Ecthyma

Ecthyma is a cutaneous infection by *Streptococcus pyogenes* or *Staphylococcus aureus* with dermal extension. As it extends into the dermis, it is often referred to as a deeper form of impetigo.

Epidemiology

- There are no figures for incidence but it is more frequent in children and the elderly.
- There is no apparent predilection for race or sex.

Risk factors

- Tissue damage from excoriations, insect bites or dermatitis and a compromised immune system as in diabetes or neutropenia, predisposes to the development of ecthyma. Other causes of immune compromise may include malignancy and HIV.
- Poor hygiene aids spread as do overcrowded living conditions.
- It is more common in hot and humid climates.
- Untreated impetigo with poor hygiene may progress to ecthyma.
- Malnutrition is also a risk factor.

Presentation

- Ecthyma starts like impetigo, sometimes in a pre-existing wound.
- Ecthyma usually begins as vesiculopustules with a grey-yellow crust that evolves into shallow punched-out ulcers with a necrotic base and haemorrhagic crust[1].
- Lesions can be multiple and are commonly seen on the lower extremities.

Symptoms

- Ecthyma usually arises on the lower legs or feet of children, those with diabetes, or neglected elderly people.
- Lesions are typically painful with associated lymphadenopathy.
- In tropical climates, ulcers are commonly found on the ankles and dorsum of the feet.

Signs

- The most commonly affected sites are buttocks, thighs, legs, ankles and feet.
- It starts as a vesicle or pustule over inflamed skin and then deepens to ulcerate with an overlying crust.
- The crust is grey-yellow and is thicker and harder than the crust of impetigo.
- A shallow, punched-out ulcer is seen if the crust is removed.
- The deep dermal ulcer has a raised and indurated margin.
- Ecthyma lesions may remain of constant size and resolve without treatment or they can enlarge to 3 cm in diameter.
- Ecthyma heals slowly, usually with a scar.
- Regional lymphadenopathy is common, even with solitary lesions.

Differential diagnosis

- Ecthyma gangrenosum (a similar condition caused by *Pseudomonas* spp.)[2]. It tends to be more severe and, if diagnosis is delayed, there is a significant mortality.
- Streptococcal ecthyma can mimic potentially serious zoonotic infections[1].
- Ecthyma contagiosum is an alternative name for orf, which can look similar[3]. The diagnosis of orf is usually based on the patient's history of relevant exposure.
- Also consider:
  - Insect bites
  - Leishmaniasis
  - Lymphomatoid papulosis
  - Pyoderma gangrenosum
  - Sporotrichosis
  - Venous or arterial ulcers

Investigations

- Swab for bacteriology.
- Fasting glucose or HbA1c to exclude diabetes.
- FBC for neutropenia.
Associated diseases

Ecthyma is more likely to occur in association with diabetes or other conditions of immune compromise.

Management[^4]

Non-drug
- Treatment depends on the progression of the disease.
- Hygiene is important. Use bactericidal soap and frequently change bed linens, towels and clothing.
- Remove crusts and apply an antibiotic ointment daily.
- Povidone-iodine and hydrogen peroxide may be used as antiseptics.

Drugs
- Topical mupirocin ointment is very effective. Fusidic acid is an alternative. Topical antibiotics are usually satisfactory if the infection is localised.
- More extensive lesions require oral antibiotics, possibly for several weeks to obtain full resolution.
- Penicillin should be adequate to treat streptococci.
- If *S. aureus* is also present, an antibiotic resistant to penicillinase may be advised.
- Consider parenteral antibiotics if there is widespread involvement.

Surgical
Gently debride the crusts if they are extensive.

Complications[^5]
- Ecthyma rarely produces systemic symptoms.
- Invasive complications of streptococcal skin infections can include cellulitis and erysipelas, gangrene, lymphangitis, suppurative lymphadenitis and bacteraemia.
- Non-suppurative complications of streptococcal skin infections include scarlet fever and acute glomerulonephritis. Antibiotics do not appear to reduce the rate of post-streptococcal glomerulonephritis.
- Possible sequelae of secondary untreated *S. aureus* pyodermas include cellulitis, lymphangitis, bacteraemia, osteomyelitis and acute infective endocarditis. Some *S. aureus* strains produce exotoxins that can lead to staphylococcal scalded skin syndrome and toxic shock syndrome[^6].

Prognosis
Healing is slow with scar formation but response to appropriate antibiotics occurs over several weeks.

Prevention
In tropical climates, pay attention to hygiene and use insect repellents to reduce bites.

Further reading & references
- Ecthyma; DermNet NZ
- Ecthyma (including ecthyma gangrenosum); Primary Care Dermatology Society (PCDS), July 2015
- Ecthyma; Lippincott's Guide to Infectious Diseases

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