Case report

RELAPSING POLYCHONDRITIS: PRESENTATION OF THREE CASES AND DISCUSSION OF THERAPEUTIC REGIMENS

R. Dummer, D. Zillikens, M. Burger and G. Burg

ABSTRACT

Three patients with relapsing polychondritis (RP) are presented with interindividually different features. In the first patient joint pain, cartilaginous inflammation of one ear, ocular involvement as well as vestibular symptoms were present. The second suffered from reddening of both ears and arthralgia, whereas the third presented with nasal and auricular inflammatory episodes. Each patient profited from a different, individually adapted treatment modality, including prednisolon, dapsone, azothioprine and piroxicam.

KEY WORDS
relapsing polychondritis, type II collagen, immunosuppressive treatment

INTRODUCTION

Relapsing polychondritis (RP) is a rare, at times fatal disease presenting with inflammatory destruction of cartilaginous structures. Its clinical course is episodic and progressive. On an empirical basis, diagnostic criteria have been established including recurrent auricular or nasal chondritis, a non-erosive, inflammatory polychondritis, involvement of ocular structures such as uvea tract, cornea, conjuctiva, sclera and episclera, cochlear and/or vestibular damage. The combination of either at least three of those symptoms, or one clinical feature together with a positive biopsy, or chondritis in two or more different anatomical sites with a therapeutic response to corticosteroids are regarded as diagnostic (1).

There is a well documented association of RP with rheumatic and autoimmune diseases such as rheumatoid arthritis or systemic lupus erythematosus, systemic vasculitis including glomerulonephritis (1,2). Recently, the coincidence of RP and myelodysplastic syndrome (3) has been reported suggesting that RP could be a rare paraneoplastic syndrome, too. The pathogenesis of RP still remains unclear. Microscopic findings of the involved cartilage demonstrate a loss of the usual metachromasia, necrosis, calcification and acute and

chronic inflammatory reactions (4). A possible role of immune complexes is suggested by the immunofluorescent findings of granular deposits of immunoglobulins G,A,M and complement C3 at fibrochondral junctions (5). Epitope specific anti-human Type II collagen antibodies were found in serum samples of patients suffering from RP and rheumatoid arthritis. The specific immune response against collagen type II is proposed to play some role in the development of this disease (6).

We report three cases of RP and discuss treatment options.

CASE REPORTS

Case 1

A 63-year-old man was admitted to the hospital because of a reddening and swelling of the left ear. History revealed a febrile cervical lymphadenopathy a few months before admission with an increased erythrocyte sedimentation rate (ESR) which was treated with penicillin. The patient complained of itching conjunctivitis, vertigo and loss of hearing on the left side. There was a history of myalgia and arthralgia resembling polymyalgia rheumatica. Histology showed a perichondral mononuclear infiltrate. Direct immunofluorescence was negative. No involvement of other organs was detected.

The laboratory findings included a ESR of 40 mm/h, antinuclear antibodies (titer 1:160), but no antibodies against type II collagen. The antistreptolysin and antihyaluronidase antibody titers were within the normal range. The inflammation resolved promptly during steroid treatment (50 mg prednisolon per day).

After slow reduction of the daily steroid dose to 12.5 mg prednisolon the inflammation involving ear and eyes relapsed. Additional treatment with azathioprine had no steroid saving effect, but by adding dapsone (100 mg/d) to the steroid therapy the daily dosage could be reduced to 5 mg prednisolon per day. After six months of therapy, cessation of the treatment resulted in new disease activity. The treatment was reinitiated with both drugs which again controlled the disease.

Case 2

A 48 year old man had been suffering from arthralgia, redding and swelling of both ears for more than 6 months, which had been interpreted as gout. X-ray and ultrasound did not reveal internal involvement. Two weeks after initiation of a diet, slightly elevated uric acid serum levels returned to normal range.

ESR was 50 mm/hr. No antinuclear antibodies or antibodies against type II collagen were detected. A reddening and deformation of both ears (Fig. 1) accompanied by an episcleritis caused hospitalization and clinical diagnosis of RP. Treatment with 5o mg prednisolon succeeded. After reduction to 20 mg per day, inflammation relapsed. The addition of dapsone did not show any steroid-saving effect. However, after addition of azathioprine (100 mg/d), the steroid dose could be reduced from 20 mg to 5 mg prednisolon daily three weeks. After six months first prednisolon, later azathioprine were stopped. The disease did not relapse for six months.

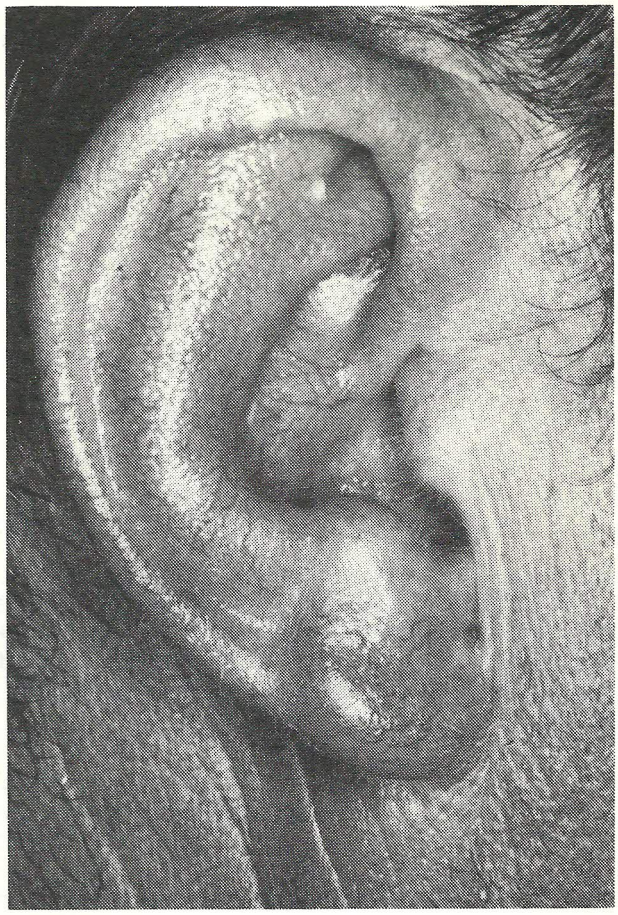

Figure 1: Reddening, swelling and beginning deformation of the right ear of patient 2.

Case 3

Four years before diagnosis a 52-year-old man had suffered from recurrent inflammatory episodes of nasal cartilage, which caused the development of a saddle nose. He complained of episodes of arthritis. Two years before diagnosis, inflammation of the right ear appeared. A penicillin therapy was initiated, but swelling resolved only very slowly. Within the next two years six more episodes were treated by intravenous penicillin, before simultaneous swelling and reddening of both ears lead to a biopsy which showed perichondral inflammation corresponding well to RP. The patient had no arthralgia or eye symptoms. Laboratory analysis revealed slightly elevated ESR, but no antinuclear antibodies. Serology did not demonstrate elevated ASL or AHT titers. He was treated with piroxicam, a non-steroid antiphlogistic drug. Two weeks after initiation of this therapy the local inflammation resolved. An attempt to stop piroxicam resulted in a new inflammatory episode of the right ear, which was treated with short-time steroids and piroxicam. In order to avoid new relapses, the patient is still on piroxicam.

DISCUSSION

The presentation of our patients demonstrates that the diagnosis of RP especially in early disease is sometimes difficult to establish. In case of involvement of only one ear, erysipelas has to be considered as an important differential diagnosis.

Because of the episodic clinical course of this autoimmune disease, there is often a coincidence of penicillin therapy and decrease of cartilaginous inflammation. This has supported the misdiagnosis erysipelas in one of our patients. A careful history regarding inflammatory activities in other cartilaginous structures, in joints or ocular symptomes and the assessment of anti-streptolysin or anti-hyaluronidase antibody titers can help to avoid misdiagnosis.

RP can decrease life expectancy by involvement of the respiratory tract, the aortic valve, complications of treatment or additional connective tissue disease. Internal complication can appear prior to or, simultaneous to, but also years (7) after active disease in other cartilaginous structures. Therefore, these patients have to be monitored regularly, although there are no clinical signs of disease activity. Some of the deaths reported are related to aggressive infections during corticosteroid therapy, but the requirement for steroid per se does not affect the individual outcome. A definitive benefit of any treatment modality has not been proven yet (8).

Because of the well-known complications during a long-term therapy with corticosteroids, alternative drugs are required. Immunosuppressive agents such as azathioprine might be helpful in reducing the steroid doses necessary for suppression of inflammatory activity as shown in case 2. There are also reports of successful therapy with cyclophosphamide (9) in a case with renal involvement or with dapsone (10). However, other investigators did not find any benefit in dapsone therapy (11). With regard to cyclosporine controversial reports concerning its efficacy exist too (12, 13). The clinical course of our three patients is quite variable, and so is the response to different treatment modalities. Although one patient seems to profit from dapsone therapy (case 1), there was not response to dapsone in another patient. In this patient the addition of azathioprine was successful (case 2). In the third patient with a mild clinical course, inflammatory episodes seemed to be suppressed by non-steroidal anti-inflammatory drug. Nevertheless, the therapeutic efficacy of different drugs is hard to assess because of the tendency of RP to spontaneous regressions.

Considering the risks and the benefits of an immunosuppressive therapy, we suggest a non-aggressive, individually adapted treatment plan, until a controlled clinical trial has demonstrated the benefit of aggressive immunosuppressive treatment modalities.

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