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Wegener's granulomatosis presenting as a temporal headache

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Abstract

Formerly a fatal condition, Wegener's granulomatosis is now treated with good results. Clinical morbidity is often due to failure by clinicians to make the diagnosis. Many patients (including our cases reported here) present with atypical symptoms, and only a high index of suspicion will ensure early diagnosis. Classical chest and renal symptoms often indicate late stage disease. We present two cases that underline the limitations of current 'diagnostic' immunological tests whilst emphasising the importance of clinical features in diagnosis.

Standard treatment with Cytotoxic agents and corticosteroids are effective but carry considerable morbidity. We have followed the current trend of incorporating a less toxic antibiotic agent in the management of this enigmatic condition.

Key words: Wegener's granulomatosis; Headache

Introduction

The classical description of Wegener's granulomatosis (Ataman *et al.*, 1994) consists of a histological triad namely:

(1) necrotizing inflammation with granulomas in the respiratory tract;
(2) a systemic small vessel vasculitis;
(3) a focal glomerulonephritis.

Benson-Mitchell and colleagues (1994), in their report of a case of Wegener's granulomatosis presenting with a parotid swelling, pointed out the increasingly diverse presentations being reported in the literature. Carrie *et al.* (1994) showed that the anti-neutrophil cytoplasmic antibody (ANCA) was often not present in atypical cases of Wegener's granulomatosis compared to 'classical' forms which were nearly always positive.

Fauci and Wolff (1973) established cyclophosphamide and corticosteroids as the treatment of choice for Wegener's granulomatosis. Until then, most patients with the disease (>90 per cent) died within two years of diagnosis. Over the years alternatives have been sought, including azathioprine and trimethoprim-sulphamethoxazole (Israel, 1988).

Wegener's granulomatosis is an interesting condition in otolaryngological practice. Its varied presentations continue to cause diagnostic delays. We present two cases presenting with abnormal facial symptoms, in one of whom the diagnosis was greatly delayed.

Case reports

Case 1

A 36-year-old prison officer was referred to the Otolaryngology department in November 1993. He complained of severe lancinating left-sided facial pain of 11 days duration. He had also been troubled with a green serosanguinous nasal discharge, postnasal drip and nasal obstruction, as well as photophobia.

He was treated by his general practitioner with vibramycin, erythromycin and cocodamol for a presumed sinusitus. This treatment did not alleviate his symptoms. Examination revealed an occluded left nostril from which old blood was removed. The septum was deviated to the left. Blood was taken for full blood count and erythrocyte sedimentation rate and a computed tomography (CT) scan of the paranasal sinuses and skull base was arranged.

Nine days later he presented to the Accident department with severe frontal pain which required admission. He now described the pain as a constant severe left-sided frontoethmoid headache. He was very sensitive to pain and the hyperaesthesia prevented him from combing his hair or shaving. The pain extended retro-orbitally and kept him

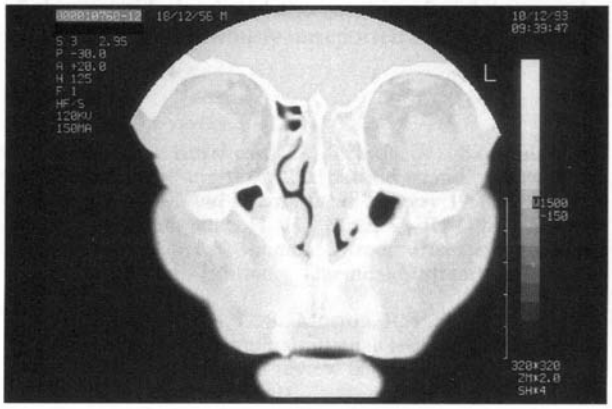

FIG. 1

Pre-operative coronal CT scan of the paranasal sinuses showing extensive opacification of the left ethmoid air cells.

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awake at night. The photophobia persisted but there was no objective evidence of visual field changes.

On admission he appeared unwell but was apyrexial and general examination including neurological examination was normal. ENT examination was unchanged. Extreme tenderness was elicited over the left hemicranium and the left frontal and maxillary regions. The working diagnosis remained sinusitis and he was commenced on intravenous antibiotics, nasal decongestants and analgesics. A CT scan showed extensive mucosal thickening of the left middle turbinate and complete opacity of the left anterior ethmoid cells. Both frontal recesses were opaque. There was polypoid mucosal formation in both maxillary antra, and bilateral ostiomeatal complex disease. Posteriorly there was extensive mucosal opacification of the ethmoid air cells, continuing to involve the sphenoid sinus (Figure 1).

After five days the patient's symptoms had not improved, despite adding a non-steroidal anti-inflammatory agent and carbamezepine. Full ENT examination including nasendoscopy was repeated. This revealed normal mucosa and middle meatus on the right side. Again the septum was seen to be deviated to the left and in contact with the middle turbinate. The mucosa of the left Little's area was noted to be friable and haemorrhagic. Polypoid changes were seen in the left middle meatus.

A diagnosis of Wegener's granulomatosis was suspected and the patient underwent an examination under anaesthetic and biopsy of the left-sided lesion. The anti-neutrophil cytoplasmic antibody test was negative.

At surgery extensive haemorrhagic changes were found on the septum, especially on the left side and biopsies were taken. There were left-sided ethmoidal and superior meatal polyps. A left uncinectomy was performed. Bleeding was excessive which precluded a formal ethmoidectomy. A bony submucous resection was performed.

Post-operatively the patient's headache had improved. Histology showed numerous areas of eosinophilic necrosis with a diffuse chronic inflammatory cell infiltrate composed of lymphocytes and some plasma cells. Numerous giant cells were also seen. These findings were consistent with a diagnosis of Wegener's granulomatosis. He was commenced on cyclophosphamide 100 mg daily.

Ten days after admission the patient, now well, was discharged on prednisolone. He was no longer complaining of headaches. Urinalysis and chest X-ray were normal.

On review he was commenced on cotrimoxazole 960 mg b.d. with continuation of the steroids. Three weeks after discharge the symptoms had recurred although he felt better overall. The C-ANCA was finally positive (after two previous negatives) 1 in 80.

He was later given a course of local radiotherapy due to persistent active disease. The patient has made a good recovery. He attends regular follow-up to decrust his left nasal cavity and his ANCA remains negative. Eighteen months after diagnosis he underwent an examination under anaesthetic and biopsy with negative results. A repeat CT scan of his paranasal sinuses shows regression of disease (Figure 2).

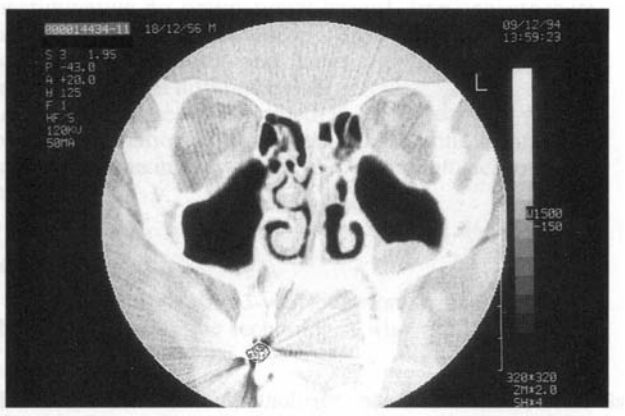

FIG. 2

Coronal CT scan of the paranasal sinuses showing regression of the disease (compared to Figure 1).

Case 2

A 69-year-old lady presented to the Department of Otolaryngology with increasingly severe right-sided facial and retro-orbital pain and tingling over the left frontal region. This was associated with green rhinorrhoea, postnasal drip and hearing loss.

On examination nasendoscopy revealed mucopus and inflamed mucosa in the postnasal space bilaterally. She had bilateral middle ear effusions. She had experienced similar pains over the last nine months. A temporal artery biopsy had been performed which showed the healing phase of arteritis. Despite this inconclusive evidence a diagnosis of temporal arteritis was made. She had been on high dose prednisone throughout without diminution of the pain. Recently she had developed radiological evidence of osteoporosis and crush fractures of the lumbar vertebrae.

A biopsy of the abnormal nasopharyngeal tissue was taken as well as blood for erythrocyte sedimentation rate and ANCA. She was commenced on topical nasal decongestants and cotrimoxazole 960 mg b.d.

While on the antibiotics the pain resolved to manageable proportions. Bilateral ventilation tubes were inserted. A chest X-ray was normal, but urinalysis showed the presence of blood. A renal biopsy did not show features of Wegener's granulomatosis. The histology was inconclusive for the disease but the C-ANCA was reported as positive with a titre of 1:160, so a diagnosis of Wegener's granulomatosis was made. The patient's management continued under the care of the renal physician who commenced her on cyclophosphamide 150 mg per day, with decreasing doses of prednisone.

Her pain was generally much reduced while on cotrimoxazole and cyclophosphamide, with reduced inflammation in the postnasal space and normal blood indices.

Discussion

Fauci and Wolff (1973) found that 94 per cent of their patients with Wegener's granulomatosis had nasal symptoms. The problem noted (Benson-Mitchell *et al.*, 1994) is that often these symptoms are of secondary significance to what the patient thinks is the problem. Otolaryngological symptoms are often only found by direct questioning. In our first case the patient's main problem was lancinating pain. He did not relate it to his serosanguinous discharge.

The second case illustrates that a rhinological cause of facial pain should be considered when symptoms attributable to another disease such as temporal arteritis do not resolve on the standard treatment.

Penchas *et al.* (1993) reported a patient who had severe discomfort on contact with his hair or scalp and was therefore unable to brush or wash his hair. Our first patient found combing his hair and shaving intolerable.

Often localised Wegener's granulomatosis shows a negative ANCA (Gross *et al.*, 1986). Relapses may correlate with an increase in the ANCA titre. Certainly in our first case, the ANCA only became positive when the patient had a clinical relapse. On occasion an initially

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negative ANCA which becomes positive may indicate progression to a more generalised form of Wegener's granulomatosis (Carrie *et al.*, 1994).

A short course of trimethoprim-sulphamethoxazole (cotrimoxazole) was used in the management of both patients. It improved the patients' general well being although laboratory results (ANCA) in the first case indicated disease progression. Israel (1988) used trimethoprim-sulphamethoxazole successfully especially in patients suffering from toxic side effects of cyclophosphamide. Fukuda *et al.* (1989) showed mixed results with the drug, whilst McRae and Buchanan (1993) suggested it as the future treatment of choice.

The choice of treatment in both patients was made jointly with the Chest and Renal Physicians. As our first patient had had a vasectomy, cyclophosphamide, which affects gametogenesis, was the cytotoxic agent chosen. He showed no signs of drug toxicity.

The overlap in symptoms between temporal arteritis (TA) and Wegener's granulomatosis has been highlighted by Nishino *et al.*, (1993). They reported a series of 345 cases of Wegener's granulomatosis, of whom five presented initially with features suggestive of TA. In all five cases there was a significant delay in diagnosing Wegener's granulomatosis, which was also a feature of the history in *Case 2*.

Failure to respond to standard treatment for TA should prompt the physician to consider other causes of facial pain, in particular Wegener's granulomatosis. In both of our cases, treatment of the disease with the accepted drug regime led to improvement in symptoms and signs. In the first case, the surgical procedure carried out (submucous resection and limited anterior ethmoidectomy) may have contributed to an improvement in his symptoms.

In conclusion, we have presented two cases in whom Wegener's granulomatosis presented as atypical facial pain. One patient had been unsuccessfully treated with steroids for temporal arteritis leading to serious side effects. Cotrimoxazole produced a good clinical improvement at least temporarily, and should be considered the first line of treatment either alone or in combination with immunosuppressant or cytotoxic therapy.

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