NOTES
ERYTHEMA MULTIFORME & DRUG ERUPTION

GENERALLY, WHAT ARE THEY?

PATHOLOGY & CAUSES

- Skin, mucous membrane conditions
- Associated with medication use/infection

CAUSES
- Exact mechanism unclear, severe immune reaction against foreign antigen

COMPLICATIONS
- Initial rash may → epidermal layer loss

SIGNS & SYMPTOMS

- Desquamating skin, mucous membrane rash

DIAGNOSIS

LAB RESULTS
- Skin biopsy

OTHER DIAGNOSTICS
- Clinical history

TREATMENT

- Identify/remove/treat offending agent/infection

ERYTHEMA MULTIFORME

osms.it/erythema-multiforme

PATHOLOGY & CAUSES

- Immune-mediated, acute, self-limiting skin condition
- Type IV hypersensitivity

CAUSES
- Suspected deposition of primarily IgM-bound immune complexes in superficial skin, oral mucous membranes

Infection (most)
- Viral
  - Herpes simplex primary cause
- Bacterial
  - Hemolytic *Streptococci*, *Legionella*, *Mycobacterium*, *Mycoplasma pneumoniae*, *Neisseria meningitidis*, *Pneumococcus*, *Salmonella*, *Staphylococcus*
- Parasitic
  - *Trichomonas*, *Toxoplasma gondii*

Drugs (rarely)
- Non-steroidal anti-inflammatories (NSAIDs), sulfonamides, phenytoin, barbiturates, phenylbutazone, penicillin, allopurinol

Physical factors
- Sunlight, radiotherapy, cold

Autoimmune disease
- Vasculitides

Hematological malignancy
- Non-Hodgkin lymphoma, leukemia, myeloid metaplasia

RISK FACTORS
- < 20 years old
- ↑ frequency in biological males

SIGNS & SYMPTOMS
- "Multiforme" denotes wide associated lesion variety
- Target lesions
  - Initially round erythematous papules → dusky central area/blister, surrounded by dark red inflammation, surrounded by pale edematous ring, erythematous region on periphery
- Pruritus in affected area
- Painful lesions
- If severe
  - Fever, weakness, malaise

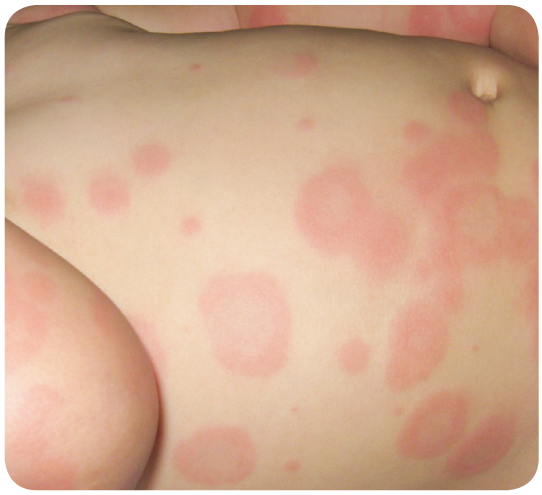

Figure 3.1 The abdomen of a child displaying numerous target lesions in a case of erythema multiforme.

Erythema multiforme minor
- Often herpes simplex
- Involves skin (little/no mucous membrane involvement)
- Favors skin of extremities, face
- Symmetrical circular lesions
- Lesions become classic "target" lesions (red border, small white center)
- Rash spreads towards body center

Erythema multiforme major
- Often drug-related
- Epidermal detachment/skin loss progression
- Erythematous, confluent, bullous lesions
- Involves mucous membranes
- Nikolsky's sign (lightly rub skin with firm object for few seconds → blister forms)

DIAGNOSIS

LAB RESULTS
- Biopsy to exclude other skin disorders

OTHER DIAGNOSTICS
- Identify offending agent/infection
  - *Identification:* target lesions, symmetrical distribution

TREATMENT
- Often self-resolving in 1–2 weeks

MEDICATIONS
- Control primary cause
  - Treat/remove identifiable causes
  - *Herpes simplex suspected:* oral acyclovir/valaciclovir/famciclovir
  - Eliminate possible offending drugs

Mild disease
- Topical corticosteroids
- Antihistamines

Severe Disease
- Glucocorticoids
- In severe cases, prednisone considered

Recurrent disease

- Systemic antivirals (up to 6 months)
- Immunosuppression if antivirals fail

STEVENS–JOHNSON SYNDROME & TOXIC EPIDERMAL NECROLYSIS

osms.it/stevens-johnson_syndrome
osms.it/toxic-epidermal-necrolysis

PATHOLOGY & CAUSES

- Same underlying pathology (severity spectrum)
  - Stevens–Johnson syndrome (lower end), toxic epidermal necrolysis (upper end)
- Severity, classification
  - Body surface involvement %
- Severe mucocutaneous reaction → epidermal detachment

CAUSES

- Cytotoxic T cell mediated destruction of keratinocytes expressing foreign antigen

Medications

- Most common
- Allopurinol, sulfa drugs (e.g. sulfonamide antibiotics), lamotrigine, carbamazepine, nevirapine, phenylbutazone, thiacetazone, oxicam NSAIDS

Infections

- Mycoplasma pneumoniae most common infective agent

RISK FACTORS

- HIV/AIDS
- Systemic lupus erythematosus
- > 40 years old
- Genetic carbamazepine interaction predisposition (HLA-B*15:02, HLA-A*31:01 alleles)
- ↑ frequency in biological females

COMPLICATIONS

- Dehydration, sepsis, pneumonia, multiple organ failure, renal tubular necrosis, acute renal failure, phimosis, vaginal synechiae (adhesions), inside eyelid-tissue scarring → corneal vascularisation → vision loss

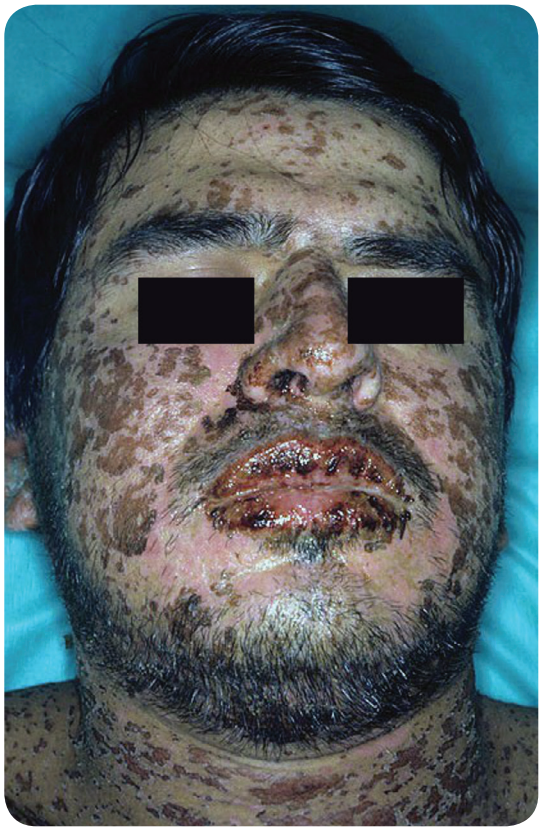

Figure 3.2 An individual with Stevens–Johnson syndrome.

SIGNS & SYMPTOMS

Systemic

- Before skin eruptions occur
- Fever, sore throat, fatigue, cough

Mucocutaneous

- Burning eyes, skin
- Red-purple macules → skin blisters → peels, forms painful raw areas
- Mucous membranes (often) → painful crusts, erosions
- Starts on trunk → rest of body
- Spontaneous ulceration of skin, mucous membranes (often eyes/lips)
- Conjunctivitis (often accompanied by purulent discharge)
- Round ulcerating lesions (approx. 2.5cm/1in diameter)
  - Arise on face, trunk, arms, legs, soles of feet (scalp spared)
- Nikolsky's sign

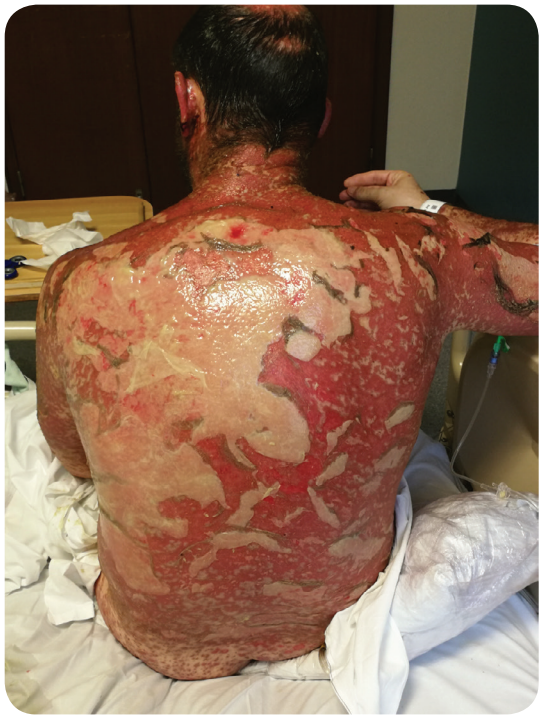

Figure 3.3 An individual with toxic epidermal necrolysis ten days after the onset of symptoms.

DIAGNOSIS

- *Stevens–Johnson syndrome:* < 10% skin involvement
- *SJS/TEN overlap:* 10–30%
- *Toxic epidermal necrolysis:* > 30%

LAB RESULTS

- Skin biopsy

OTHER DIAGNOSTICS

- Clinical history, suspected agents

TREATMENT

MEDICATIONS

- Analgesics (non-opioid for non-severe, opioids for severe pain)
- Antihistamines
- Intravenous immunoglobulin

Infection control

- Culture-specific antibiotic initiation

OTHER INTERVENTIONS

- Transfer to burn/intensive care unit
- Fluid support
- Oral feeding, nasogastric tube
- Room temperature 30–32°C/86–90°F (minimize heat loss)

Infection control

- Sterile handling
- Skin disinfection
  - Antiseptic solution
- 48 hourly skin, blood, indwelling line culture

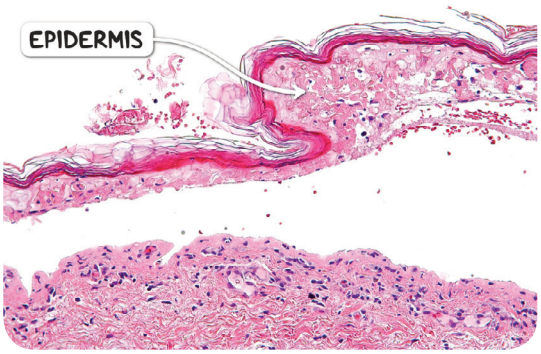

Figure 3.4 A histological section of skin demonstrating epidermal necrolysis. The epidermis is detached from the dermis and the keratinocytes have undergone necrosis. This can be seen in erythema multiforma, Stevens-Johnson syndrom and toxic epidermal necrolysis.