Abstract:
Folliculitis barbae is a common condition of both infective and non-infectious aetiology. It most frequently presents as a superficial folliculitis, with fine pustules appearing at the opening of hair follicles in the beard area, often associated with shaving; known as Bockhart impetigo and usually due to infection caused by Staphylococcus aureus. If untreated, the infection and inflammation can progress, leading to a more deeply seated infection known as sycosis barbae. Perifollicular nodules, termed furuncles, may appear and when these are multiple and coalesce, a deep-seated, communicating, pustulating plaque called a carbuncle develops, often with associated systemic upset. Such an appearance, which can promote incision and drainage, should not, however, be assumed to be solely due to staphylococcal infection. Particularly in the context of a history of close animal contact or a lack of response to antibiotic treatment, a diagnosis of tinea barbae should be considered and investigated. Prompt treatment with antifungal agents and often systemic steroids is required once the diagnosis is made. This will help reduce an exacerbation of the pronounced destruction that results from the immune response to the fungal infection, known as a kerion, which would be compounded by surgical intervention. In this article, we review two such cases and review the investigation and management of the disease.

Case 1
The Dermatology service was consulted by the maxillofacial surgery team to review a 34 year old cattle dealer who had first noticed a ring-like lesion on the right jaw line 16 days previously. It had gradually spread, become itchy and the site became purulent, markedly tender and swollen. He attended his general practitioner who prescribed oral itraconazole and flucloxacillin. The pain, however, intensified and further supplicative areas discharged prompting admission to a local hospital. A diagnosis of bacterial cellulitis was made and the mass on the right jaw line was incised and drained. In addition, intravenous flucloxacillin, benzylpenicillin and metronidazole were commenced and itraconazole discontinued. There was no improvement 2 days later, prompting a change in antibiotic regimen to intravenous Piperacillin/tazobactam and metronidazole and admission to the National Maxillofacial Unit in St. James Hospital. Wound swabs and blood cultures were negative, there was a neutrophil leucocytosis (neutrophils 11.52 x 10^9/L) and CRP was raised (111.4mg/L). Antibiotic treatment with intravenous metronidazole and amoxicillin with clavulanic acid was altered on the advice of Microbiology to flucloxacillin, benzylpenicillin and metronidazole.

Examination revealed a large, indurated, erythematous, boggy mass on the right jaw line and there was purulent discharge exuding from multiple sites with prominent cervical lymphadenopathy. A clinical diagnosis of tinea barbae with kerion formation was suggested. Areas of the indurated, purulent mass were biopsied and specimens sent for histopathology and tissue culture. Fungal spores were identified on direct microscopy following preparation of the tissue sample with a calcoflour white stain. Fungal culture at 37°C resulted in sub-agar growth of chlamydospore and broad and irregular hyphae characteristic of Trichophyton verrucosum. Processing of a second biopsy sample allowed extraction and purification of chromosomal DNA followed by amplification of the 18s rRNA gene. The product was sequenced and an online Basic Local Alignment Search Tool (BLAST) search verified the fungal genome. Treatment with oral terbinafine 250mg daily was commenced, however 2 days subsequently pronounced pain and tenderness persisted. Oral prednisolone at a dose of 30mg daily was therefore added to the regimen. The patient was reviewed in the dermatology outpatient clinic one week later, and a significant improvement noted. Oral prednisolone was weaned over the subsequent 2 months, but oral antifungal treatment was continued for a further 2 months. Seven months later, only mild scarring was evident on the right jaw line.

Case 2
The Ear, Nose and Throat (ENT) team requested Dermatology input for a 54 year old farmer and butcher who had developed a thumb-sized pustular mass within the beard area on the right side of the neck. Six weeks previously the patient had aggravated a newly developed pimple within the beard area while shaving. A rash subsequently developed and his GP commenced a course of oral flucloxacillin and benzylpenicillin. A week later the area had enlarged and was oozing a clear fluid. Bacterial swabs on two occasions were negative. The patient was referred to ENT where the lesion was incised, drained and biopsied. A course of metronidazole and amoxicillin with clavulanic acid was commenced. After two weeks, the area involved had increased in size with marked purulence. Histopathology demonstrated a fungal folliculitis, prompting referral to the Dermatology service.

Examination revealed an indurated, pustular mass on the anterior aspect of the right side of the neck with multiple smaller pustules and scarring posterolaterally. Further bacterial and fungal swabs were taken and itraconazole 200mg...
twice daily was commenced. After a week without improvement, a reducing dose of prednisolone 20mg daily was added and itraconazole continued. A significant improvement occurred over the following three weeks that lessened on steroid withdrawal. Examination revealed a small number of persisting pustules. Itraconazole was prescribed for a further six weeks, and oral prednisolone for a month, followed by clobetasol propionate BP 0.05% w/w (super potent topical steroid) ointment daily for two weeks. Ten weeks after commencement of itraconazole, new pustules continued to erupt within the beard area. A swab was taken and griseofulvin 1g daily was commenced. Six weeks later, only scarring and patchy alopecia were noted on examination. The patient, however, reported intermittent yellow spots occurring within the previously affected area. Swabs were negative but an intermittent bacterial folliculitis was suspected. A two month course of tetracycline 300mg daily resulted in no further episodes and complete clearance of the area.

Discussion

Dermatophytes are fungi that are capable of causing skin infections, known as dermatophytoses and belong to three related genera, Microsporum spp., Trichophyton spp. and Epidermophyton spp. Tinea barbae is an uncommon dermatophyte infection of the bearded areas of the face and neck, in adult males. It was more common prior to the invention of disposable razors when contaminated barbershop blades resulted in infection known as barber’s itch. Trichophyton verrucosum and Trichophyton mentagrophytes are now the most commonly isolated species, while Microsporum canis is less commonly isolated. These are zoophilic dermatophytoses resulting from direct contact with animals in those who are occupationally exposed. They demonstrate an ectothrix pattern of invasion whereby arthroconidia (asexual spores) are present on the exterior of the hair shaft resulting in fluorescence under Wood’s lamp. Invasion also occurs within the hair shaft resulting in destruction of the hair cuticle that results in an inflammatory reaction. Perifollicular, exudative pustules form and because of the large numbers of terminal hairs in beard areas, the result is often a vigorous inflammatory reaction known as a kerion. Unfortunately, incision and drainage are likely to worsen the short and long-term outcome, resulting in additional scarring. Oral prednisolone has been advocated to suppress the inflammatory reaction and thus limit the scarring, although the evidence is largely anecdotal.

Our two cases demonstrate the importance of establishing a clinical diagnosis with special attention given to occupational history, microscopy and fungal culture in the case of purulent facial lesions. It is, however, worth noting that fungal cultures may be negative as in case 2. Once a diagnosis was established in these cases, institution of treatment with oral antifungal agents and oral steroids resulted in minimal scarring in the former, and complete resolution in the later case, although prolonged treatment was required. The isolation of Trichophyton rubrum is also worth noting as, although a rare isolate in the case of kerion, reports have associated it with scarring. We think that it is important to highlight this curable condition which, given its rarity, is sometimes overlooked as a diagnosis and that can be exacerbated by surgical intervention. Table 1 contrasts the infective causes of folliculitis of the beard area and includes a guide to aid with its diagnosis and treatment.