

## CASES FOR DIAGNOSIS

# Necrotic Papules Associated With Hemoptysis and Acute Renal Failure

D.I. Santiago, A. González-de Arriba, and M. Aragüés

Servicio de Dermatología, Hospital Universitario de La Princesa, Madrid, Spain

### Clinical History

The patient was a 48-year-old woman admitted to the intensive care unit for respiratory failure, hemoptysis, and acute renal failure. Of note, there was a 2 month history of odynophagia, aphonia, fluctuating bilateral conjunctival injection, joint and muscle pain, and low-grade fever, together with an episode of chondritis of the pinna of the left ear and the appearance of asymptomatic skin lesions.

### Physical Examination

Infiltrated, well-defined, erythematous papules of up to 5 mm in diameter were observed on the elbows (Figure 1) and periungual regions of the right hand (Figure 2). These papules were covered by a very adherent bloodstained crust.

### Histopathology

The histological study revealed the presence of an interstitial histiocytic infiltrate that did not form granulomas, associated with extensive, basophilic foci of collagen necrosis (Figure 3) and scattered areas of fibrinoid necrosis around small vascular structures (Figure 4).

### Additional Tests

The findings at the time of admission included anemia (hemoglobin, 7.8 mg/dL), a deterioration in renal function (creatinine, 5 mg/dL), and signs of acute respiratory failure. Computed tomography of the thorax showed alveolar infiltrates in the right lung and nodular areas with a ground glass appearance in both bases. Importantly, there was a positive result for a cytoplasmic pattern of



Figure 1.



Figure 2.

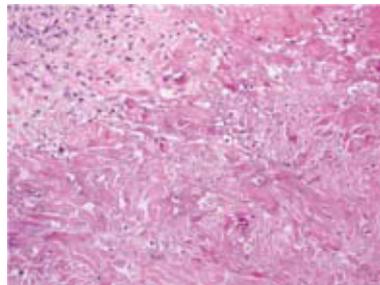


Figure 3. Hematoxylin-eosin,  $\times 20$ .

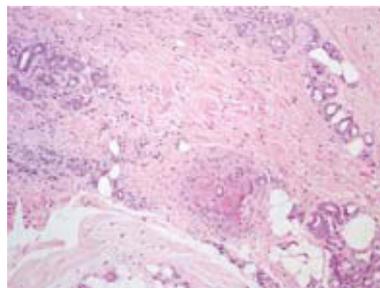


Figure 4. Hematoxylin-eosin,  $\times 10$ .

antineutrophil cytoplasmic antibodies to proteinase 3 (anti-PR3 ANCA).

### What Was the Diagnosis?

Correspondence:  
Diana Inmaculada Santiago Sánchez-Mateos  
Hospital Universitario de La Princesa  
C/ Diego de León, 62  
28006 Madrid, Spain

dianass\_m@yahoo.es

Manuscript accepted for publication November 10, 2008.

## Diagnosis

Wegener granulomatosis with pulmonary, renal and cutaneous involvement.

## Clinical Course and Treatment

During her admission, the patient received pulsed methylprednisolone, cyclophosphamide, and several cycles of plasmapheresis, leading to a favorable response in lung and renal function and the progressive disappearance of the skin lesions. Two months after the diagnosis, the patient was asymptomatic and continued treatment with prednisone, 45 mg/d, and cyclophosphamide, 100 mg/d.

## Discussion

Wegener granulomatosis is a systemic vasculitis that mainly affects the upper respiratory tract, lung, and kidneys, although any organ can be affected. The characteristic histological findings are the presence of necrotizing granulomas and vasculitis involving small and medium vessels.

The presence of skin lesions at some time in the course of the disease varies between 20% and 50% of patients, depending on the series.<sup>1</sup> Their presence is associated with a higher prevalence of renal, ocular, and central nervous system disease, and they could serve as a prognostic marker. Skin lesions may be the initial manifestation in 10% of cases, and are then a major diagnostic challenge.<sup>2</sup>

The clinical manifestations are very variable; the most frequent is palpable purpura, though the appearance of papules on the limbs, particularly around the elbows, nodules, ulcers, and vesicles has also been reported. Histopathology varies depending on the type of lesion biopsied. The purpuric papules are usually due to the presence of leukocytoclastic vasculitis. The other clinical forms may show typical alterations of Wegener granulomatosis with small and medium vessel vasculitis associated with necrosis and granulomas, although some cases only present nonspecific histopathological changes

that are insufficient for confirming the diagnosis.<sup>3</sup> The tissue with the most marked histological changes is the lung; however, due to the morbidity associated with open lung biopsy, the presence of compatible images on computed tomography of the thorax may be sufficient for diagnosis.

In order to diagnose Wegener granulomatosis and start treatment, the presence of compatible clinical findings (involvement of the upper or lower airway and kidney) with a positive result for anti-PR3 ANCA is sufficient.

Cytoplasmic anti-PR3 ANCA is associated particularly with Wegener granulomatosis, with a sensitivity between 63% and 91%, depending on the extent and activity of the disease, and a specificity between 95% and 99%.<sup>4</sup> These antibodies may become negative in periods of remission and serial measurements may therefore be useful for monitoring disease activity.<sup>5</sup>

The prognosis of Wegener granulomatosis is very poor without treatment. However, the combination of corticosteroids and cyclophosphamide has improved survival among these patients.

### Conflicts of Interest

The authors declare no conflicts of interest.

## References

1. Duna G, Galperin C, Hoffman GS. Wegener's granulomatosis. *Rheum Dis Clin North Am.* 1995;21:949-86.
2. Daoud MS, Gibson LE, DeRemee RA, Specks U, el-Azhary RA, Su WPD. Cutaneous Wegener's granulomatosis: clinical, histopathologic, and immunopathologic features of thirty patients. *J Am Acad Dermatol.* 1994;31:605-12.
3. Magro CM, Crowson AN. The cutaneous neutrophilic vascular injury syndromes: a review. *Semin Diagn Pathol.* 2001;18:47-58.
4. Rao JK, Weinberger M, Oddone EZ, Allen NB, Landsman P, Feussner JR. The role of antineutrophil cytoplasmic antibody (c-ANCA) testing in the diagnosis of Wegener granulomatosis: a literature review and meta-analysis. *Ann Intern Med.* 1995;123:925-32.
5. Gibson LE, Specks U, Homburger H. Clinical utility of ANCA tests for the dermatologist. *Int J Dermatol.* 2003; 42:859-69.