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Case report

Peripheral corneal melting syndrome in psoriatic arthritis treated with adalimumab☆

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ABSTRACT

Peripheral corneal melting syndrome is a rare immune condition characterized by marginal corneal thinning and sometimes perforation. It is associated with rheumatic and non-rheumatic diseases. Few cases of peripheral corneal melting have been reported in patients with psoriasis. The pathogenesis is not fully understood but metalloproteinases may play a pathogenic role. Anti-TNF therapy has shown to decrease skin and serum metalloproteinases levels in psoriasis. We report a 61-year-old man with peripheral corneal melting syndrome associated with psoriatic arthritis who received adalimumab to control skin and ocular inflammation. To our knowledge, this is the first case report of peripheral corneal melting syndrome in psoriatic arthritis treated with adalimumab showing resolution of skin lesions and complete healing of corneal perforation in three months.

Síndrome da ceratomalácia (*Corneal Melting*) periférica na artrite psoriásica tratada com adalimumabe

Palavras-chave:
Perfuração da córnea
Artrite psoriásica
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RESUMO

A síndrome do corneal melting periférica é uma rara condição imune caracterizada por afinamento da margem da córnea e, às vezes, perfuração. Está associada a doenças reumáticas e não reumáticas. Poucos casos de síndrome do corneal melting periférica foram relatados em pacientes com psoríase. A patogênese não foi completamente entendida, mas as metaloproteinases podem ter papel patogênico. A terapia Anti-TNF diminuiu os níveis de metaloproteinases na pele e no sangue em psoríase. Reportamos o caso de um homem de 61 anos com síndrome do corneal melting periférica associada à artrite psoriásica que recebeu adalimumabe para controlar a inflamação na pele e no olho. Pelo que sabemos, este é o primeiro caso de síndrome do corneal melting periférica em artrite psoriática tratado com

☆ The case was originated in Servicio Occidental de Salud, Rheumatology section, Cali, Colombia.

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adalimumabe mostrando evolução nas lesões cutâneas e cura total da perfuração da córnea em três meses.

Introduction

Peripheral corneal melting syndrome (PCMS) is a rare immune condition characterized by marginal corneal thinning and sometimes perforation. It is associated with rheumatic and non-rheumatic diseases. The list includes rheumatoid arthritis, Sjogren's syndrome, systemic lupus erythematosus, Wegener's granulomatosis, microscopic polyangiitis, topical non-steroidal anti-inflammatory drugs, pregnancy and psoriasis. Ocular manifestations of psoriasis are rare and extensive. Psoriasis can affect the lids, conjunctiva, cornea and anterior uveal tract. The pathogenesis of PCMS is not fully understood, but metalloproteinases may play a pathogenic role. Anti-TNF therapy has shown to decrease skin and serum metalloproteinases levels in psoriasis and psoriatic arthritis. We report a 61-year-old man with peripheral corneal melting syndrome associated with psoriasis who received adalimumab to control skin and ocular inflammation. Since we know this is the first case report of PCMS in psoriatic arthritis treated with adalimumab.

Case report

A 61-year-old man was referred to our rheumatology service in October 2010 with a four-month history of left blurred vision, photophobia and painful red eye. He had a 6-year chronic plaque psoriasis with arthritis and uveitis.

An ophtalmologic examination revealed a left inferior paracentral perforation. Schirmer's test was 5 mm/5 min and slit-lamp examination did not show cells in the anterior chamber. Due to the severity of the case he was managed with cyanoacrylate glue (Fig. 1) and topical atropine, prednisone plus phenylephrine, carboxymethylcellulose, ciprofloxacine.

Rheumatology evaluation showed swan-neck fingers with ulnar deviation and irreversible limitation in range of motion without inflammatory signs. The physical examination also revealed extense plaques of psoriasis involving the trunk, upper and lower limbs.

Blood count, glucose, liver function tests, CRP were normal, creatinine was 1.44 mg/dL (<1 mg/dL) with blood urea nitrogen: 8.3 mg/dL, and erythrocyte sedimentation rate was 32 mm/h. Rheumatoid factor, anti-CCP, antinuclear antibodies, anti-Ro, anti-La, anti-SM, anti-RNP, HLA-B27 were negative. The hands radiography showed the typical pencil-in-cup deformity.

Two weeks after PCMS occurred we started adalimumab 80 mg followed by 40 mg every other week administered subcutaneously with resolution of skin lesions and complete healing of corneal perforation in 3 months (Fig. 2).

Discussion

Corneal melting syndrome is a rare disease consisting of corneal thinning with ulceration that sometimes leads to perforation.[1] It is most commonly associated with rheumatoid arthritis, followed by Wegener's granulomatosis and microscopic polyangiitis respectively.[2] Other causes include Sjogren's syndrome,[3] systemic lupus erythematosus,[4] topical non-steroidal anti-inflammatory drugs,[5] pregnancy,[6] polyarteritis nodosa and psoriasis.[7]

Psoriasis affects nearly every layer of the eye in approximately 10% of the cases. Ophalmologic features consist of corneal opacities, conjunctivitis, superficial keratitis, chronic iridocyclitis, uveitis and dry eyes.[8] PCMS begins with ulceration and melting of the cornea; without a prompt and appropriated treatment the patient could experience a perforation and finally the loss of vision and integrity of the globe. The disease may be classified by anatomical location: central

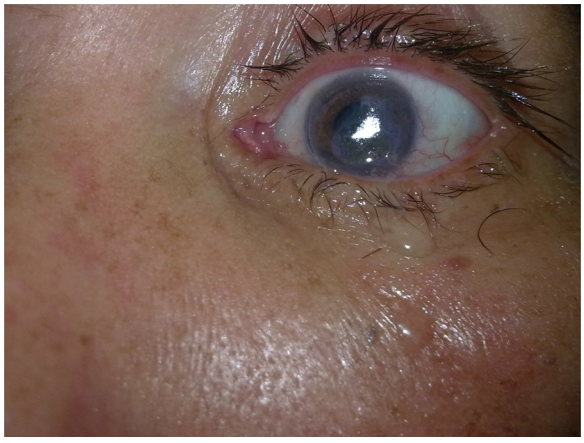

Fig. 1 – Left inferior paracentral perforation occluded with cyanoacrylate glue.

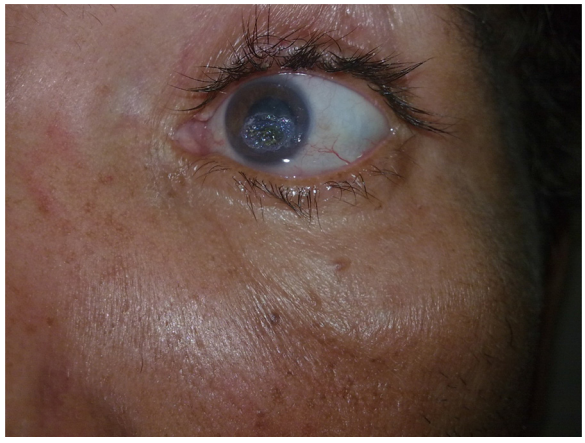

Fig. 2 – Cyanoacrylate glue degradation after complete healing of corneal perforation.

Table 1 – Summary of four cases of PCMS associated with psoriasis.[1,8]

Case	Gender	Age	Location	Perforation arthritis	Psoriasis type
1	Female	62	Peripheral	+	Pustular
2	Male	70	Peripheral	–	Plaques
3	Female	83	Peripheral	–	Plaques
4	Male	61	Peripheral	+	Plaques

and peripheral or by pathogenic mechanism: inflammatory and non-inflammatory. Four cases including ours have been reported (Table 1).

The pathogenesis of PCMS is still unclear. PCMS can be initiated by local factors including ophthalmic vasculitis, ocular surface disease like corneal infection and sicca syndrome. Increased levels of matrix metalloproteinases 1, 2, 3, 9 in melted corneal specimens have been found.[9] The production of metalloproteinases can degradate basal membrane components of the cornea leading to ulceration and finally perforation. It is rational the treatment with adalimumab since anti-TNF therapy has demonstrated to decrease the expression of metalloproteinases in skin and serum of patients with psoriasis and psoriatic arthritis.[10,11] Local treatment of PCMS consists in the use of cyanoacrylate glue which can effectively seal small corneal (<3 mm diameter) and uncomplicated perforations and the mean duration for glue in situ was 45–72 days.[12]

Finally, we believe that despite PCMS in psoriasis and psoriatic arthritis is rare, the role of metalloproteinases in corneal destruction suggests that this complication during the course of psoriatic arthritis could be a causal association. More research is needed to determine whether the use of anti-TNF therapy could be useful in accelerating corneal healing PCMS in psoriatic arthritis.

Conflicts of interest

The authors declare no conflicts of interest.

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