

## **Panniculitis in *Pseudomonas aeruginosa* septicemia**

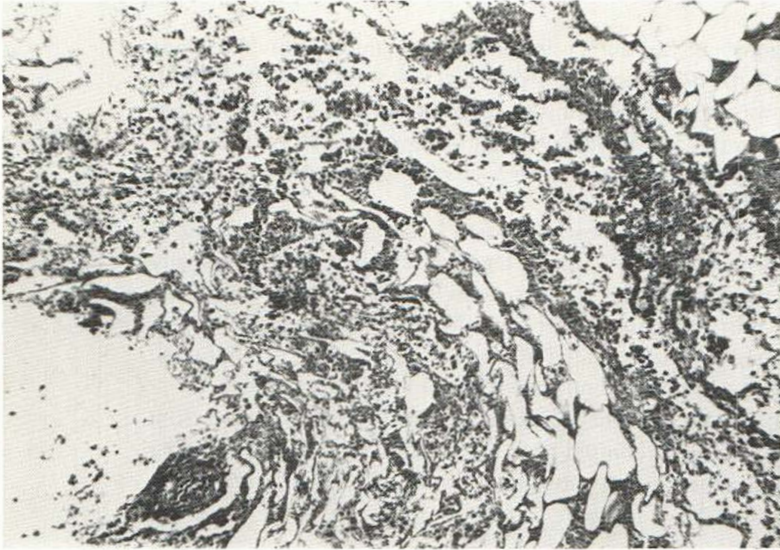
E. LLISTOSELLA, A. RAVELLA, A. MORENO and  
J. M. DE MORAGAS

*Departments of Dermatology and Pathology, Hospital de San Pablo,  
Autonomous University of Barcelona, Barcelona, Spain*

Llistosella E, Ravella A, Moreno A, de Moragas JM. Panniculitis in *Pseudomonas aeruginosa* septicemia. *Acta Derm Venereol* (Stockh) 1984; 64: 447-449.

A 71-year-old man developed multiple subcutaneous nodules during *Pseudomonas aeruginosa* septicemia. The acute and simultaneous flare of inflammatory nodules in a septic patient appears to be rather specific in *Pseudomonas* infections. Histological vascular lesions are prominent in the subcutaneous nodules. *Key words: Panniculitis; Pseudomonas aeruginosa septicemia.* (Received February 21, 1984.)

J. M. de Moragas, Department of Dermatology, Hospital de San Pablo, Autonomous University of Barcelona, Avda. San Antonio M<sup>a</sup> Claret 167, Barcelona 25, Spain.



*Fig. 1.* Liquefying panniculitis with extensive necrosis (H & E,  $\times 200$ ).

The incidence of cutaneous manifestations in *Pseudomonas aeruginosa* septicemia ranges between 1.3 (1) and 13 (2)%. The classical skin lesion is ecthyma gangrenosum. Other cutaneous manifestations like hemorrhagic vesicles and bullae, gangrenous cellulitis, macular or maculopapular lesions resembling rose spots of typhoid fever, petechiae, ecchymoses and nodular cellulitis are less common (3). We report a case of *Pseudomonas aeruginosa* septicemia in which the only cutaneous manifestation was the presence of inflammatory subcutaneous nodules, which resolved with antibiotic therapy.

#### CASE REPORT

A 71-year-old male was admitted in our Hospital with a left apical lobe pneumonia. Forty-eight hours later, multiple subcutaneous nodules appeared.

Clinical examination disclosed 25 to 30 inflammatory tender, nodular lesions distributed on the trunk, upper and lower extremities, all in the same stage of evolution, without ulceration of the overlying skin. *Pseudomonas aeruginosa* was isolated from blood, sputum and a cutaneous nodule. According to the antibiogram the patient was treated with azlocillin and gentamicin with progressive reduction of symptomatology, clearance of the chest X-ray film and resolution of cutaneous lesions in 25 days. Some of the cutaneous nodules became fluctuant, without ulceration.

A biopsy from a nodule of the leg showed liquefying panniculitis with extensive necrotic areas and dense neutrophilic infiltrate. Some small blood vessels, especially small venules, were found to show transmural basophilic necrosis of their walls, thrombosis, and sparse inflammatory infiltrate (Figs. 1, 2).

#### COMMENT

The presence of subcutaneous nodules in *Pseudomonas aeruginosa* septicemia has been stressed in occasional reports (4, 5) but always in association with other cutaneous manifestations. The case reported herein is exceptional because panniculitis was the only cutaneous manifestation.

Biopsy study of our case provided evidence of the pathogenesis of the lesion. The findings of vascular involvement, especially venules, with basophilic necrosis of the vessel wall and thrombosis without well-developed intramural inflammatory response are similar

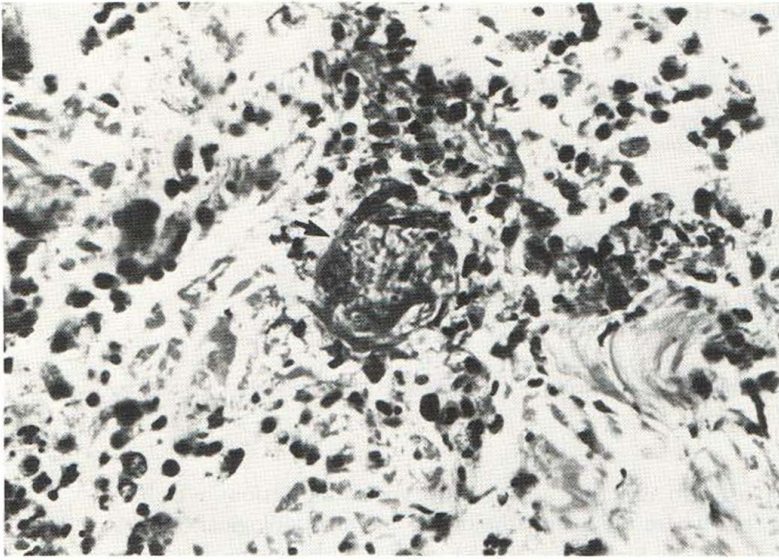


Fig. 2. A small venule (arrow) showing transmurial basophilic necrosis (H & E,  $\times 400$ ).

to those described in the more superficial lesions of ecthyma gangrenosum (6) and to those encountered in the lung in both experimental and clinical studies (7, 8, 9). A mechanism of invasion of the vessel wall from the periphery to the center has been postulated (7) although bacterial products may also play a role in the development of the lesion (7, 8).

Reed et al. (5) suggest that panniculitis might result from involvement of the deep venules while the more frequent cutaneous manifestations are due to superficial vascular lesions. According to the reported features *P. aeruginosa* septicemia can be included among the causes of acute panniculitis.

#### REFERENCES

1. Baltch AL, Griffin PE. *Pseudomonas aeruginosa* bacteremia: a clinical study of 75 patients. *Am J Med Sci* 1977; 274: 119-129.
2. Flick MR, Cluff LE. *Pseudomonas* bacteremia. Review of 108 cases. *Am J Med* 1976; 60: 501-508.
3. Weinberg AN, Swartz MN. Gram-negative coccal and bacillary infections. In: Fitzpatrick TB, Eisen AZ, Wolff K, Freedberg IM, Austen KF, eds. *Dermatology in general medicine*. New York: McGraw-Hill 1979.
4. Schlossberg D. Multiple erythematous nodules as a manifestation of *Pseudomonas aeruginosa* septicemia. *Arch Dermatol* 1980; 116: 446-447.
5. Reed RK, Larter WE, Sieber OF, John TJ. Peripheral nodular lesions in *Pseudomonas* sepsis: The importance of incision and drainage. *J Pediatr* 1976; 88: 977-979.
6. Dorff GJ, Geimer NF, Rosenthal DR, Rytel MW. *Pseudomonas* septicemia. Illustrated evolution of its skin lesion. *Arch Intern Med* 1971; 128: 591-595.
7. Teplitz C. Pathogenesis of *Pseudomonas* vasculitis and septic lesions. *Arch Pathol* 1965; 80: 279-307.
8. Fetzer AE, Werner AS, Hagstrom JVC. Pathologic features of pseudomonal pneumonia. *Am Rev Respir Dis* 1967; 96: 1121-1130.
9. Soave R, Murray HW, Litreta MM. Bacterial invasion of pulmonary vessels. *Pseudomonas* bacteremia mimicking pulmonary thromboembolism with infarction. *Am J Med* 1978; 65: 864-867.