Surgical Management and Reconstruction of Hoffman’s Disease (Dissecting Cellulitis of the Scalp)

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Abstract

Educational Objective: At the end of this presentation, the participants should be able to 1) identify the key clinical features of Hoffman’s disease, of an extremely rare dermatologic condition also known as dissecting cellulitis of the scalp; and 2) recognize surgical treatment options for patients with disease refractory to medical management.

Objectives: 1) Identify the key clinical features of Hoffman’s disease, of an extremely rare dermatologic condition also known as dissecting cellulitis of the scalp; and 2) recognize surgical treatment options for patients with refractory disease.

Study Design: Case report and review of the literature.

Methods: Report of 2 cases of dissecting cellulitis of the scalp treated by surgical excision and split thickness skin grafting with associated review of the literature.

Results: Two patients presented with severe dissecting cellulitis of the scalp resulting in numerous persistent abscesses and fistula tracts within the hair bearing scalp. Both had failed prior treatment including topical antibiotics, isotretinoin, oral antibiotics, oral steroids, intravenous antibiotics, and immunomodulators including Humira. Due to their failure to respond to maximal medical therapy, they were determined to be surgical candidates. They underwent serial partial thickness skin flap excisions to levels deep to their disease process (galeal and subgaleal) with subsequent split thickness skin grafting. Six months after completing treatment both remain disease free with no evidence of recurrence.

Conclusions: Dissecting cellulitis of the scalp is a severe form of folliculitis resulting in recurrent abscess and fistula tract development within the hair bearing scalp. For patients with refractory disease, excision with split thickness skin grafting is a surgical treatment option that can result in cure.

Introduction

Dissecting cellulitis of the scalp (Hoffman’s disease, or perifolliculitis capitis absoluta et suppurativa) is a chronic inflammatory condition characterized by recurrent supplicative and tender pustules, sinus tract formation and often leading to scarring and alopecia.1 It is part of the “folicular occlusion triad”, along with acne conglobata and hidradenitis suppurativa and occurs most frequently in adult black men between the second and fourth decade of life.1 It may be associated steroidal or androgenetic hyperkeratosis, polyarticular arthritis or HLA-B27 negative spondyloarthropathies2 and there may be an increased propensity for squamous cell carcinomas to arise in the setting of dissecting cellulitis.3

Case Report

A 20-year-old Hispanic male presented to the Mayo Clinic with multiple scalp cysts associated with significant pain was diagnosed with dissecting cellulitis of the scalp. He was initially managed with a combination of Sulfamethoxazole/Trimethoprim, Cephalexin and most successfully Ciprofloxacin. Steroids were avoided due to a history of Diabetes Mellitus. In addition, he was prescribed Dapsone and Isotretinoin and also received Xenograft injections for local control of the scar tissue. Following the failure of these medical interventions, a staged resection of the diseased scalp was recommended. The surgical dissection was performed just superficial to the galeal level, avoiding the occipital muscle and temporoparietal fascia. Wet-to-dry dressings were used to create a granulation base, followed by partial-thickness skin grafting (0.15mm thick) in a second procedure. At a 6-month follow-up, the patient remained disease free.

A 58-year-old African American male (Figure 1) was referred to the Otorhinolaryngology service from the Dermatology Department for evaluation of extensive dissecting cellulitis of the scalp and posterior neck. His disease was refractory to several courses of clindamycin, rampicin, metronidazole, dapsone, isotretinoin and Adalimumab. Due to the scale of the disease, 2 separate two-staged procedures were performed, both involving resection of the diseased scalp followed by a second operation for skin grafting (Figure 2). The patient’s disease extended beyond the level of the galea, requiring a subgaleal resection with preservation of the peristomeum. A wet-to-wet dressing was applied post resection, to encourage granulation tissue formation. The lateral thigh and anterior thigh were used as donor sites for the first and second reconstructive procedures respectively. A vacuum-assisted closure dressing was used to encourage graft take. At a 6-month follow-up, the patient remained disease free (Figure 3).

Discussion

The most likely pathogenesis of dissecting cellulitis of the scalp involves follicular hyperkeratosis causing occlusion of the follicles. These can rupture, leading to a neutrophilic and granulomatous inflammatory response.1 Histologically, dissecting cellulitis is characterized by acinenform distension of the follicles with perifollicular inflammation early in the disease process. Late stage disease is typified by follicular destruction by inflammatory cells with deep-seated abscesses in the adventitia dermis and subcutis that ultimately lead to sinus tracts surrounded by dense fibrosis.2

Medical treatment options include any combination of improved scalp hygiene, antiseptic, topical antibiotics, lesional aspiration, oral antibiotics, corticosteroid injections, and/or isotretinoin for mild disease.2,4 For severe disease, antibiotics and rifampicin with or without corticosteroids have been shown to be effective in some cases. Similarly, adalimumab has been shown to achieve clinical remission after 8 weeks with some evidence of residual pathological changes. However when treatment was terminated the symptoms returned.5

For severe, intractable, and refractory cases, surgical management is an option. Our experience supports prior reports of disease eradication with partial thickness scalp resection.1,2,6 Scalp resection is performed to a level just deep to the disease, usually galea or just subgaleal. It is crucial that at the least the peristomeum is preserved so that there is a base upon which reconstruction can be performed. Excellent aesthetic outcomes can then be achieved with reconstruction by split-thickness skin grafting. We prefer to perform this in a separate procedure after culturing a base of granulation tissue to increase likelihood of complete skin graft survival. In our experience, surgical treatment has resulted in complete resolution of disease. There is only one case report of disease recurrence following surgical intervention.6

Conclusions

• Dissecting cellulitis of the scalp is a rare condition mostly affecting men aged 20 to 40.
• It is characterized by recurrent suppurrative and tender pustules and sinus tract formation that may advance to scarring and alopecia.
• Medical management includes the use of antibiotics, corticosteroids, isotretinoin and anti-TNFα medication.
• Surgical excision is an option for cases refractory to medical therapy and severe disease. This involves partial thickness scalp resection to a level deep to the disease, followed by split-thickness skin grafting.
• There may be significant psychosocial comorbidities associated with this disfiguring condition, so earlier resection may be considered.

References