



#DaVinciCases

[Dermatology Case 1](#)



Dermatology 1

A 15-year-old female presents to clinic with a new rash. She noticed the rash on her stomach after swim practice 2 weeks ago and states it has started to become itchy and spread. Her younger brother, who shares the same bathroom with her, has a similar rash. On exam, 3 to 4 erythematous scaly plaques with central clearing are scattered across the abdomen. One of the lesions is shown in the image below. A scraping is taken for a potassium hydroxide (KOH) preparation.

Question: What is likely to be observed under the microscope?

- A. Short hyphae and spores
- B. Pseudophyphae
- C. Hyphae
- D. Narrow based budding yeast
- E. Broad based budding spores



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Key Findings

- Young female who is a swimmer with a new onset rash on abdomen that is slowly spreading; has close contact with similar rash
- Rash is symptomatic: pruritic
- Physical exam and photo shows an erythematous scaly plaque with central clearing
- Differential:
 - tinea versicolor, tinea corporis, pityriasis rosea, atopic dermatitis, or psoriasis


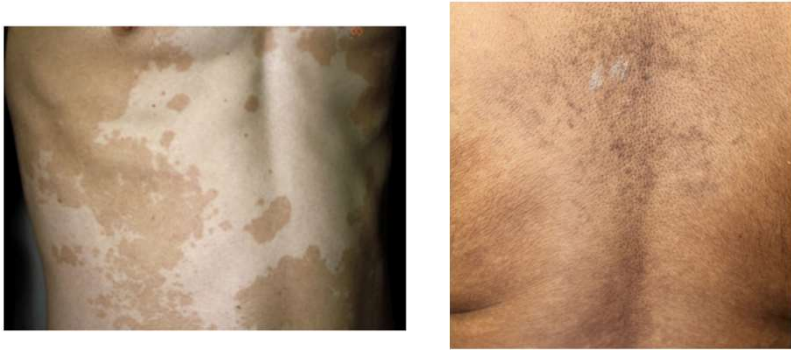


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Pityriasis Rosea		<ul style="list-style-type: none">•Causes: unknown; viral, bacterial, and non-infective causes have been hypothesized•Lesions: primary herald patch (a slightly raised, oval, salmon-pink or red plaque 2–5 cm in diameter, with a peripheral scale trailing just inside the edge of the lesion) and then secondary rash (several scattered oval lesions with a dry surface)•KOH prep: not applicable•Treatment: none, self limiting
Discoid Eczema		<ul style="list-style-type: none">•Causes: chronic inflammatory skin disease characterized by multiple pruritic, coin-shaped eczematous lesions involving the extremities and, less commonly, the trunk• Lesions: scattered, well-defined, coin-shaped and coin-sized plaques of eczema•KOH prep: not applicable•Treatment: topical steroids, emollients, biologics
Psoriasis		<ul style="list-style-type: none">•Chronic inflammatory skin disease with a strong genetic predisposition and autoimmune pathogenic traits• Lesions: scattered, well-defined, coin-shaped and coin-sized plaques of eczema•KOH prep: not applicable•Treatment: topical steroids, emollients, topical vitamin D analogs, UV light, biologics, etc.



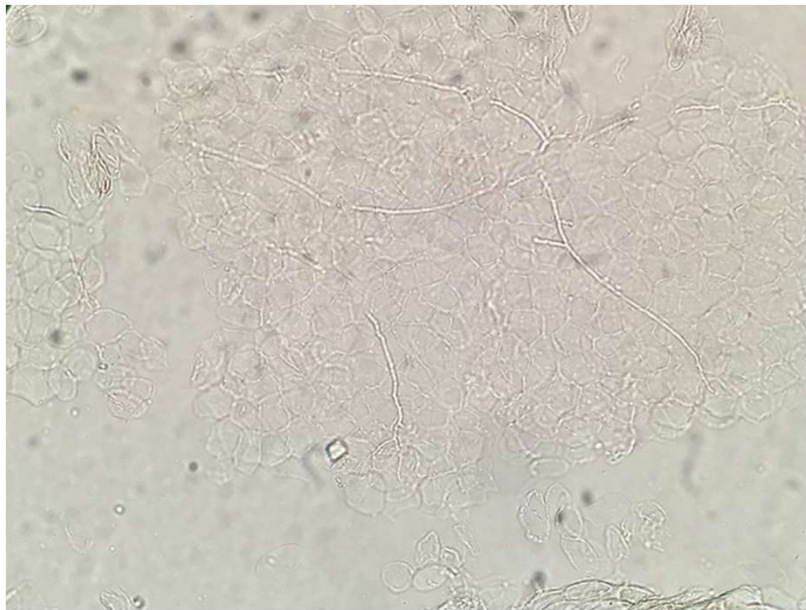
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<p>Tinea Corporis</p>		<ul style="list-style-type: none">•Fungi: microsporum, trichophyton, epidermophyton•Lesions: Pruritic, erythematous, scaly plaques with central clearing•KOH prep: hyphae•Treatment: topical antifungal agent (such as azoles, allylamines, butenafine, ciclopirox, tolnaftate, and amorolfine) for multiple weeks or oral antifungal for resistant cases
<p>Tinea Versicolor</p>		<ul style="list-style-type: none">•Fungi: Malassezia furfur•Lesions: Salmon-colored, light brown, or hypopigmented macules, most frequently on chest and back, lesions do not tan and may scale when scraped•KOH prep: short hyphae and spores (“spaghetti and meatballs”), wood lamp shoes extent of disease•Treatment: topical antifungal for several weeks or oral ketoconazole for 1-5 days

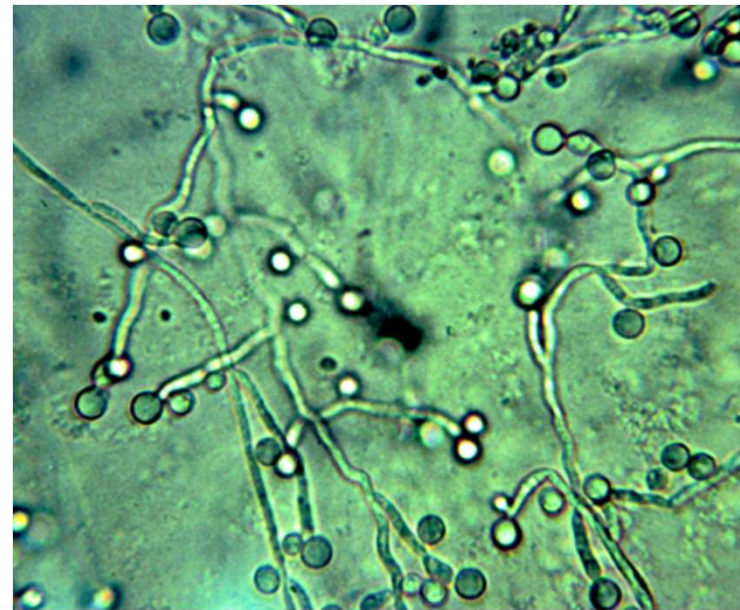


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A potassium hydroxide (KOH) preparation performed with skin scrapings from the affected areas is the primary method of differentiating fungal infections of the epidermis (eg, tinea corporis, tinea pedis, tinea cruris, tinea manuum, tinea faciei).



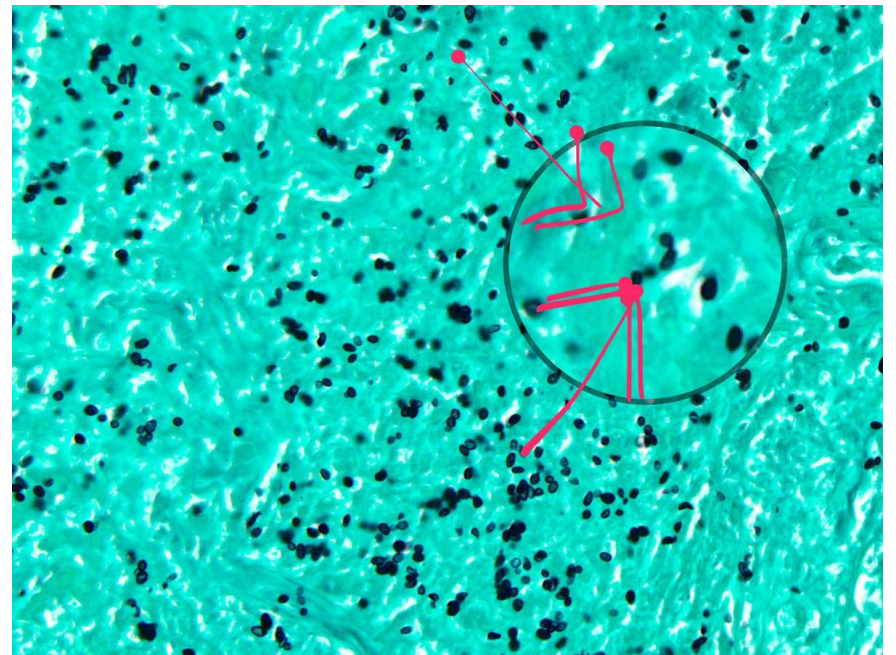
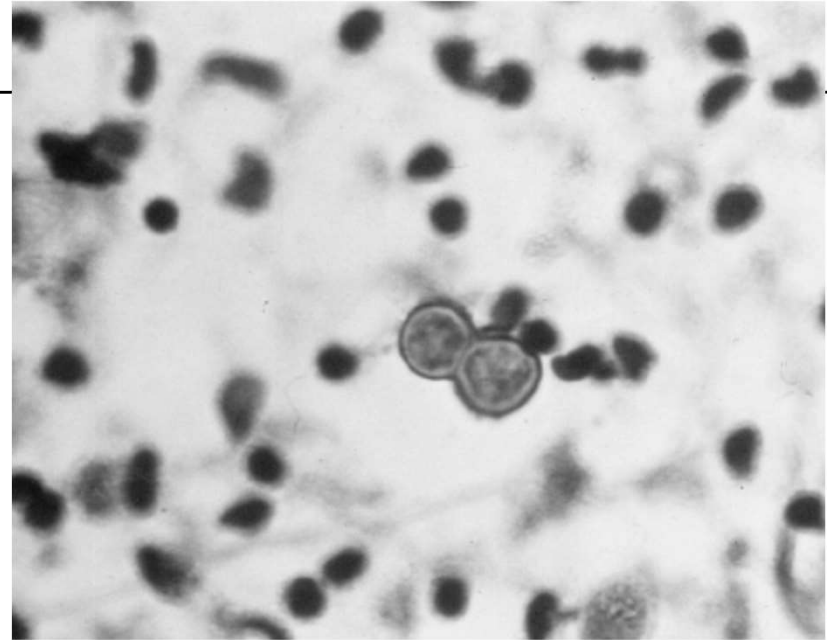
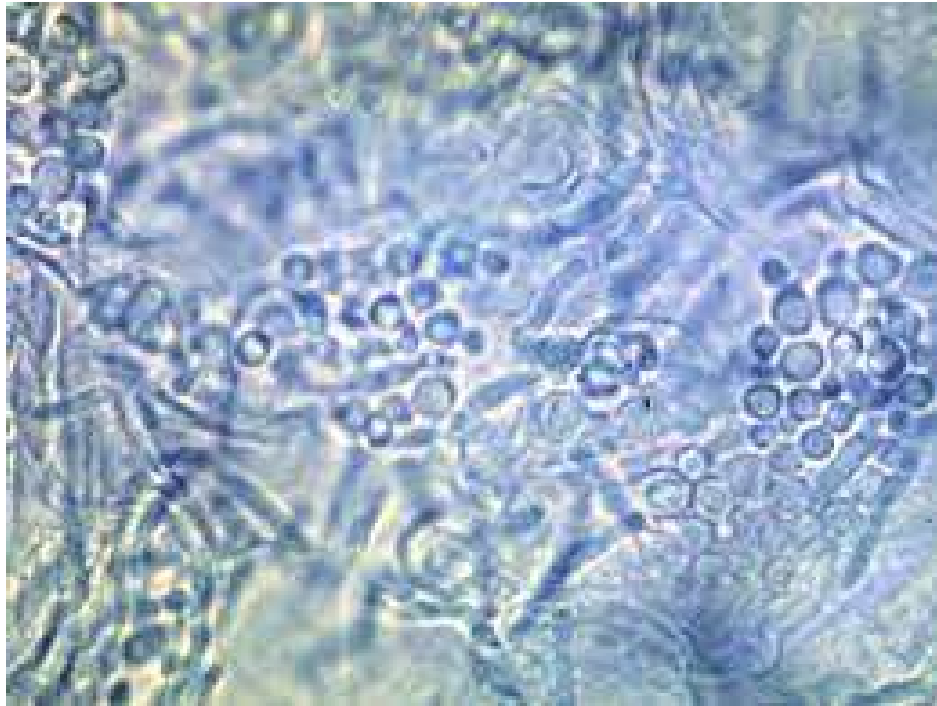
Multiple septate hyphae on a background of squamous cells in a KOH preparation taken from the site of a dermatophyte infection.



Pseudohyphae of *Candida* with budding yeasts in a KOH preparation. Pseudohyphae are chains of elongated yeast cells that fail to detach after budding.



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- A. Short hyphae and spores → malassezia furfur (tinea versicolor)
- B. Pseudophyphae → candida albicans (intertrigo)
- C. Hyphae → hyphae of uniform width are pathognomonic for fungal infection (dermatophyte infection)**
- D. Narrow based budding yeast → cryptosporidium
- E. Broad based budding spores → blastomycosis



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Website for images used in this presentation:
UAB Digital Dermatology Atlas
<https://sites.uab.edu/dermatologyatlas/>





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