RHINOLOGICAL MANIFESTATIONS OF WEGENER'S GRANULOMATOSIS IN PAKISTANI PATIENTS

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ABSTRACT

Objectives: To assess the rhinological manifestations in Pakistani patients and early diagnosis of Wegener's Granulomatosis

Design of study: Case Series.

Place and Duration of Study: This study was conducted at ENT Department of CMH Rawalpindi in collaboration with Rheumatology Department of Military Hospital Rawalpindi, Pakistan Institute of Medical Sciences Islamabad and Fauji Foundation Hospital from March 2005 to January 2009.

Patients and Method: In this study twenty adult patients reporting to these hospitals were included according to inclusion criteria. All were c-ANCA positive.Both males and female were included in the study The condition was more common in males than females (male: female, 3:2).

All the patients were followed regularly and c-ANCA titres were used to monitor disease activity in these patients.

Results: A total of twenty patients were included in this study out of which 12 were males and 8 females (male:female, 3:2). The age range at presentation was between 20 to 65 years for both male and female. Rhinological features were present in 16 (80%) of our patients. These patients presented with the symptoms of epistaxis,nasal discharge, nasal obstruction, postnasal drip, anosmia and septal perforation. Three (15%) patients had chronic supporative otitis media. They were initially treated by ENT specialists and an alternative diagnosis was suspected only when they failed to respond to conventional treatment or developed other complaints like haemoptysis, and renal impairment. Nasal biopsy was done in 7 patients. It showed necrotizing vasculitis with evidence of granuloma formation in 04 cases while the rest of cases showed chronic non specific inflammation.

Conclusion: Evaluation of rhinological features have significant role in the early diagnosis of Wegener's Granulomatosis

Keywords: Rhinological manifestations, c-ANCA, necrotizing vasculitis.

INTRODUCTION

Wegener's granulomatosis (WG) is characterised by granulomatous inflammation of the respiratory tract (upper and lower), necrotising vasculitis affecting small to medium sized arteries, and necrotising glomerulonephritis[1]. Although in its classical form, WG is a multisystem disease with protean manifestations, but clinical manifestations may be mild with limited organ involvement[2]. The disease was first described by Peter McBride in 1897. The pathological anatomical picture was described by Heinz Karl Ernst Klinger. Detailed description of the disease was given by Friedrich Wegener in 1936 and 1939[3,4].

The four clinical criteria for diagnosis of WG according to American Collegeof Rheumatology definition are:

Nasal or oral inflammation (painful or painless oral Ulcers, purulent or bloody nasal discharge)

Abnormal chest radiograph showing nodules, fixed infiltrates, or cavities

Abnormal urinary sediment (microscopic haematuria with or without red cell casts)

Granulomatous inflammation on biopsy of an artery or perivascular area

Although this is a very uncommon disease in children,but up to now it has been reported in a few children too with various presentations[5-7].

Autoantibodies c-ANCA, support the diagnosis of Wegener' granulomatosis and gives insight into the pathogenesis of this disease. The diagnosis of Wegener's

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Received: 29 March 2011; Accepted: 28 June 2011

granulomatosis is established by biopsy specimens showing the triad of vaculitis, granulomata, and large areas of necrosis admixed with acute and chronic inflammatory cells[8]. Untreated Wegeners' granulomatosis is fatal. Prednisolone may slow progression of the disease but by itself is insufficient to arrest the disease. Respiratory tract disease usually progresses slowly, but renal disease can progress rapidly and therefore warrants urgent evaluation and treatment. With the adequate therapy more than 90% of patients improve and 75% remit[9].

This study was carried out with the aim of finding rhinological manifestations of wegnee granulomatosis.

PATIENTS AND METHODS

This case series was conducted at ENT Department of CMH Rawalpindi in collaboration with Rheumatology Departments of Military hospital Rawalpindi, Pakistan Institute of Medical Sciences Islamabad and Fauji Foundation Hospital from March 2005 to January 2009. All the patients included in this study were hospitalized initially for the confirmation of the diagnosis and starting treatment.Twenty patients who fulfilled the diagnostic criteria for Wegener's Granulomatosis according to inclusion criteria were selected for the study after a written consent.

Inclusion Criteria

The American College of Rheumatology 1990 criteria were used to include patients in the study.

- Nasal or oral inflammation.
- Abnormal findings on chest radiograph.
- Urinary sediment.
- Granulomatous inflammation on biopsy.
- Out of above four criteria at least two were required for patient's inclusion in the subject study.

Exclusion Criteria

Following patients were excluded from the study.

- Patients with negative c-ANCA.
- Patients who were unwilling to undergo the study.

Patients were clinically evaluated and relevant details of history and clinical examination were recorded on a preformed proforma. Detailed systemic examination was done with special emphasis on ENT examination.

Investigations

Following investigations were done in every patient.

1. Blood CP, ESR
2. Urine for active sediment
3. Chest Radiograph
4. Serum Creatinin
5. c- ANCA
6. Ultrasound abdomen for renal size and echotexture.
7. Serum Complement levels.
8. ECG
9. Blood sugar
10. Liver Function Test

Following investigations were done when indicated.

1. Biopsy
   - Renal
   - Nasal
   - Transbroncial Biopsy
2. Anti GBM Antibodies.
3. Serum Cryoglobulins

RESULTS

A total of twenty patients were included in this study out of which 12 were males and 8 females (male:female, 3:2). The age range at presentation was between 24-65 years for males and 20-50 for females. Sinonasal features were present in 16 (80%) of our patients. These patients presented with the symptoms of epistaxis, nasal discharge, nasal obstruction, postnasal drip, septal perforation and anosmia. Three 3(15%) patients had otological features like ear discharge. They were initially treated by ENT specialists and an alternative diagnosis was suspected only when they failed to respond to conventional treatment or developed other complaints like haemoptysis, and renal impairment. Nasal biopsy was done in 7(35%) patients. It showed necrotizing

vasculitis with evidence of granuloma formation in 4(20%) cases while the rest of cases showed chronic non specific inflammation.

Other presenting complaints like haematuria was present in 13 (65%) patients, fever and polyarthralgias in 10(50%) patients, skin rash in 05 (25%), conjunctivitis in 03 (15%), proptosis in 5 (25%) and peripheral neuropathy in 02 (10%).

Three (15%) patients presented with rapidly progressive glomerulonephritis with serum creatinine more that 300umol/I at the time of admission. Two of these patients died due to acute renal failure before any specific immunosuppressive treatment could be started. One patient with acute renal failure developed acute respiratory distress syndrome and died despite intensive care and ventilatory support.

DISSCUSSION

Wegener's Granulomatosis is an uncommon illness. As untreated disease carries a very poor prognosis, early diagnosis and prompt treatment is life saving in most of the cases. Early recognition of presenting clinical features of Wegener's granulomatosis can be very difficult sometimes as it may mimic trivial illness like chronic viral upper or lower respiratory infections, chronic rhinosinusitis and non specific polyarthralgias[7]. So diagnosis can easily be missed with common ailments.

This study was planned to work out most common presenting features of this uncommon illness in our patients. It will help us in early diagnosis and prompt initiation of treatment, ultimately reducing morbidity and mortality in our patients.

The results of our study showed that most common presenting symptoms were epistaxis (80%) haematruia (65%), fever and polyarthralgias (50%), haemoptysis (42%) and skin rash (25%). It was followed by conjunctivitis (15%), proptosis (25%) and peripheral neuropathy (10%).

Most of our patients presented with nonspecific symptoms and signs, so that Wegener's granulomatosis was not initially considered. Majority of the patients had clinical or radiological disease in the nose or paranasal sinuses as the primary problem. Ocular involvement was present in only 25% of our patients. Renal involvement was present in 65% of the patients. These patients had renal biopsy which showed segmental necrotizing glomerulonephritis.

Neurological involvement was present in only in 2 (10%) of our patients who had distal symmetrical polyneuropathy. These patients were followed regularly and c-ANCA titres were used as a part of laboratory work up to monitor disease activity in most of the patients. Two patients died due to acute renal failure before any specific immunosuppressive treatment could be started. Rest of the patients were treated with combination therapy of cyclopasphamide (1.5-2 mg/kg) and prednisolone (1 mg/kg), methyl prednisolone (100mg/day) was used in three patients who had more severe disease

Complete remission was achieved in seven patients while four patients had partial remission.

CONCULSION

Although Wegener's Granulomatosis is a rare condition, and accordingly be confused with more common ailments and very easily the diagnosis is missed. But if proper attention is given to chronic and persistant rhinological features associated with lower respiratory symptoms, otological, ocular and renal manifestations accurate and timely diagnosis can be made based on an established record of rhinological features of the disease and can be confirmed with certainty by biopsy of nasal mucosa.

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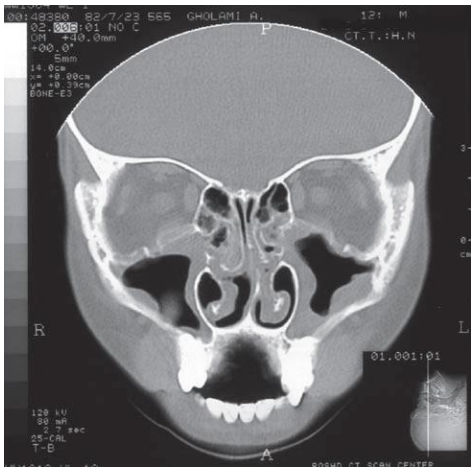
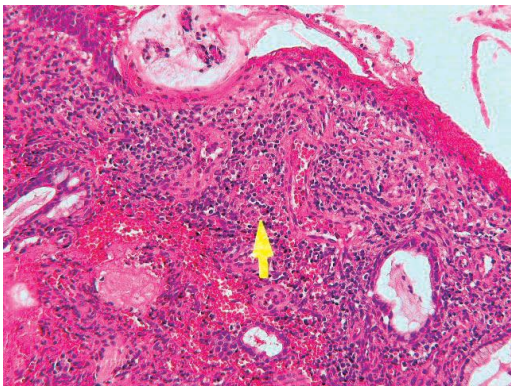


CT shows multiple polyps with hypertrophic mucosa



WG ---Vessel wall contains infilterate of histiocyte,lymphocytes and Giant cells