Sports and Skin

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Objectives

• Review skin infections that can impact sports participation
• Review common skin diseases seen in athletes
• Discuss patterns suspicious for contact dermatitis and potential triggers
• Review acne mechanica, Isotretinoin-related sports issues, and the impact of supplements on acne
• Recognize cholinergic urticaria
• Understand the Koebner phenomenon
Skin Infections

- Folliculitis
- Furuncles
- Impetigo
- Bullous Impetigo
- Tinea
- Herpes simplex
- Molluscum Contagiosum
Folliculitis

- Infection of the hair follicle
- *S. aureus* most common infectious cause
- Risk factors include maceration, occlusion, hair removal, environmental factors
- Superficial forms can be treated with antibacterial washes while more extensive involvement may require oral antibiotics
- Mupirocin oint BID nares/genital area x 5 days, antibacterial washes, dilute sodium hypochlorite baths, and cleaning of fomites may be needed for recurrent cases
Folliculitis
Folliculitis
Folliculitis
Furuncles

- Follicle based abscesses, typically caused by *S. aureus*
- Frictional areas and hair-bearing regions of face, neck, axillae, buttocks, thighs, and perineum most common
- Painful, erythematous nodule that eventually becomes fluctuant
Furuncles

• Treatments include:

  – Warm compresses
  – Incision and drainage
  – Oral antibiotic therapy for high risk areas (face, hands, genitalia), multiple lesions, associated cellulitis, immunosuppressed, concern for MRSA
Furuncle
Impetigo

- Erythematous macule that develops fragile pustule with associated “honey-colored” crust
- Occurs in an area of skin disruption
- *S. aureus* and group A beta-hemolytic *Strep* (*Streptococcus pyogenes*)
- Contact sports is a risk factor
- 5% rate of post-streptococcal glomerulonephritis in *S. pyogenes* cases
Impetigo
Bullous Impetigo

• Caused by exfoliative toxins (ETA, ETB) by *S. aureus* phage group II
  – Same toxins seen systemically in staphylococcal scalded skin syndrome (SSSS)

• Small vesicles develop into large bullae which rupture easily and leave characteristic collarette of scale

• Can occur on intact skin

• *S. aureus* can be cultured from vesicle/bulla fluid
Bullous Impetigo
Bullous Impetigo
Staphylococcal Scalded Skin Syndrome
Tinea

• Typically caused by *Trichophyton*, *Microsporum*, and *Epidermophyton* species

• Clinical findings:
  – Annular, erythematous scaly plaques trunk and extremities (tinea corporis)
  – Erythema of inguinal fold with scaling, advancing border (tinea cruris)
  – Maceration and scaling in webspaces and surrounding areas (tinea pedis)
  – Erythema, scaling, and alopecia (tinea capitis)
Tinea Corporis/Capitis
Tinea Capitis
Tinea Capitis
Tinea Corporis
Tinea Corporis
Tinea Corporis
Tinea
Tinea Cruris
Tinea Pedis

![Image of Tinea Pedis](image.png)
Tinea pedis
Tinea Pedis
КОН
Majocchi’s Granulomas
Majocchi’s Granulomas
Herpes Simplex

- Herpes gladiatorum is typically HSV-1
- Grouped vesicles on erythematous base
- Spread by contact with saliva or vesicle fluid
- Occurs within 3-7 days of exposure
- Initial outbreaks can also have lymphadenopathy, malaise, fever as prodrome prior to onset
- Lesions are painful, pruritic, or burning
- Subsequent recurrences are not typically as severe as initial
Herpes Simplex
Herpes Simplex
Herpes Simplex
Herpes Gladiatorium
Eczema Herpeticum
Eczema Herpeticum
Molluscum Contagiosum

- Flesh-colored umbilicated papules 2-8 mm in size
- Koebner phenomenon can be seen
- May resolve spontaneously
- Can be associated with molluscum dermatitis
- Treatments include topical cantharidin (compounded), imiquimod (off-label use), topical retinoids (off-label use), curettage, cryotherapy
Molluscum
Molluscum
Molluscum
Skin Diseases and Clinical Findings in Athletes

- Tinea Versicolor
- Pitted Keratolysis
- Contact Dermatitis
- Cholinergic Urticaria
- Striae
- Miliaria
Tinea Versicolor

- Presents in adolescence
- Scaly, oval macules, thin plaques, and patches either hyper or hypopigmented
- Yeast forms of *Malassezia furfur*
- Characteristic KOH findings
- Exacerbated by sweating and hot, humid environmental conditions
Tinea Versicolor
Tinea Versicolor
Tinea Versicolor
Tinea Versicolor
КОН
Pitted Keratolysis

- 1-7 mm pits or depressions within the stratum corneum
- Associated with hyperhidrosis and malodor
- Causes include *Micrococcus sedentarius* and *Corynebacterium*
- Treated with topical antibiotics including erythromycin, clindamycin and aluminum chloride for hyperhidrosis
Pitted Keratolysis

www.dermquest.com/image/028993H
Allergic Contact Dermatitis

- Delayed-type hypersensitivity reaction
- Occurs after exposure to a previously sensitized chemical
- Acute cases can be vesicular
- Chronic exposures tend to be lichenified, scaly erythematous plaques
- Correspond to the area of contact with the inciting chemical
- Patch testing is the gold standard for diagnosis
Shoe Allergic Contact Dermatitis

[Image of a foot with allergic contact dermatitis]
Shoe Allergic Contact Dermatitis
Cholinergic Urticaria

- Small 1-3 mm urticarial papules or wheals with erythematous flare
- Occur predominantly trunk
- Persist for 30 minutes to hours, with 24 hour refractory period
- Can be associated with systemic symptoms
- Triggered by acetylcholine action on the mast cell
- Seen in exercise, increased temperatures, stress
Cholinergic Urticaria
Striae

• Linear atrophic lesions from dermal damage related to excessive stretching of the skin
  – Seen in significant weight fluctuations, pregnancy, puberty (30%), strength training
  – Iatrogenic: topical steroid use
  – Cushing’s
Striae
Miliaria

• Obstruction of the eccrine sweat duct by keratin plugs
• Results in sweat retention within the skin
• Clinical findings are based on level of obstruction
  – Miliaria crystallina
    • Stratum corneum – clear vesicles, easily ruptured
  – Miliaria rubra (most common)
    • Mid epidermis – erythematous papules, macules, vesicles, pustules
  – Miliaria profunda
    • Dermal-epidermal junction – 1-3mm white papules
• Occurs in settings of significant sweating and occlusion
Miliaria Rubra
Acne and Sports Participation

• Acne Mechanica
• Isotretinoin Use and Sports
• Acne and Supplements
Acne Mechanica

- Triggered by:
  - Occlusion
  - Friction
  - Moisture
  - Heat
  - Pressure

- Treatments include:
  - Avoidance
  - Removal of offending garments, helmets, pads, etc. and skin cleansing as soon as possible after physical activity
  - Traditional acne treatments
Acne Mechanica
Acne
Acne
Acne
Acne
Acne
Isotretinoin and Athletes

- Increased fragility of the skin with erosions
  - Increased risk of secondary infections with non-intact skin
- Tendonitis
- Myalgias in 15%
- Diffuse interstitial skeletal hyperostosis, premature epiphyseal closure, osteophyte formation, decreased bone density
  - Dose and duration dependent
  - Not found in typical isotretinoin course of acne treatment
- Photosensitivity
Supplements, Diet, and Acne

- Anabolic steroid-induced acne
- Review of studies implicating whey protein, milk consumption, and glycemic index with acne
Koebner Phenomenon

- Occurrence of particular skin diseases in areas of trauma
- Common skin diseases include psoriasis, vitiligo, molluscum contagiosum
Psoriasis
Psoriasis
Psoriasis
Psoriasis
Vitiligo
Vitiligo
References

- National Library of Dermatologic Teaching Slides (NLDTS) 4.0, American Academy of Dermatology
References


