

Skin Infections



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KEYWORD

- Bacterial, fungal, and Viral skin infections • Impetigo • Bullous impetigo • Erysipelas
- Cellulitis • Methicillin-resistant *Staphylococcus aureus* • Periorbital cellulitis
- Orbital cellulitis

KEY POINTS

- Skin and soft tissue infections can be organized by their underlying etiology: bacterial, fungal, and viral causes.
- The primary care provider will commonly see skin and soft tissue infections in the outpatient setting.
- Skin and soft tissue infections range from the uncomplicated impetigo to the potentially lethal necrotizing fasciitis.

INTRODUCTION

The primary care provider will commonly see skin and soft tissue infections in the outpatient setting. Skin and soft tissue infections range from the uncomplicated impetigo to the potentially lethal necrotizing fasciitis. This article reviews these infections based on their underlying etiology: bacterial, fungal, and viral causes.

BACTERIAL SKIN INFECTIONS

Impetigo

Impetigo (**Fig. 1**) is a common bacterial skin infection of superficial epidermis. It is caused by *Staphylococcus aureus*, group A beta-hemolytic *Streptococcus pyogenes*, or less commonly, anaerobic bacteria.¹ Although impetigo can occur at any age, it most commonly affects children aged 2 to 5 and is the most common bacterial skin infection. Impetigo is the third most common skin disease in children after dermatitis and viral warts.² Impetigo accounts for 50% to 60% of all bacterial skin infections.³ Summer months in temperate regions and humid, tropical climates are predisposing

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Fig. 1. Impetigo of nares. (Courtesy of Klaus D. Peter, Gummersbach, Germany.)

factors. Insect bites, varicella, herpes simplex virus, and other conditions that involve breaks in the skin predispose patients to the formation of secondary impetigo.²

Nonbullous impetigo typically begins as a single red maculopapular lesion that quickly becomes a vesicle. The vesicle may rupture and the contents dry to form the characteristic honey-colored crusts.²

Treatment of nonbullous impetigo consists of topical antibiotics.⁴ Two antibiotic creams, mupirocin and fusidic acid, are at least as effective as oral antibiotics where the disease is not extensive.⁴ Systemic antibiotics may be needed if there are numerous lesions, outbreaks affecting several people, or ecthyma (ulceration extending into dermis).⁵ Options for oral treatment include beta-lactamase-resistant penicillins (cloxacillin, dicloxacillin and flucloxacillin), broad-spectrum penicillins (ampicillin, amoxicillin with clavulanic acid), cephalosporins, or macrolides.⁵ Acute poststreptococcal glomerulonephritis is a serious complication that affects between 1% and 5% of patients irrespective of antibiotic treatment.²

Bullous impetigo is caused exclusively by toxin-producing *S aureus*, representing a localized form of staphylococcal scalded skin syndrome.⁶ It most commonly affects the neonate. Initially, large, superficial, fragile bullae can develop on the trunk and extremities. Bullous impetigo may affect the anogenital area and buttocks of infants, being one of the most common causes of ulceration in these regions.¹ Antibiotic coverage for *Staphylococcus* is the mainstay of treatment. Dicloxacillin and cephalixin are recommended because susceptibility of found *S aureus* isolates.⁵

Erysipelas

Erysipelas has been defined in 3 different ways. First, the distinction between erysipelas and cellulitis is the depth of infection. Erysipelas is a more superficial infection affecting the superficial dermis, including the superficial lymphatics. This is in contrast to cellulitis, which involves the deeper reticular dermis and subcutaneous fat. Erysipelas has more clearly defined borders of inflammation. A second definition of erysipelas refers only to facial cellulitis. The third definition from European countries considers erysipelas a synonym for cellulitis affecting any skin area.⁵

Group A beta-hemolytic streptococci is believed to be the most common cause of erysipelas, in particular *S pyogenes*.⁵ Traditionally, penicillin has been the treatment of choice for erysipelas. Other treatment options include a cephalosporin, such as

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