ABC of Dermatology

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RASHES ARISING IN THE DERMIS

The erythemas

Erythema from antibiotics.

Causes of "toxic" erythema

Drugs	antibiotics, barbiturates, thiazides
Infections	any recent viral infection such as streptococcal throat infection or erysipelas; spirochaetal infections
Pregnancy	
Systemic disease	lupus erythematosus

Complex reactions occurring in the capillaries and arterioles of the skin cause erythema—which is simply redness of the skin. This may present as flat macules or as papules, which are raised above the surrounding skin. The lesions may be transient or last for weeks, constant or variable in distribution, with or without vesicles.

It is possible to recognise specific patterns within this plethora of clinical signs, but even the most experienced dermatologist may be reduced to making a general diagnosis of "toxic" erythema. The best we can do therefore is to recognise the common types of erythema and list the possible causes. It is then a matter of deciding on the most likely underlying condition or group of conditions—for example, bacterial infection or autoimmune systemic disease.

Morphology and distribution

Because there can be the same cause for a variety of erythematous rashes detailed descriptions are of limited use. None the less, there are some characteristic patterns.

Morbilliform—The presentation of measles is well known, with the appearance of Koplik's spots on the mucosa, photophobia with conjunctivitis, and red macules behind the ears, spreading to the face, trunk, and limbs. The prodromal symptoms and conjunctivitis are absent in drug eruptions. Other viral conditions, including those caused by echoviruses, rubella, infectious mononucleosis, and erythema infectiosum may have to be considered.

Scarlatiniform rashes are similar to that in scarlet fever, when an acute erythematous eruption occurs in relation to a streptococcal infection. Characteristically erythema is widespread on the trunk. There is intense erythema and engorgement of the pharyngeal lymphoid tissue with an exudate and a "strawberry" tongue. Bacterial infections can produce a similar rash, as can drug rashes, without the systemic symptoms.

Erythema multiforme

Infections	Collagen disease
Herpes simplex—the commonest cause	Systemic lupus erythematosus
Mycoplasma infection	Polyarteritis nodosa
Infectious mononucleosis	Neoplasia
Poliomyelitis (vaccine)	Hodgkin's diseases
Many other viral and bacterial infections	Myeloma
Any focal sepsis	Carcinoma
BCG inoculation	Chronic inflammation
	Sarcoidosis
	Wegener's granuloma

Erythema multiforme is sometimes misdiagnosed because of the variety of lesions and number of possible precipitating causes; these are listed alongside.

Erythema multiforme.

Clinical picture

The usual erythematous lesions occur in crops on the limbs and trunk. Each lesion may extend, leaving a cyanotic centre, which produces an "iris" or "target" lesion. Bullae may develop in the lesions and on the mucous membranes. A severe bullous form, with lesions on the mucous membranes, is known as the Stevens-Johnson syndrome. There may be neural and bronchial changes as well.

Histologically there are inflammatory changes, vasodilatation, and degeneration of the epidermis.

A condition that may be confused is *Sweet's syndrome*, which presents as acute plum coloured raised painful lesions on the limbs—sometimes the face and neck—with fever. It is more common in women. The alternative name, "acute febrile neutrophilic dermatosis," describes the presentation and the pathological findings of a florid neutrophilic infiltrate. There is often a preceding upper respiratory infection. Treatment with steroids produces a rapid response but recurrences are common.

Annular lesions of erythema multiforme.

Blistering lesions.

Erythema nodosum

Erythema nodosum occurs as firm, gradually developing lesions, predominantly on the extensor aspect of the legs. They are tender and progress from an acute erythematous stage to residual lesions resembling bruises over four to eight weeks.

Usually multiple lesions occur varying in size from 1 to 5 cm. The lesions are usually preceded by an upper respiratory tract infection and may be associated with fever and arthralgia. Infections (streptococcal, tuberculous, viral, and fungal) and sarcoidosis are the commonest underlying conditions.

Rashes due to drugs

Topical neomycin allergy.

There is an almost infinite variety of types of drug reaction. The more usual clinical presentations provide a basic framework with which variations can be compared.

Other reactions

Blistering eruptions—Barbiturates
Sulphonamides
Iodines/
bromides
Chlorpropamide
Salicylates
Phenylbutazone

Lichen planus-like reactions

Chloroquine
Chlorothiazide
Chlorpropamide
Photosensitivity—Thiazide diuretics
(seen on areas exposed to light) Sulphonamides
Tetracyclines

Fixed drug eruption.

External contact with drugs can cause a contact dermatitis presenting with eczematous changes. This occurs with neomycin and also bacitracin. Chloramphenicol and sulphonamides from ophthalmic preparations can also cause dermatitis around the eyes. Penicillin is a potent sensitiser so is not used for topical treatment.

Drugs used *systemically* can cause a fixed drug eruption as already mentioned—or erythema multiforme, the more diffuse macular or papular erythema, symmetrically distributed. In the later stages exfoliation, with shedding scales of skin, may develop. Antibiotics, particularly penicillins, are the most common cause.

Penicillins are the most common cause of drug rashes, which range from acute anaphylaxis to persistent diffuse erythematous lesions. Joint pains, fever, and proteinuria may be associated, as in serum sickness.

Ampicillin often produces a characteristic erythematous maculopapular rash on the limbs 7-20 days after the start of treatment. Such rashes occur in nearly all patients with infectious mononucleosis who are given ampicillin.

Vasculitis

Vasculitis

Inflammation around dilated capillaries and small blood vessels:

- a common component of the erythemas
- may occur as red macules and papules with necrotic lesions on the extremities
- in children with a purpuric type (Henoch-Schönlein purpura) occurs in association with nephritis
- systemic disease, with renal, joint, gastrointestinal, and central nervous system lesions.

Inflammation associated with capillary and small blood vessels is part of the pathological changes of many of the conditions described above. The term vasculitis is also used clinically to describe a variable clinical picture with red macules and papules and with necrosis and bruising in severe cases. In children purpura is more prominent and these cases are usually classified as Henoch-Schönlein purpura. The legs and arms are usually affected. The skin signs are preceded by malaise and fever with arthropathy and there may be associated urticaria. Since a high proportion of cases are associated with systemic lesions it is essential to check for renal, joint, gastrointestinal, and central nervous system disease. In children with Henoch-Schönlein purpura nephritis is common.

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Purpura

Is seen on the skin as a result of:

- thrombocytopenia—platelet deficiency
- senile purpura—due to shearing of capillaries as a result of defective supporting connective tissue
- purpura in patients on corticosteroid treatment—similar to senile purpura
- Schamberg's disease—brown macules and red spots resembling cayenne pepper on the legs of men
- associated vasculitis.

Acute vasculitis with necrosis.