CASE REPORT

The role of tonsillectomy in psoriasis treatment

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Accepted 9 January 2015

SUMMARY

Psoriasis is a chronic and immune-mediated skin disease with a considerable negative impact on quality of life. The link between psoriasis, especially guttate psoriasis, and streptococcal infections, namely tonsillitis, has been studied for several years. Some authors have also suggested an association with other types of psoriasis, such as plaque psoriasis, which is the most common. The role of tonsillectomy in the treatment of plaque psoriasis is not consensual. This case report aims to discuss this topic. The authors intend to highlight the growing evidence of a relationship between plaque psoriasis and an infectious pathology of the otolaryngology area. A clinical case of severe chronic plaque psoriasis with exacerbations linked to acute tonsillitis is described. The case was recalcitrant to dermatological treatment and tonsillectomy was included in the treatment options. After surgery, the skin disease was evidently controlled and significant improvement on the patient's quality of life was also evident.

BACKGROUND

Psoriasis is a chronic, inflammatory, immune-mediated skin disease. It has a major impact on patients' quality of life. Its severity varies from a few scattered red, scaly plaques to a wide involvement of the body surface. The degree of severity is related to inheritance and environmental factors. Psoriasis is estimated to affect about 2–4% of the population in western countries. The prevalence in children ranges from 0% to 2.1% and in adults it varies from 0.91% to 8.5%. The causes of psoriasis are not well understood, but a number of risk factors are recognised.¹

Plaque psoriasis is by far the most common form of the condition (90% of people with psoriasis).² Some evidence of the association between chronic psoriasis exacerbation and recurrent streptococcal throat infections can be found in the scientific literature. However, there is no consensus about this relationship.

The authors describe a clinical case of severe chronic plaque psoriasis that was resistant to dermatological treatment. The patient suffered from repetitive throat infections accompanied by handicapping psoriasis exacerbations. After tonsillectomy, the patient had no more throat infections and psoriasis was clearly controlled.

CASE PRESENTATION

A 39-year-old man exhibited recurrent and severe throat infections, particularly acute tonsillitis, during the past 2 years. He had 1–2 episodes of tonsillitis per month. All these episodes had sudden onset and were characterised by sore throat, high

fever, enlarged cervical nodes and swollen tonsils with exudates. This was seen in the absence of cough, rhinitis or conjunctivitis. Considering this clinical picture, the risk of bacterial infection was very high and antibiotic therapy was introduced leading to resolution of the infection. Moreover, we could identify the causative organism as a group *A streptococcus* in multiple episodes through rapid immunoassay. The patient had been submitted to multiple antibiotic treatments, especially over the past 2 years. After that period, a tonsillectomy was considered.

This patient also had plaque psoriasis, which appeared for the first time when he was 32 years old. The lesions, sharply margined, dull-red plaques with loosely adherent, lamellar scales, were first localised on the elbows and then on the knees. Two years later, more sites were affected (sacrogluteal region, legs, arms, scalp and abdominal region). All of this had a negative impact on the patient's work productivity and his confidence, provoking considerable psychosocial disability, and he was now being seen by a dermatologist. He had never had arthritis.

More detailed attention was given to the parallelism between throat infections and psoriasis exacerbations. Indeed, it was noted that new lesions, well-defined, reddish and with a loosely silvery-white lamellar scale, appeared when he had tonsillitis.

The patient was under dermatological treatment with phototherapy (psoralen and ultraviolet A therapy), topical (calcipotriol with β -methasone ointment) and systemic drugs (acitretin). However, there was no satisfactory response to these treatments. He developed increased liver function tests, an adverse effect related to acitretin. At this stage, the Psoriasis Area Severity Index (PASI) was 26.8 and the streptococcal infections occurred monthly with severe skin exacerbations.

Owing to these particular clinical features, a tonsillectomy was proposed. The patient was submitted to the tonsillectomy with no complications.

OUTCOME AND FOLLOW-UP

After the tonsillectomy, the patient had no more tonsillitis and psoriasis exacerbations, with stability in the clinical course during 3 months. The patient recovered from the adverse effects. Four months later, the lesions were residual plaques on his elbows. He now had a PASI of 1, requiring only topical treatment.

During the 2 year follow-up period, these residual plaques remained, but he did not have new lesions. The patient is totally satisfied with the surgical option.

To cite: Simões JF, Ribeiro J, Ferreira BR, et al. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-206899

DISCUSSION

This case report aims to focus on the relationship between chronic plaque psoriasis exacerbations and streptococcal infections. There are some studies in this area with beneficial outcomes. The case described by the authors reinforces the growing evidence of that relationship, with therapeutic relevance.

After the tonsillectomy, the psoriasis clearly improved, with a significant reduction of the PASI score and, thereby, the patient's psychosocial disability was obviously solved. Moreover, it was also seen that, after the tonsillectomy, intense drug treatment was no longer needed and the adverse effects the patient had were solved.

In the scientific literature on this topic, it is possible to find strong evidence for the association between guttate psoriasis and preceding or concurrent streptococcal infection, but there are few studies about the role of infections in chronic plaque psoriasis.

In 2001, a systematic review reported a retrospective study of 74 patients with chronic plaque psoriasis. In that study, the authors found that, after a tonsillectomy, a clearance of the skin disease occurred in one-third of patients, while a considerable improvement was seen in an additional one-third.³ In another study, in 2012, Thorleifsdottir *et al* performed the first randomised clinical trial of tonsillectomy in plaque psoriasis. Twenty-nine patients with chronic plaque psoriasis were recruited. After tonsillectomy, their disease course was followed for at least 2 years and the disease severity was assessed. The results showed that 86% of patients who received tonsillectomy had a significant reduction in the PASI score, ranging from 30% to 90%, whereas no improvement was seen in controls. Most patients saw improvement at 2 months and maintained improvement for 2 years.⁴

The association between streptococcal throat infections and, thus, tonsillectomy and plaque psoriasis, was also corroborated in a prospective study. In this study, the authors found that the patients in the cohort reported sore throat 10 times more often than the non-psoriatic controls, and that throat infection with M protein-positive streptococci could cause exacerbation of chronic plaque psoriasis.⁵ Japanese research considers tonsillectomy as a valid treatment option for psoriasis, with 50% of 35 psoriasis patients experiencing improvement after tonsillectomy.⁶ In a study that assessed the presence of recent streptococcal infection, 26% of those with acute guttate psoriasis, 13% with guttate exacerbations of chronic psoriasis and 14% with chronic psoriasis had evidence of group A β -haemolytic *Streptococcus pyogenes* colonisation, compared with 7% of controls.⁷ Indeed, the association between psoriasis and streptococcal infection is probably explained by the 'superantigen theory'. *S. pyogenes* has the M-protein, which acts as a superantigen. Superantigens are products that can bypass normal immunological pathways and cause powerful stimulation of the immune system. This leads to the production of T-lymphocytes, which have been shown to be crucial to psoriasis development.⁸ As explained by Wiggin *et al*, the palatine tonsils may generate effector T cells that recognise keratin peptides in the skin and worsen psoriasis. With removal of the tonsils, the subsequent decrease in skin-homing T cells may result in improvement of chronic plaque psoriasis.⁹

A Cochrane review highlights the fact that the role for tonsillectomy in selected patients with psoriasis remains unclear.⁸ Tonsillectomy should be considered, especially for those patients with recurrent streptococcal infections that seem to trigger or maintain their skin disease. Nevertheless, the strength of evidence is limited and more randomised clinical trials would be necessary to assess the role of tonsillectomy in the treatment of chronic plaque psoriasis.⁹

Patient's perspective

I am very satisfied with the outcome of the treatment along the two year follow-up period. I consider the tonsillectomy as having been an excellent and appropriate option for me, since the relationship between throat infections and psoriasis exacerbation was obvious. I no longer suffer from adverse effects to drugs and it helps me to have my new confidence about my appearance and social life.

Learning points

- Patients with chronic psoriasis should be questioned about throat infections during the clinical history.
- Plaque psoriasis exacerbation can be associated with recurrent streptococcal throat infections.
- Tonsillectomy should be considered a valid treatment option for those cases of psoriasis.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Parisi R, Symmons D, Griffiths C, *et al*. Global epidemiology of psoriasis: a systematic review of incidence and prevalence. *J Invest Dermatol* 2013;133:377–85.
- 2 National Clinical Guideline Centre (UK). *Psoriasis: assessment and management of psoriasis*. London: Royal College of Physicians (UK), 2012.
- 3 Owen CM, Chalmers R, Ó'Sullivan T, *et al*. A systematic review of antistreptococcal interventions for guttate and chronic plaque psoriasis. *Br J Dermatol* 2001;145:886–90.
- 4 Thorleifsdottir RH, Sigurdardottir SL, Sigurgeirsson B, *et al*. Improvement of psoriasis after tonsillectomy is associated with a decrease in the frequency of circulating T cells that recognize streptococcal determinants and homologous skin determinants. *J Immunol* 2012;188:5160–5.
- 5 Gudjonsson JE, Thorarinnsson AM, Sigurgeirsson B, *et al*. Streptococcal throat infections and exacerbation of chronic plaque psoriasis: a prospective study. *Br J Dermatol* 2003;149:530–4.
- 6 Kataura A, Tsubota H. Clinical analyses of focus tonsil and related disease in Japan. *Acta Otolaryngol Suppl* 1996;523:161–4.
- 7 Telfer NR, Chalmers RJG, Whale K, *et al*. The role of streptococcal infection in the initiation of guttate psoriasis. *Arch Dermatol* 1992;128:39–42.
- 8 Owen CM, Chalmers R, O'Sullivan T, *et al*. Antistreptococcal interventions for guttate and chronic plaque psoriasis. *Cochrane Database Syst Rev* 2013;(10):CD001976.
- 9 Wu W, Debbaneh M, Moslehi H, *et al*. Tonsillectomy as a treatment for psoriasis: a review. *J Dermatolog Treat* 2014;25:482–6.

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