

Acne keloidalis

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This uncommon condition mainly affects dark skinned young to middle-aged men.

Case presentation

A 38-year-old man presented with a five-year history of mildly itchy and occasionally painful firm papules and small nodules on the midline of the lower occipital scalp extending on to the posterior surface of the neck (Figure 1). Individual lesions started as inflamed small nodules that sometimes weeped and crusted over, some with small pustules. The patient picked at them from time to time but more often left them alone. He had no acne elsewhere and his health was otherwise normal.

Minimal improvement was seen after a few weeks of initial treatment with cephalaxin. The patient was then given doxycycline 50 mg twice daily for a month, which he thought helped moderately, although grouped lesions tended to recur within a month of stopping this agent. Injections of triamcinolone acetonide (10 mg/mL) also helped reduce the papules and nodules.

Diagnosis

The diagnosis of acne keloidalis (nuchae) was made.

Differential diagnoses

Lichen simplex chronicus

A patient with lichen simplex chronicus will have papules or plaques of thickened, often darkened, skin as a result of repeated scratching or rubbing. There may also be excoriations, but pustules are not a feature of this condition. Lichen simplex chronicus is seen on various sites of the body that are easily accessible to the hands, and the nape and sides of the neck are commonly affected sites.

The habit of scratching is a feature of this condition but there may be an element of dermatitis or psychiatric factors, particularly anxiety or obsession. It slowly settles with the use of potent topical corticosteroids (betamethasone dipropionate [Diprosone, Diprosone OV, Eleuphrat], betamethasone valerate 0.1% [Betnovate Preparations], mometasone furoate [Elocon, Novasone]) and the requirement to stop scratching.

Scalp folliculitis

Scalp folliculitis more commonly affects men. There are scattered papules and pustules associated with this condition. It is often itchy or sore, so excoriations are common. Scalp folliculitis may be a variant of acne vulgaris. Causative organisms include *Staphylococcus aureus* and *Propionibacterium acnes*. Similar to acne keloidalis it persists for years. It will usually be suppressed with tetracycline-type antibiotics (doxycycline, minocycline [Akamin, Minomycin]) but recur when treatment is stopped.

Folliculitis decalvans

Folliculitis decalvans is another related chronic condition in which scalp folliculi-



Figures 1a (top) and b (bottom). Grouped keloidal papules with a few pustules on the nape of the neck.

tis forms inflamed regions of pustules. This destroys the hair follicles leading to patches of scarring alopecia on various sites on the scalp, often near the vertex. The hairs surrounding these patchy bald areas tend to tuft together (likened to bunches of wheat tied together) with perifollicular inflammation, pustules or crusting. Most often *S. aureus* can be cultured but commensal organisms may also have a role. Progression can often be limited by long-term use of tetracycline antibiotics or other antibiotic combinations.

Tinea capitis

The patchy dryness and alopecia of tinea capitis is usually easily distinguished from acne keloidalis. However, sometimes tinea will involve the hair follicles leading to inflammatory pustules that, if severe, may coalesce and form a boggy mass known as a kerion. If the nape of the neck

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is affected, pustular tinea capitis can be confused with acne keloidalis. Scrapings for fungal culture or a biopsy may be needed to confirm the diagnosis.

Comment

Acne keloidalis (nuchae) is an uncommon condition. It is mainly seen in young to middle-aged adult men. In the USA, it is at least 10 times more common in black

than white men with a prevalence in black men of about 0.5%;¹ however, in a study of 453 American football players, 14%, all of which were black, had acne keloidalis.² In Australia, my experience is that the condition is seen in all races but is much more common in people with darker (olive or dark but not necessarily black) skin types.

On examination, there are persistent

firm smooth papules to small nodules and varying levels of severity of scattered pustules or crusted or excoriated areas, all mainly on the nape of the neck and occipital scalp. It can be painful, tender or pruritic. The keloids may coalesce into band-like areas or plaques a few centimetres in diameter or larger. Sometimes larger abscesses or more chronic discharging sinuses form. Scattered folliculitis may be seen elsewhere on the scalp but is not necessarily prone to forming keloids. Occasionally, very prominent or disfiguring keloid scarring occurs on the neck, mainly in people with dark skin. Acne keloidalis is a very persistent condition that partially responds to treatment but recurs when treatment is stopped.

The cause of acne keloidalis is not clear. It represents a keloidal healing response to persistent inflammatory folliculitis but the cause of the inflammatory folliculitis is not known.¹ Bacterial culture often shows only commensal organisms and the condition is not due to the ingrowing of hairs as seen with pseudo-folliculitis barbae. It has been suggested that acne keloidalis may occur as a result of local injury received during or from very short hair cuts or shaving of the nape of the neck,³ but many patients I see with acne keloidalis do neither. Rubbing from shirt collars or helmets has also been suggested as a cause of the condition. An autoimmune aetiology has also been suggested but the evidence is not convincing.

Treatment

Topical treatment can reduce the severity or time to recurrence of the inflammatory phase of acne keloidalis but does not usually affect the keloids. Topical retinoids, such as tretinoin 0.05% cream (Retin-A, ReTrieve Cream, Stieva-A), adapalene 0.1% (Differin Topical Cream/Gel), isotretinoin (Isotrex Gel) and tazarotene (Zorac Cream), applied for two or more months, initially alone for the first month or in combination with potent

topical corticosteroid creams such as betamethasone dipropionate, are worth trying in milder cases of acne keloidalis.⁴

Although pathogenic organisms responsible for acne keloidalis often cannot be cultured, the inflammatory folliculitis component of the condition generally responds well to oral antibiotics, especially doxycycline 100 mg daily or minocycline 100 to 150 mg daily. If these are not tolerated, erythromycin (E-Mycin Tablets, EES, Eryc Capsules), roxithromycin (Biaxig, Roxar, Roxide, Roximycin, Rulide), trimethoprim (Alprim, Triprim) or, occasionally, cotrimoxazole (Bactrim DS Tablets, Resprim, Resprim Forte, Septrin Forte Tablets) or both clindamycin and rifampicin (Rifadin, Rimycin) may be tried. Their use should be stopped when the inflammatory component of the condition settles – this usually takes one to three months; they are started again when it recurs. Time to recurrence can vary from days to months, but is often only a few weeks.

Generally, I try doxycycline first as it has a slightly better side effect profile than minocycline. Doxycycline can cause a phototoxic eruption (dose dependent, particularly seen at 150 mg daily) and sometimes candidiasis or gastrointestinal side effects. Minocycline can cause the same reaction, although it is less phototoxic, but is more likely to cause headaches or dizziness (dose dependent) and urticaria. It also occasionally causes pigmentation and, very rarely, serious hepatitis or drug-induced lupus erythematosus.

To increase the time to recurrence once use of oral antibiotics has been stopped, topical antibiotics can be tried for minor recurrences – for example, clindamycin lotion (ClindaTech, Dalacin T Topical Lotion, Zindaclin) or combination products with benzoyl peroxide and clindamycin (Duac Once Daily Gel, Clinda-Benz Acne Treatment Kit) applied twice daily, with re-commencement of the oral antibiotic if the acne keloidalis breaks through significantly. The use of topical

antibiotics is only sometimes helpful. If it is not helpful and recurrences occur rapidly it is better to continue oral antibiotic use, titrating the dose to establish the lowest dose needed to maintain control. To assess for recurrence, the drug should not be taken for brief periods every six months. Oral isotretinoin (Oratane, Roaccutane) can clear the inflammatory component of acne keloidalis but the chance of recurrence may be higher than for acne vulgaris. It is used infrequently, partly because of the concern that isotretinoin can encourage keloid formation; however, there is little evidence to support this. Hair removing lasers have also been shown to be helpful in some cases of acne keloidalis.⁵

If treatment for the keloid component of the condition is required, I first usually treat the inflammatory component with oral antibiotics for about one month. Keloidal papules or smaller nodules often partially flatten after corticosteroid injections of triamcinolone acetonide 10 mg/ml (Kenacort-A 10) or betamethasone acetate/betamethasone sodium phosphate (Celestone Chronodose) into each papule. Covering antibiotics such as a tetracycline or cephalexin may be used for a few weeks if there is continuing significant inflammation. For larger keloids, the 40 mg/ml strength of triamcinolone acetonide injections (Kenacort-A 40) can be used. Depending on severity, repeat injections may be needed to achieve best results and because acne keloidalis is likely to gradually recur, further injections may be required. Individual keloid papules and small nodules can be punch excised and sutured with 4/0 silk suture and the patient can be given an injection of corticosteroid at suture removal.

Large disfiguring keloids or severely weeping or crusted areas are rarely seen in patients in Australia, because they occur mainly in people with a dark skin type. Various treatments have been described. The area can be excised and if possible closed primarily.⁶ If this is not possible,

serial excision and primary closure can be attempted. For a large affected area, the options are excision and grafting, or tissue expansion followed by excision, or a large excision with the wound left to slowly granulate and eventually heal (secondary intention healing). These are significant procedures and so are reserved for the worst of cases. Destructive carbon dioxide lasers have also been tried in this situation⁷ but offer little advantage so are only used infrequently. **MT**

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Further reading

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