Case report

Wegener's Granulomatosis: A report of two Cases with different clinical and laboratory features

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Abstract

We present two cases of Wegener's granulomatosis (WG) with systemic involvement. Our first case, a 50 year old female, presented with painful vesicles on the left side of neck and chest. She was diagnosed as post-primary tuberculosis due to persistent cough and a nodular opacity in the left lower lobe of the lung. A wedge biopsy of the lung tissue did not show any mycobacteria, and an open biopsy showed granulomatous inflammation with necrosis. The serology for cytoplasmic-antineutrophil cytoplasmic antibodies (c-ANCA) and perinuclear – antineutrophil cytoplasmic antibodies (p-ANCA) was negative and renal parameters were normal. Our second case, a 50 year old male, presented with fever, cough with expectoration, and blood stained nasal discharge for the past 15 days with no cutaneous lesions. The renal biopsy showed cresentic glomerulonephritis and serum tested positive for c – ANCA. Both the cases were diagnosed as WG and managed using corticosteroids and/or cytotoxic medications. These cases represent the different clinical and laboratory features of limited and classical forms of WG respectively, and though the second case did not require extensive investigations, the first case posed a diagnostic challenge since one of the common differential diagnosis of nodular lung involvement with persistent cough in developing countries is tuberculosis.

Introduction

Wegener's granulomatosis (WG) is a multisystem disorder of unknown etiology characterised by necrotizing granulomatous inflammation and vasculitis involving both arteries and veins.[1] The disease is more common in males and seen in fourth and fifth decades of life; the estimated incidence of the disease in the population being 4 per million to 8.5 per million.[2,3] WG exists in two forms: 1) the classic form which affects the upper respiratory tract (URT), the lower respiratory tract (LRT), and the kidneys; 2) the limited form which affects only the URT and LRT.[4] Apart from these organs, WG can also affect the skin, eyes, joints and the central nervous system.[5] Detection of circulating cytoplasmic antineutrophil cytoplasmic antibodies (c-ANCAs) and histopathology of the affected organs are useful to diagnose WG at an early stage.[6] Indeed, the increase in estimates of WG has been attributed to increased clinical suspicions and availability of good laboratory tests.[2] We present two cases of WG presenting with different clinical and laboratory features to our clinic.

Case report

Our first case, a 50 year old female presented with painful vesicles on the left side of neck and chest (over the cervical dermatomes – two, three, and four) in November 2012. Thus, based on these findings, we

diagnosed her to be a case of cervical herpes zoster (Figure 1a and b). The patient reported that she had cough for three months, seven years ago for which she was investigated. An initial X- ray of the chest showed the presence of a nodular opacity in the left lower lobe (Figure 2) and subsequently, the computerised tomography (CT) scan of the chest showed features suggestive of post-primary tuberculosis. The patient underwent a repeated CT scan at a different centre. The second scan showed pleural thickening and a mass in the lower lobe of the left lung. The patient was then diagnosed as case of non-small cell carcinoma of the lung by fine needle aspiration cytology. Subsequently, the patient was referred to specialised cancer centre. A repeat CT scan of the chest showed features suggestive of malignancy and a positron emission tomography (PET) scan suggested an active disease in the lower lobe. A wedge biopsy of the lung tissue did not show any acid fast bacilli or other mycobacteria and an open biopsy of the lung tissue showed granulomatous inflammation with necrosis. The patient was diagnosed as a case of WG based on the above investigations. The serology for c-ANCA and perinuclear – antineutrophil cytoplasmic antibodies (p-ANCA) was negative. The serological investigations for renal parameters did not show any abnormalities. She was started on 40 mg of prednisolone daily; the dose was gradually tapered to 5 mg and she has been on this dose for the past five years. The patient was treated with valacyclovir in a dose of one gram three times daily for seven days for her current skin lesions. The patient did not follow-up after starting the therapy for herpes zoster.

Our second case a 56 year old male, admitted in the nephrology department of our hospital was referred to our department for dermatological evaluation. The patients presented to the hospital with complaints of fever, cough with expectoration, and blood stained nasal discharge for the past 15 days. We did not find any cutaneous lesions on examination of the patient. The patient, however, had a high serum creatinine (5.6 mg/dl), a patchy nodule in the lower base of the lung (as seen on X-Ray), and a cyst in the right kidney and cholelithiasis (as seen on the ultrasonography). The patient was initially managed by repeated dialysis with limited success (levels of serum creatinine did not reduce).

glomerulonephritis and the patient's serum tested positive for c – ANCA. Thus, based on the above clinical features and investigations, the patient was diagnosed as a case of Wegener's granulomatosis. The patient was started on a monthly pulse of methylprednisolone (1gram per day for three days) and cyclophosphamide (500 gram on day of pulse therapy) along with oral cyclophosphamide 50 mg on non pulse days. After three pulses (when the patient was referred to us) there was reduction in the nasal symptoms and the creatinine levels were within normal limits.

Discussion

The two cases of WG discussed above presented with different manifestations. The first case with the involvement of the upper and lower respiratory tracts presents a diagnostic dilemma, particularly in our clinical settings.[7]However, with the increasing awareness about the condition and introduction of serological markers like c - ANCA, the efficacy in diagnosing WG has greatly increased. However the sensitivity of c - ANCA is low (65-70%) in cases with limited WG and is often negative in about 10-20% of the cases – this added the diagnostic challenge in our case. [1, 6] Finally, a surgical procedure (open lung biopsy) was instrumental in helping us with the diagnosis of WG. Another feature which could have helped us with the diagnosis is therapeutic response to steroids and cytotoxics.[1] However, the differential diagnosis of tuberculosis (which will be very common in our settings) may prevent us from diagnosing WG based on a therapeutic response. Furthermore, the cutaneous feature of herpes zoster in our patient may be due to immunosuppressive therapy rather than the disease itself.

Our second case was representative of the classic form of WG. Though, the patient had upper and lower respiratory tract symptoms with high serum creatinine, the presence of c – ANCA and features of the renal biopsy were instrumental in final diagnosis of the condition. In both these cases introduction of cyclophosphamide and prednisolone resulted in rapid clearance of symptoms.

To summarize we can say that Wegener Granulomatosis is a multisystemic disease with atypical course and manifestations, and should be considered as an important differential diagnosis of nodular lung lesions. Cutaneous features such as palpable purpurae (most common), papule plaque, ulceration, vesicles, urticaria like lesions, subcutaneous nodules and panniculitis are seen in up to 50 % of cases.[8,9,10] Thus, patients who present with respiratory and renal symptoms and do not respond to conventional therapy should be investigated for WG. Though, serological tests such as c – ANCA may be useful in the confirmation diagnosis, its utility is limited in the 'limited' variety of WG and one may have to resort to more invasive procedures such as biopsies for confirmation diagnosis.[6]

Acknowledgements: We would like to thank Dr. Rushi Deshpande for recommending the case.

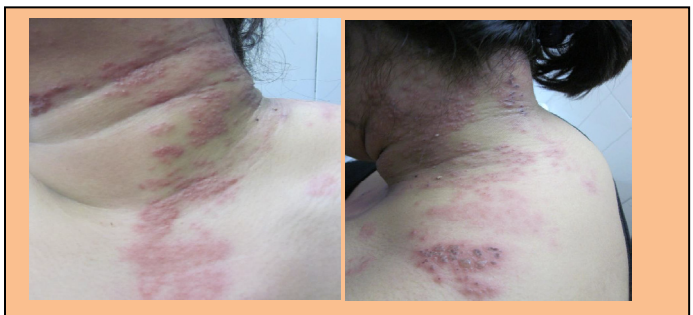

Figure 1 a and b: Photograph of the vesicular lesion on the neck and chest

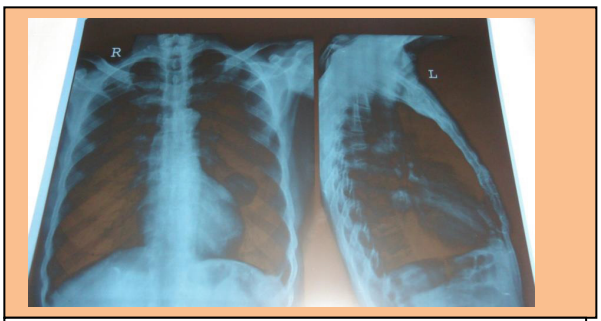

Figure 2: X-Ray showing a nodular lesion in the left lower lobe of the lung

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