

Painful Scalp Nodules on an Active-Duty Sailor

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ABSTRACT

Lesions of the scalp can present a challenging differential diagnosis to the primary care provider, especially in remote military settings where specialist care is not immediately available. Scalp lesions can be painful and disfiguring, and cause duty limitations if they interfere with the donning of personal protective equipment such as helmets, hardhats, or firefighting gear. We present a case of dissecting scalp cellulitis on an active-duty Navy Sailor who was leaving on an extended underway period on his ship the next day.

KEYWORDS: *dissecting scalp cellulitis; diagnostics; dermatology; scalp lesion*

Introduction

Military primary care providers face unique challenges compared with those of their civilian counterparts. Not only do they diagnose and treat a wide range of medical conditions, but they also must weigh how the condition or treatment will affect the ability of the member to carry out his or her military duties. Military members serve globally and often in remote and austere environments. Occasionally, military members arrive days or even hours before an extended deployment period, placing military providers in a position of having to make quick decisions about their suitability for duty. Considerations must be made for available supplies, medications, and equipment, as well as ability to consult with specialists while in deployed settings. Operational considerations may limit the provider's ability to communicate with higher echelons of care or coordinate medical evacuations (MEDEVAC).

Case Presentation

A 22-year-old, white, active-duty Sailor arrived at a Navy primary care clinic with a 3- to 4-month history of cysts on his head (Figure 1). The lesions were painful and occasionally would drain while he was showering. He did not receive any treatment before arriving in the Navy clinic. The patient reported no prior history of scalp lesions, and his past medical history was only significant for acne vulgaris in his teens, treated with oral isotretinoin. He denied other systemic complaints.

On examination, the patient was afebrile with stable vital signs. He had approximately seven flesh-colored, 1–2cm nodules on his posterior scalp that were fluctuant and painful to

FIGURE 1 Scalp lesions on case patient.



the touch. Some lesions had overlying draining sinuses. No scalp erythema or scale was present. The patient had no cervical lymphadenopathy and the rest of the physical examination was unremarkable.

Based on his history and examination, the lesions were diagnosed as dissecting cellulitis of the scalp (DCS). The patient was referred to the dermatologist, who was able to see him the same day, given the patient's pending underway assignment. Two of his largest and most bothersome lesions were treated with incision and drainage. The incision was performed with a 4mm punch biopsy, and the contents of the lesions were gently expressed. The punch sites were then sutured closed with simple-interrupted, nonabsorbable suture for expedited healing. He was prescribed topical benzoyl peroxide wash and oral rifampin and clindamycin daily. The patient was able to get underway the next day on his ship and was to follow-up with his Independent Duty Corpsman in 7 days for suture removal and follow-up in the dermatology clinic when his ship returned the next month.

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Discussion

DCS is a rare disease that most often affects young black men. Multiple inflammatory nodules are concentrated on the crown, vertex, and occipital scalp. The nodules may change into boggy, fluctuant, oval or linear ridges with purulent discharge. They may or may not be painful. If left untreated, and sometimes despite treatment, the nodules may develop dermal fibrosis, sinus tract formation, and hypertrophic scarring, and permanent hair loss may result.¹

DCS, also known as perifolliculitis capitis abscedens et suffodiens, or Hoffman's disease, presents on the scalp with nodules, perifollicular pustules, abscesses and sinuses that may develop into scarring alopecia. Cases of DCS have been reported globally. In the United States, the majority of cases occur in black men between the ages of 20 and 40 years. More rarely, DCS can also occur in other races and women. DCS is considered a component of the follicular occlusion tetrad, a group of four disorders (hidradenitis suppurativa, acne conglobata, DCS, and pilonidal sinus) thought to have follicular occlusion as a key pathogenic event.²

DCS was first described by Spitzer, who termed the disease "dermatitis follicularis capitis et perifolliculitis conglobata" in 1903.³ Hoffman, in 1908, termed the disease "perifolliculitis capitis abscedens et suffodiens."⁴ Barney, in 1931, was the first to use the term "dissecting cellulitis" to describe the disease.⁵

The pathogenesis of DCS is not well understood. It is thought that the retention of keratinous material leads to follicular dilation and rupture, inciting an inflammatory reaction in the skin of the scalp. The lesions become chronic and may become superinfected by bacteria. The disease is chronic, progressive, and may be treatment resistant. Extensive hypertrophic or keloidal scarring of the scalp may result.⁶

A limited differential diagnosis for DCS includes folliculitis decalvans, fungal kerion, pseudopelade of Brocq, folliculitis decalvans, squamous cell carcinoma, and acne keloid. Bacterial and fungal cultures should be obtained to rule out superinfection. Dermatopathology of DCS demonstrates early follicular plugging and suppurative follicular and perifollicular abscesses with mixed inflammatory infiltrate. Later stages often show foreign-body giant cells, granulation tissue, and scarring with sinus tracts.⁷

Like many dermatologic conditions, DCS is likely a reaction pattern rather than a disease caused by a single entity. This is presumably why multiple treatments have differing levels of success for various patients. Mild cases may respond to topical treatments such as clindamycin, chlorhexidine, or benzoyl peroxide in combination (with or without oral antibiotics). Based on a review of the literature² and the authors' experience treating DCS in the military, we propose one of the following treatments to be started by primary care providers in remote locations while awaiting specialty care:

- Trimethoprim 160mg/sulfamethoxazole 800mg twice daily
- Ciprofloxacin 500mg twice daily
- Minocycline 100mg twice daily

- Zinc sulfate 135–220mg 3 times daily
- Clindamycin 300mg and rifampin 300mg twice daily (last line of defense)

In addition, these patients should avoid pomades, hair gel, or other potentially occlusive hair products. If possible, they should avoid wearing headgear as well. Further treatments from specialists (i.e., dermatology) may include isotretinoin, laser hair removal, tumor necrosis factor- α inhibitors, incision and drainage of lesions, or surgery.

Most of the first-line treatments can be initiated by primary care providers. For providers in the field, such as combat medics and corpsmen, incision and drainage can provide pain relief for patients with DCS but does not change the course of the disease. Treatment failures (>3 months receiving first-line medications without control or improvement) should prompt expert consultation to a dermatologist and consideration for MEDEVAC. Inability of the Servicemember to don personal protective equipment such as helmets or masks necessary in theater despite treatment should also prompt the provider to consider MEDEVAC. As with other dermatologic conditions (e.g., atopic dermatitis), the risk for bacterial or fungal superinfection exists, and any localized infection concerning for systemic spread should receive MEDEVAC deliberation as well.

Outlook

DCS, although rare, presents a unique challenge to primary care providers in the military, especially those in remote and/or austere locations. The disease can be painful, disfiguring, and embarrassing to military personnel and may interfere with their ability to carry out their specific military assignments. Certain systemic treatments (e.g., tumor necrosis factor-inhibitors) may threaten a Servicemember's deployability or continuation of military service. Starting treatment early and prompt referral to a dermatologist are essential in this chronic and difficult-to-manage disease.

Disclosures

The authors have indicated they have no financial relationships relevant to this article to disclose.

Author Contributions

ECS is the first author and conducted the literature review. KW reviewed the article and was the editor of content.

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