris may respond to topical corticosteroids, but they may not adequately penetrate to the follicular epithelium. Some of the treatments outlined in the following sections may be used, but 200 to 400 mg daily of oral

hydroxychloroquine (Plaquenil) can be very effective in arresting its progression although the treatment response is slow. Allergic reactions, GI upset and myopathy occasionally limit treatment and regular ophthalmological checks are recommended.

Oral corticosteroids

Oral corticosteroids are usually effective for patients with more extensive LP or localised LP that does not respond to potent topical corticosteroids. A typical regimen would be 25 to 50 mg a day of prednisolone, which is slowly reduced over three to six weeks. Recurrence of LP is common, particularly with the shorter treatment courses, but after oral treatment it should be easier to manage with topical corticosteroids. Occasional patients are dependent on oral corticosteroids for adequate control.

Ultraviolet phototherapy

Ultraviolet phototherapy, usually narrow band UVB three times a week for a few months, is often quite useful. It is slow to work so it is used with topical and/or oral corticosteroids. It helps reduce the risk of the condition flaring as the patient is weaned off oral corticosteroids. Less often used is PUVA therapy (oral oxpsoralen and UVA phototherapy). Low dose excimer laser (UVB 308 nm) has been reported to be useful for treatment-resistant erosive oral LP but this therapy is currently not available in Australia.[6]

Other oral therapies

Several other oral therapies are sometimes tried. There is reasonably good evidence that acetretin (Neotigason, 10 to 30 mg/day) is efficacious in both cutaneous and oral LP. Isotretinoin has also been reported to be effective in a small number of patients but retinoid prescribing is restricted to dermatologists. Dry lips and skin, teratogenicity in women and a small chance of hepatitis and hyperlipidaemia are the main side effects of retinoid treatment. Topical isotretinoin gel (Isotrex Gel) has also been useful in some patients who have oral LP.

There are conflicting reports on the efficacy of griseofulvin (Grisovin, 500 mg to 1 g daily): one small study claimed a high success rate using griseofulvin for three to six months[7] where others have found it to be of little or no benefit. In a recent study of 20 LP patients treated with sulfasalazine (Pyralin EN, Salazopyrin), with dose gradually increased to 3 g per day, for at least four weeks, 13 patients responded fully to the treatment while the remaining seven showed a partial response.[8] There was no improvement in mucosal LP in any of the patients. For patients with severe LP that is dependent on, or resistant to, oral corticosteroids, immunosuppressants such as methotrexate (15 to 25 mg weekly), cyclosporin (up to 5 mg/kg/day), azathioprine (100 to 150 mg/day) and, rarely, mycophenolate mofetil[9] or cyclophosphamide may be beneficial.

Dapsone, metronidazole, itraconazole, thalidomide, enoxaparin, interferon alpha-2b, levamisole and extracorporeal photophoresis have all been described as being effective therapies for LP in isolated reports.[10,11] Similarly, isolated reports have shown some biological agents to be effective in patients with treatment-resistant LP; alefacept in those with generalised LP and efalizumab in those with erosive oral LP.[12,13] MT

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Further reading

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