Autoimmunity Reviews 12 (2013) 501–505

Contents lists available at SciVerse ScienceDirect

Autoimmunity Reviews

journal homepage: www.elsevier.com/locate/autrev

Review

Otorhinolaryngological manifestations in granulomatosis with polyangiitis (Wegener's)

Matteo Trimarchi [a,*], Renato Alberto Sinico [b], Roberto Teggi [a], Mario Bussi [a], Ulrich Specks [c], Pier Luigi Meroni [d]

[a] Department of Otorhinolaryngology, San Raffaele Scientific Institute, Milan, Italy, IRCCS
[b] Clinical Immunology Unit and Renal Unit, Department of Medicine, Azienda Ospedaliera Ospedale San Carlo Borromeo, Milan, Italy
[c] Thoracic Disease Research Unit, Division of Pulmonary and Critical Care Medicine, Mayo Clinic and Foundation, Rochester, USA
[d] Chair of Rheumatology, University of Milan and Rheumatology Unit, Azienda Ospedaliera Ospedale Gaetano Pini, Milano, Italy

ARTICLE INFO

Available online 23 August 2012

Keywords:
Cocaine
Crusting
Otitis media
Fungal sinusitis
Lymphoma
Septal perforation
Subglottic stenosis
Sarcoidosis
Wegener's granulomatosis
ANCA
Granulomatosis with polyangiitis

ABSTRACT

Granulomatosis with polyangiitis (Wegener's, GPA) is an uncommon disease of unknown etiology classically involves the ELK triad of the ear, nose, throat (E), lungs (L) and kidneys (K) with necrotizing granulomatous inflammation and vasculitis. Most of the initial symptoms begin in the head and neck region with a wide spectrum of involvement of any site ranging from the nasal septum, paranasal sinuses, oral mucosa, larynx and even the external, middle and internal ear. Diagnosis may be delayed because the onset is heterogeneous and sometimes limited to one organ. The pathologic findings of a characteristic inflammatory reaction pattern, and the serum findings of elevated antineutrophil cytoplasmic antibodies can help to establish the diagnosis. The differentiation from other conditions that mimic GPA such as lymphoma and infections is of critical importance to initiate appropriate treatment. Treatment of the underlying disease is medical with the use of immunosuppressive agents and will not be reviewed here. This review focuses on the otorhinolaryngologic manifestation and complication of GPA as well as their surgical management and specifies the role of the otorhinolaryngologist as an integral member of the multidisciplinary care team for patients with GPA.

Contents

1. Introduction

Granulomatosis with polyangiitis (Wegener's, GPA) is an autoimmune disorder of unknown etiology characterized by necrotizing granulomatous inflammation and vasculitis that affects predominantly small vessels [1,2]. Larger vessels are rarely affected [3]. The disease has a predilection for the upper respiratory tract, lungs and kidneys, but any organ may be affected. GPA may remain limited to specific regions, such as the

* Corresponding author at: Dept of Otorhinolaryngology, San Raffaele Scientific Institute, Via Olgettina 58, 20132 Milano, Italy. Tel.: +39 02 26433522; fax: +39 02 26433508.
E-mail address: trimarchi.matteo@hsr.it (M. Trimarchi).

1568-9972/$ – see front matter © 2012 Elsevier B.V. All rights reserved.
http://dx.doi.org/10.1016/j.autrev.2012.08.010

nose and paranasal sinuses, or cause inflammation in various organ systems leading to multiple organ damage and failure [4]. The majority of patients with GPA have circulating anti-neutrophil cytoplasmic autoantibodies (ANCA) [5,6].

The mean survival of untreated generalized GPA is 5 months, and immunosuppressive therapy has improved the prognosis so that it is now a treatable, chronically relapsing disease with a median survival of 21.7 year after diagnosis [4,7].

The approach to care for patients with GPA is interdisciplinary, and firmly places the otorhinolaryngologist on the management team as upper respiratory tract involvement occurs in most patients at some stage in the course of disease [3,4].

When GPA is limited to the upper respiratory tract the differential diagnosis includes infections (spirochetes [syphilis, yaws], mycobacteria [tuberculosis, leprosy], bacteria [rhinoscleroma], fungus [aspergillus]) and other inflammatory conditions (sarcoidosis, Churg–Strauss syndrome, cocaine induced midline destructive lesions) [8,9]. Many of these lesions present with non-specific sinonasal symptoms and may progress rapidly to involve adjacent structures, such as the orbit and skull base, with significant clinical implications for timely diagnosis and management. Thorough diagnostic workup, including endoscopic, radiologic, histopathologic and serologic testing is imperative to arrive at a proper diagnosis and to initiate appropriate local and systemic treatment [10].

2. Nose and paranasal sinuses

Sinonasal involvement is the most frequent manifestation of GPA as it occurs in 85% of patients [11,12]. Nasal obstruction is often the first symptom, and hyposmia or anosmia are frequently experienced when extensive involvement of the nasal mucosa with mucosal swelling is present (Fig. 1a) [13]. Cacosmia may be the result of purulent secretions associated with growth of *Staphylococcus aureus* or *Pseudomonas aeruginosa*. Epiphora may be seen as an early sign caused by involvement of the nasolacrimal duct and the lacrimal sac, due to direct granulomatous involvement, infection, or compression caused by nasal inflammation [14,15].

In active nasal disease, the nasal mucosa displays diffuse hemorrhage, crusting and purulent secretions. These conditions cause nasal obstruction. Nasal mucosal manifestations may be more or less severe, and patients may relate only nasal pain [13]. The most common site of active nasal disease is the anterior portion of the nasal septum, where vessels converge to supply the septal cartilage (Fig. 1b). Nasal septal perforation generally begins in this area and may progress to involve the entire cartilage. On occasion, edema of the mucosa and crusting are so severe that the perforation does not become apparent until the disease is brought into remission and the diseased tissue is absorbed [10]. The remaining mucosa and other structures of the nose, e.g., turbinates, are also frequently affected.

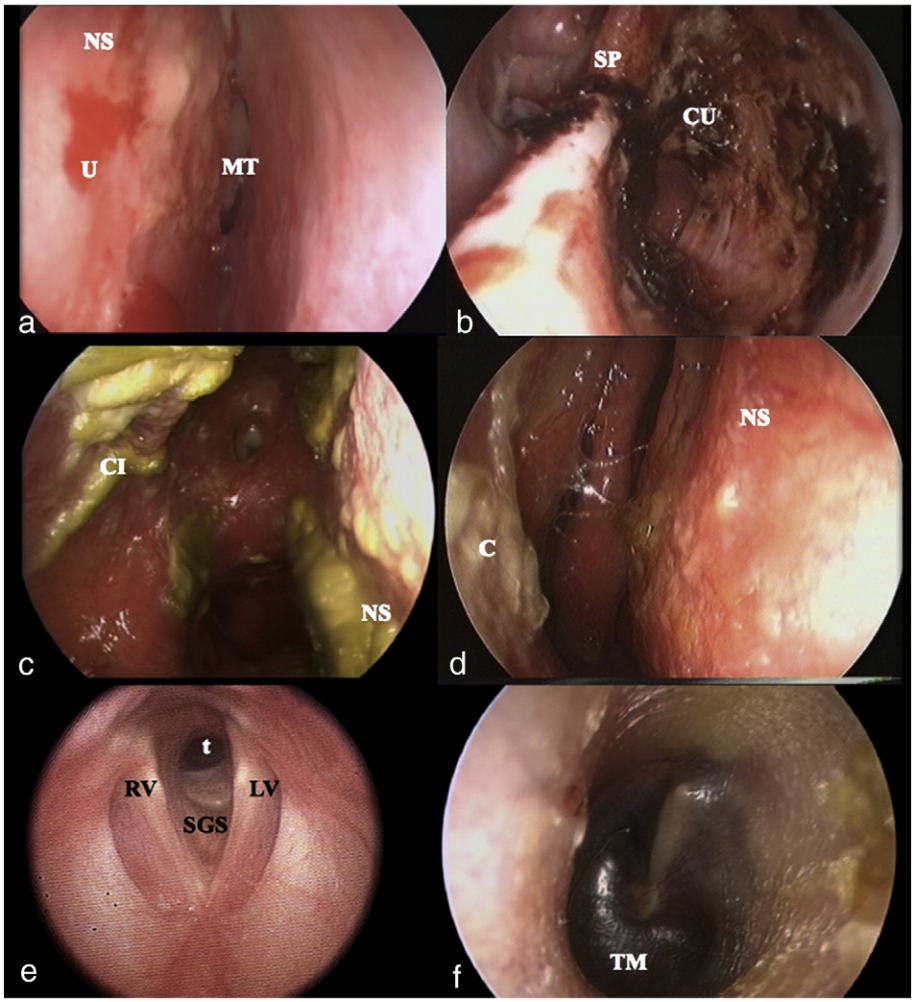

Fig 1. Endoscopic features in GPA patients: a) left nasal cavity with an ulcer (u) on the nasal septum (NS) and the middle turbinate (MT). b) Left nasal cavity with septal perforation and diffuse crusting with ulcers (CU). c) Right nasal cavity showing diffuse crusting with infection. d) Right nasal cavity with crusting in a patient with remission. e) Subglottic stenosis (SGS) with normal right (RV) and left (LV) vocal folds; narrowed tracheal opening (t). f) Serous otitis media, tympanic membrane (MT).