ABSTRACT
Cranial neuropathy is an uncommon manifestation of relapsing polychondritis (RPC). Optic neuropathy is the most common type of cranial nerve involvement in RPC. Until now, trigeminal neuralgia (TN) has been reported with different rheumatic diseases, however, there is no reported case of TN associated with RPC. We here present a case of RPC with TN. A 57 year-old female patient previously diagnosed with rheumatoid arthritis (RA) and RPC presented us with polyarthritis, auricular and nasal chondritis, and TN. Cranial MRI and MRI angiography of the brain did not show any pathology. The patient partially responded to RA therapy; and carbamazepine and etanercept were administered. RA-related joint findings, her chondritis and TN symptoms improved completely with etanercept. We presume that the TN was caused by compression of the trigeminal nerve from inflammation or ischemia secondary to vasculitis.

Introduction
Relapsing polychondritis (RPC) is a rare systemic condition characterized by recurrent, widespread chondritis of the auricular, nasal and tracheal cartilages (1). In about 40% of cases, RPC is associated with other rheumatic, inflammatory, or hematological disorders including rheumatoid arthritis (RA) (2). In addition, RPC and RA share several clinical symptoms and signs like polyarthritis and ocular involvement. Neurologic findings rarely occur in RPC. The most common manifestation is cranial nerve palsies (3). Optic neuropathy is the most known neurologic complication of RPC (3). Until now, trigeminal nerve involvement has not been reported in RPC. We here present a case with RA together with RPC who had active arthritis, auricular chondritis and trigeminal neuralgia (TN). The patient’s TN symptoms did not respond to carbamazepine, but improved completely with the TNF-blocker agent, etanercept.

Case report
A 57-year-old woman came to us with complaints of pain and redness in her right ear; severe, sharp and shooting right-sided facial pain; and symmetric polyarthritis in October 2005. Facial pain was associated with numbness of the right side of her cheek. She had a six-year history of symmetric polyarthritis and reported severe morning stiffness. In 2002, seropositive RA was diagnosed, and sulphasalazine, low dose corticosteroids and nonsteroidal antiinflammatory drugs were given. In 2004, methotrexate was added to therapy because of active arthritis and the dose was rapidly titrated up to 15 mg weekly. The patient had had many bouts of redness, pain, and tenderness of her ears, nose and trachea since 2003. There was also a history of hypertension for which she had been treated with ramipril. There was no history of alcohol and smoking.

On physical examination of the peripheral joints, there were bilateral synovitis of the wrists, metacarpophalangeal joints, knees and ankles. There was also limitation of range of motion of her knee joints. She had redness, pain and tenderness of the right ear, sparing the earlobe. In addition, there was a tender, edematous, red area under the right eye close to the bridge of the nose and the area above the trachea was tender to palpation. Her neurological examination was normal. Other features of RP, including cardiovascular manifestations were absent.

The laboratory data showed; erythrocyte sedimentation rate, 74 mm/hr; CRP, 6.2 mg/dl; hemoglobin, 10.6 g/dl; leucocytes, 6700/mm³; platelets, 345000/mm³, other biochemical tests and urinanalysis were in normal ranges. The rheumatoid factor was positive, antinuclear antibody, ANCA, hepatitis B and C serologies were negative. There were bone erosions of bilateral wrist and metacarpophalangeal joints on hand x-ray. A magnetic resonance imaging and magnetic resonance angiography of the brain were performed to rule out secondary causes of her TN. These images did not show any lesions that could explain the symptoms. Herpes virus infection which is one of the major causes of TN was excluded by serology. The patient had active arthritis and DAS28 score was 5.9; therefore, we...
decided to administer a TNF-blocker. The dose of prednisolone was increased up to 20 mg/day. As her tuberculin skin test was positive, isoniazid 300 mg/day was also given. Carbamazepine was administered because of TN. Joint and chondritis symptoms partially improved. After one month of isoniazid prophylaxis, etanercept therapy was initiated at 25 mg subcutaneously twice weekly for her refractory RA, in addition to methotrexate, sulphasalazine and prednisone. Her corticosteroid dosage was subsequently tapered. The symptoms of TN continued. At the end of the first month, the patient’s joint findings improved dramatically; ESR was 30 mm/hr and CRP, 1.1 mg/dl. Symptoms of residual auricular chondritis and TN disappeared completely, carbamazepine was discontinued on follow-up. Within the first year, the patient used etanercept (25 mg s.c. BIW), methotrexate (15 mg weekly), prednisolone 5 mg/day and there has been no recurrence of her symptoms. During the second year, the patient’s symptoms of auricular and nasal chondritis, arthritis recurred two times whenever she discontinued etanercept; and her symptoms improved on resumption of etanercept. At one of the times when the drug was discontinued, mild symptoms of TN recurred and regressed after etanercept.

Discussion

The pathogenesis of central nervous system disease in RPC is not known; one explanation is that it might be associated with cerebral arteritis (4). In addition, neurologic findings might develop because of compression of cranial nerves secondary to pressure of inflammation (3). Neurosensory hearing loss and vestibular dysfunction due to vasculitis in the vestibular or cochlear branch of the internal auditory artery has been reported in RPC. Recently, RPC patients with optic neuritis have been summarized (3). The authors assumed that vasculitis, pachymeningitis and periostitis were the probable mechanisms of optic neuritis (3).

Although there might be isolated involvement of the trigeminal nerve during the course of some connective tissue diseases, until now, trigeminal nerve involvement in RPC has not been reported. In our patient, TN might have developed as a result of compression secondary to chondritis-induced inflammation. Sometimes, trigeminal neuropathy might be induced by ischemia secondary to vasculitis of the vasa nervosum of the trigeminal nevrate (3, 4). The regression of our patient’s symptoms, especially after etanercept therapy, supports the role of RPC-associated inflammatory process in the development of TN.

Treatment of RPC is not standardized and generally consists of nonsteroidal antinflammatory drugs and/or immunosuppressive drugs like corticosteroids, methotrexate or cyclophosphamide. Immediate symptoms of RPC might be relieved with treatment; but, generally disease progression cannot be prevented with longterm therapy; and prognosis is usually poor (5, 6). Several papers reported on successful treatment of RPC symptoms, including laryngotracheal chondritis with respiratory complications, scleritis, arthritis, and chondritis with anti-TNF therapy (6-9). Our case and the above-mentioned cases all point out that the pathophysiology of RPC is mediated by the proinflammatory cytokine, TNF (5, 6). Recently, it has been reported that one patient who was refractory to multiple immunosuppressive drugs, including TNF-blockers, was responsive to high-dose intravenous immunoglobulin; and the authors concluded that intravenous immunoglobulin could be a therapeutic option in refractory patients (10).

As a result, RPC might involve the cranial nerves, including the trigeminal nerve, by different mechanisms. TNF-blockers might be effective in cases who are refractory to conventional treatment.

References