



## Wegener granulomatosis in parotid fistula and bilateral nasal mass

Parotis fistülünde ve iki taraflı nazal kitlede Wegener granülomatozu

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### ABSTRACT

Wegener granulomatosis (WG) is a vasculitis which otorhinolaryngological involvement is very frequent, but is often diagnosed in the late stage and makes the diagnosis complicated in limited cases without systemic involvement. As it can mortally progress in case of late diagnosis, it is a condition which should be always considered in the differential diagnosis by the ear-nose-and-throat specialists. Herein, we report a limited WG case which manifests itself with parotid gland and nasal involvement and was diagnosed based on the clinical and pathological findings.

**Keywords:** Nasal cavity; parotid gland; Wegener granulomatosis.

### ÖZ

Wegener granülomatozu (WG), otorinolarenolojik tutulumun çok sık olduğu, ancak sistemik tutulumunun eşlik etmediği sınırlı olgularda, tanı konulmasında sıkıntı yaşanan ve genellikle geç tanı konulan bir vaskülitir. Geç tanı konulduğunda ise mortal seyredebileceğinden, Kulak Burun Boğaz hekimlerinin her zaman ayırıcı tanıda göz önünde bulundurması gereken bir hastalıktır. Bu yazıda, parotis bezi ve nazal tutulum ile kendini gösteren ve klinik ve patolojik bulgular ile tanısı konulmuş sınırlı bir WG olgusu sunuldu.

**Anahtar Sözcükler:** Nazal kavite; parotis bezi; Wegener granülomatozu.

Wegener granulomatosis (WG) affecting small and medium veins is a primary systemic vasculitis with necrotizing granuloma.<sup>[1,2]</sup> If left untreated in the early stage involving only the head and neck region, it may progress into a generalized form which also involves the lung, kidney, and other organs. In limited form, prognosis is better.<sup>[3,4]</sup> American College of Rheumatology (ACR) created diagnostic criteria,

which including clinical and laboratory findings, for WG in 1990.<sup>[5]</sup>

In 1992, anti-neutrophil cytoplasmic antibody (ANCA) in blood was accepted as an additional criterion and it was asserted that in the existence of clinical findings and ANCA positivity, WG can be diagnosed without pathological confirmation.<sup>[6]</sup>



The disease can manifest early with limited symptoms such as sinusitis and nasal obstruction and patients may consult at Ear Nose Throat (ENT) clinics. Although it is a rare disease, untreated, it can make kidney and lung involvement by progressing mortally. We present this case of WG involving the parotid area and nasal cavities.

### CASE REPORT

A 60-year-old man was admitted to our clinic with a complaint of flowing wound in right pre- and infraauricular region for two weeks, with sweating, asthenia and fever that were not relieved by antibiotic therapy taken only once. A review of history also revealed nasal stuffiness and rhinorrhea for about one month for which medical treatment (still ongoing) had been administered for sinusitis and nasal polyp diagnoses at two different medical centers. There was no other known medical history. On physical examination, there was a right pre- and infraauricular wound with flowing fistula tract (Figure 1). There were friable masses obliterating both nasal cavities on direct and endoscopic examination (Figure 2). There was no cervical, axillary or inguinal lymphadenopathy on palpation. Endoscopic laryngeal and otoscopic examinations were normal. The patient was hospitalized for further examination and treatment. Written informed consent was obtained from the patient for this report.

Routine laboratory examinations revealed high sedimentation rate (97 mm/hr), high C-reactive protein (CRP) (49.8 mg/L) and moderate leukocytosis (10,990 mm<sup>3</sup>). Hepatitis B surface antigen (HBsAg), hepatitis C virus (HCV) and human immunodeficiency virus (HIV) were

negative. Urinalysis was normal. Cultures of the parotid region discharge and nasal swabs yielded no pathogenic bacterium (acid-resistant bacilli; ARB - including) or fungal growth. Upper and lower abdominal ultrasonography and direct chest radiography were normal. Paranasal sinus computed tomography (CT) showed inferior conchas with soft tissue densities (Figure 3a). A facial MRI T<sub>2</sub> sequence revealed an approximately 13 mm noncontrasted area in the right superficial parotid lobe with linear tubular structures connected to skin corresponding with the fistula tract (Figure 3b).

In order to exclude diseases that can cause chronic inflammation presenting with head and neck involvement, rheumatic and immunological investigations were made. Whereas the anti-nuclear antibody (ANA) value was positive, other immunological markers including antineutrophil cytoplasmic antibody (ANCA) value were negative. Histopathological examination of the nasal mucosal biopsy revealed granulomatous vasculitis (Figure 4). Immunohistochemical stains to differentiate other possible lymphoproliferative malignancies (such as Lymphoma and Langerhans cell histiocytosis) were excluded (Figure 5). With a limited WG pre-diagnosis, he was transferred to an advanced center for further treatment. One month later on follow-up, his



Figure 1. Fistula in the right pre- and infraauricular region.

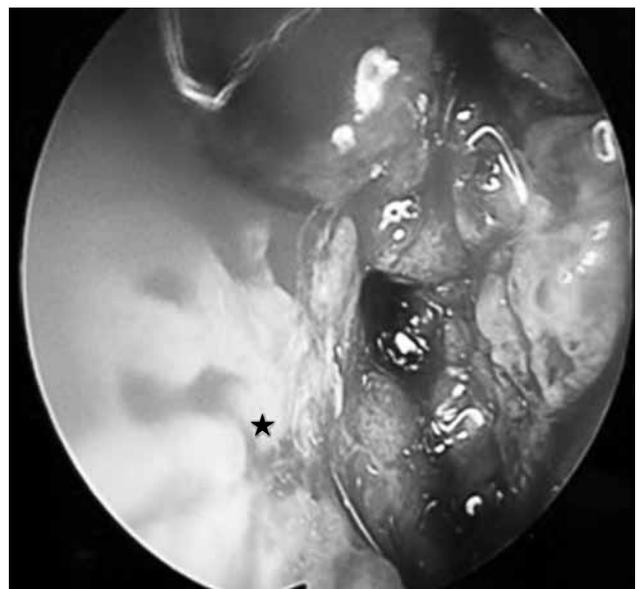
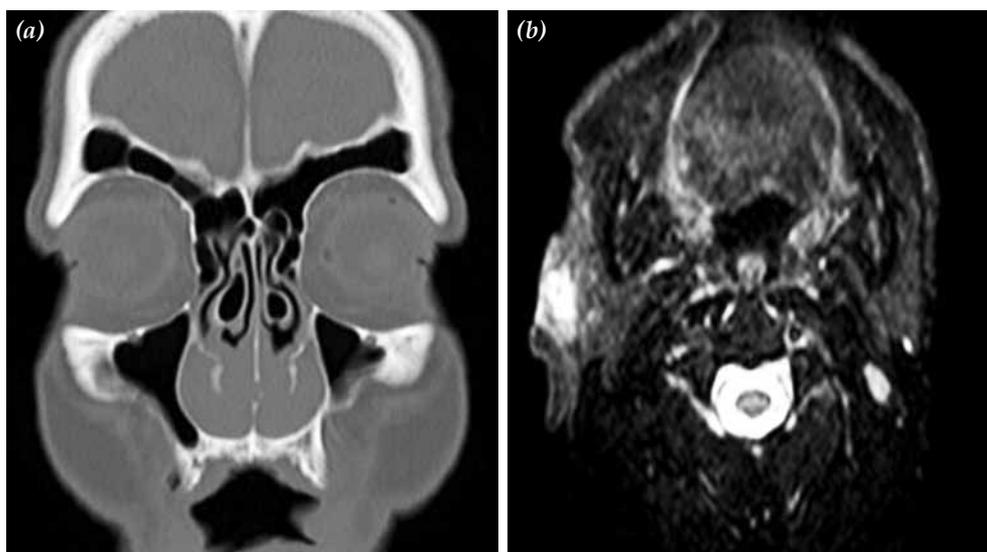


Figure 2. Friable mass obliterating the left nasal cavity.  
★ Nasal septum.



**Figure 3.** (a) Paranasal sinus computed tomography scan, coronal plane showing inferior conchas with continuity of soft tissue density. (b) Facial magnetic resonance imaging (T<sub>2</sub> sequence) showing right parotid salivary gland superficial lobe contrast-enhancing fistula tract compatible with physical findings.

symptoms had regressed under corticosteroid and cyclophosphamide treatment. However, a saddle nose deformity had developed.

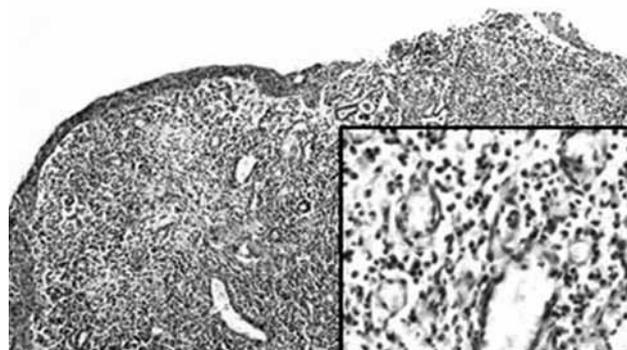
### DISCUSSION

Wegener granulomatosis is chronic systemic vasculitis of small and medium veins of unknown etiology, which presents with granulomatous inflammation, and mostly affects males aged between 40 and 60 years. More than 70% of WG symptoms and findings are associated with the ear, nose and throat.<sup>[7]</sup> Upper airway (sinuses, larynx and oral cavity) involvement is seen at the beginning of the disease, in 70% of patients, during the course of disease. There can be sinusitis and rhinitis that do not respond to routine treatment. Sinus and mucosal inflammation and related sensitivity may be associated with recurrent epistaxis, bloody purulent nasal discharge, oral mucosal ulcers, nasal septal perforation or nasal deformity (saddle nose deformity characteristic for WG).<sup>[8-10]</sup> Saddle nose deformity was not seen initially in our patient, but developed in first month of treatment.

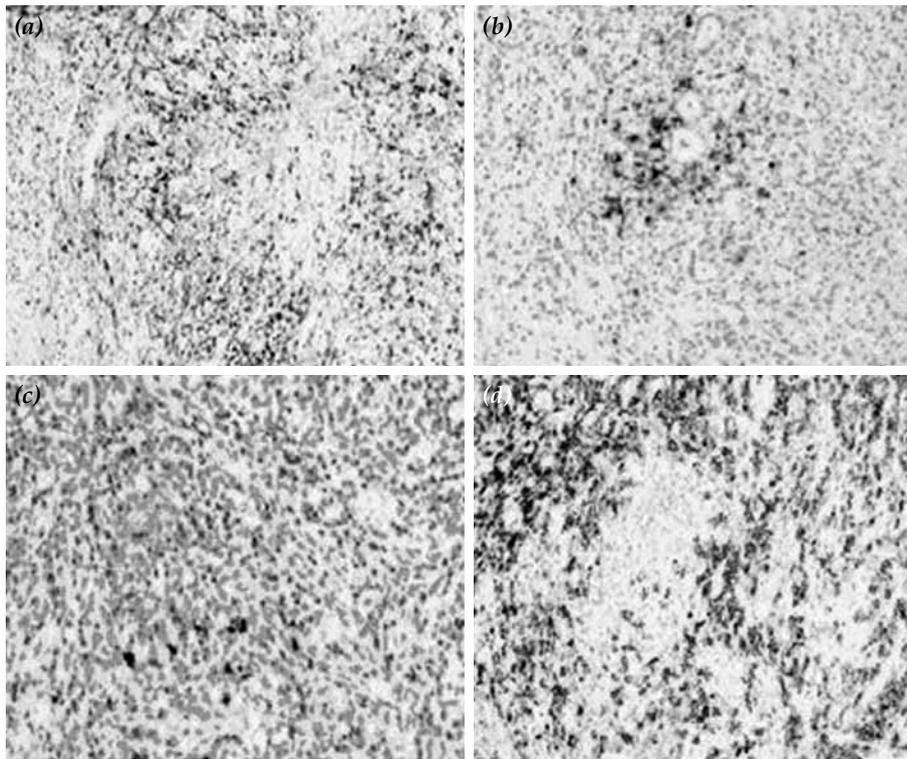
As Chegar and Kelley<sup>[11]</sup> showed, WG can rarely appear with parotid salivary gland involvement. As seen in our case, granulomatous diseases (particularly tuberculosis) should be considered in parotitis cases that are resistant to medical

treatment, especially those with fistulized non-healing wounds. While negative AFB culture in our patient moved us away from tuberculosis, accompanying nasal symptoms and findings focused our suspicion on the possibility of WG.

Laboratory examinations had several indicators of inflammation (high sedimentation, high CRP and moderate leukocytosis) that increase with active disease.<sup>[3]</sup> Cytoplasmic antineutrophil cytoplasmic antibody (c-ANCA) has mostly been used in recent years for diagnosis and activity of WG. If clinical findings



**Figure 4.** Histopathological slide (H-E × 100; inset, H-E × 400), showing ulcerative area, intense inflammation, vascular proliferation, surface squamous epithelium loss, and leukocytoclastic vasculitis.



**Figure 5.** Immunohistochemical Stains (a) CD 3(+) T lymphocytes, (CD3×100) (b) CD 20 (+) B lymphocytes, (CD20×100) (c) CD 68 (+) histiocytes, (CD68×100) (d) CD 38 (+) plasma cells (CD38×100) showing that granulomatous disease and excluding that lymphoproliferative malignancies.

are typical and there is c-ANCA positivity, it is suggested that pathologic evidence may not be necessary for WG diagnosis.<sup>[2,6]</sup> However, as our case showed, negative c-ANCA values do not exclude diagnosis. As the European Vasculitis Study Group asserted, whereas ANCA is positive in 95% of common WG patients, ANCA is negative in approximately 50% of those with localized disease.<sup>[12]</sup> While the positive ANA value in our case supports WG, the negative ANCA value does not exclude its diagnosis.

Necrosis, vasculitis and granulomatous inflammation that are characteristic for WG are revealed at a rate of 16% in head and neck biopsies. Therefore, in such cases where histopathology is reported as atypical inflammatory disease, WG should remain a differential diagnosis.<sup>[13]</sup> As suggested in Fenton and O'Sullivan<sup>[14]</sup> and Moussa's and Abou-Elhmd<sup>[15]</sup> studies, since it is common in the head and neck region, a biopsy should be made from paranasal sinus or nasal mucosa. We also obtained biopsy samples from nasal

mucosa in our case, revealing vasculitis and granulomatous inflammation. Possible lymphoproliferative malignancies (lymphoma, Langerhans cell histiocytosis) were excluded by immunohistochemical staining. We did not see fungi or AFB on Gomori's Methenamine Silver (GMS) stain. Diagnosis of WG was made on the basis of nasal complaints and biopsy results.

Sirouji et al.<sup>[1]</sup> showed that time from consultation with presenting symptoms to the definite diagnosis was >1 month in 92% of the patients. Early diagnosis and appropriate treatment can prevent disease progression, as the disease can convert into a systemic, irreversible form with lung and kidney involvement.<sup>[13]</sup> The diagnosis was made after two months in our case. Patients who consult at health centers with symptoms of the head and neck region have maximum delay. Therefore ENT doctors should be more careful in diagnosis.<sup>[1]</sup>

As in our case, when the patient consults with limited symptoms of WG and rare organ

involvement (like the parotid gland), it is important to have a high index of suspicion.<sup>[16]</sup> For this reason, ENT doctors should not overlook WG in the differential diagnosis of patients with chronic inflammation and head and neck region involvement that is non responsive to medical therapy.

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