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Renal amyloidosis complicating sarcoidosis

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Amyloidosis of the AA type is a well known complication of several granulomatoses. Its association with tuberculosis is well known, and it has also been reported in leprosy, ileocolitis, and coccidioidomycosis. In contrast, it is exceedingly rare in sarcoidosis, with only three cases published so far. We have observed the occurrence of nephrotic syndrome due to renal deposits of amyloid in a case of sarcoidosis with a prolonged and active course.

Case report

A 30 year old North African Arab man, with no past medical history, complained of chest pain in 1981. Chest radiographs disclosed a right sided pleural effusion and bilateral hilar and laterotracheal lymph nodes. Mantoux skin testing (10 tuberculin units) and repeated searches for *Mycobacterium tuberculosis* gave negative results. Sarcoidosis was diagnosed from the presence of typical granulomas in material obtained from bronchial and cervical lymph node biopsies and from a positive Kveim-Siltzbach test. In addition, there was lymphocytosis (58%) in the fluid recovered by bronchoalveolar lavage (normal < 20%), high (68 units/ml) serum angiotensin converting enzyme activity (normal < 60 units), a raised polyclonal serum IgG concentration (28 g/l), and a high erythrocyte sedimentation rate. Serum calcium concentrations and 24 hour urinary calcium excretion were normal. Renal function was normal and no urinary protein was found. Analysis of pleural fluid showed an exudate (total protein 69 g/l) and a predominance of lymphocytes. Pleural biopsy showed non-specific inflammation. Pulmonary function tests showed a restrictive syndrome with low total lung capacity (56% predicted) and carbon monoxide transfer factor (43% predicted) and a normal (100% predicted) FEV_1/vital capacity ratio.

Treatment with prednisone, 0·5 mg/kg a day, was instituted. The pleural effusion and thoracic lymph nodes subsided, and pulmonary function test values returned to normal within three months. Repeated attempts to reduce the corticosteroid dosage were followed by recurrence of the pleural effusion. Despite continuing treatment, granulomas were found elsewhere—in the vas deferens (biopsied during surgical treatment of testicular ectopy) and in the bone marrow (biopsied to rule out plasma cell dyscrasia).

In 1985 the patient noted the sudden onset of generalised, pitting oedema. Laboratory investigations disclosed the nephrotic syndrome: 24 hour proteinuria was 15 g, serum total protein concentration 44 g/l, serum albumin 13 g/l and serum cholesterol 14 mmol/l. There was no microscopic haematuria. Renal function was normal (serum creatinine 99 μmol/l). Detailed immunological and haematological investigations ruled out monoclonal gammopathy. A percutaneous renal biopsy specimen was studied by light microscopy, which showed abundant deposits of amyloid in the glomeruli and in the renal arteries. Application of immunofluorescence with anti-κ, anti-λ light chains and with an anti-β_2 microglobulin antiserum gave negative results.

The patient was advised to continue corticosteroid treatment and to take 1 mg colchicine daily. A year later the nephrotic syndrome was still present and incipient renal failure was observed, with a serum creatinine concentration of 150 μmol/l. Currently the serum creatinine is 700 μmol/l and the patient will shortly start maintenance haemodialysis.

Discussion

The diagnosis of amyloidosis was confirmed in this patient by the typical lesions observed in the glomeruli. These lesions were metachromatic, with no possible confusion with hyaline fibrosis.[1]

We believe that amyloidosis was a complication of sarcoidosis. Neither the propositus nor any member of his family had any manifestations of familial Mediterranean fever, nor was there evidence of any disease with overt immune deficiency. We have found three other case reports of amyloidosis occurring during the course of sarcoidosis. The first[2] was controversial, as the patient suffered from both sarcoidosis and bronchiectasis. The case of Fresko and Lazarus[3] was more convincing, as amyloidosis developed in a black patient who had had chronic active sarcoidosis for 16 years. In the patient of Bar-Meir *et al*[4] sarcoidosis and amyloidosis were discovered simultaneously. Each of these authors acknowledged the possibility of a coincidence. As it has been established that serum amyloid A protein concentrations are high in sarcoidosis,[5] these cases may in fact not be coincidental. Amyloidosis could be a complication of particular forms of sarcoidosis with a protracted course, against a particular genetic background. The same physiopathology has been proposed in familial Mediterranean fever.[6]

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Book notices

Chronic Obstructive Pulmonary Disease: Current Concepts. Edited by JE Hodgkin and TL Petty. (Pp 316; £23·50.) Philadelphia: WB Saunders, 1987. ISBN NO 0-7216-1897-9.

This book aims "to provide a state-of-the-art discussion regarding the diagnosis and treatment of COPD" written by a team of 23 North American experts and one from the United Kingdom. The emphasis is on practical management; many of the chapters are reviews of expected topics such as definitions, pathogenesis, laboratory evaluation, exercise training, sleep disorders, drug treatment, and prognosis. These accounts provide the expected similarities to, and differences from, UK practice (cost of spirometry $102, adjusting theophylline dosage for eaters of barbecued food, a different list of non-narcotic antitussive agents, etc). The unusual aspect of the book for a UK reader is the space devoted to less precise areas, such as psychosocial rehabilitation and psychopharmacology, relaxation techniques and biofeedback, disability evaluation, sexual problems, ambulatory and home care, and ethical dilemmas. Many of these topics are managed informally (if at all) in the UK so it is instructive to read of more formal (even paternalistic) approaches, even though these are sometimes discussed at too great length. The editors see the volume as presenting the increase in knowledge about treatment of chronic obstructive lung disease during the last decade; though there have been improvements, there has been nothing remotely comparable to the changes provided by coronary artery surgery for myocardial ischaemia. For this reviewer the dominant impression on putting down the book was disappointment that over the last 20 years respiratory physicians have not applied and assessed the few modifying factors we have had to offer these disabled patients more rigorously; as it is, what is useful and what is redundant remains uncertain.—NBP

Lung cancer: Current Status and Prospects for the Future. 2nd ed. CF Mountain and DT Carr. (Pp 440; $60.) University of Texas Press, 1987. ISBN NO 0-292-74652-0.

This work represents the proceedings of a conference on lung cancer. The authors are distinguished in this area of research and the conference surveys our present state of knowledge, current controversies, and possible areas of advance. It underlines the difference between the American and British approaches to lung cancer. In general, the therapeutic approach is more aggressive and sometimes a little uncritical. In the chapter on selection for surgical treatment the five year survival for stage III tumours is surprisingly good at 30%, but it is uncertain how patients were selected for resection apart from staging. Those dying within 30 days of resection were excluded from the survival figures, which no doubt improves these. The theoretical sections convey an impression of the vast amount of experimental work done in America. Much of it may represent Brownian motion but at least they are trying, which is a start in improving management. Any multicentre publication usually contains a combination of gems and less valuable stones. The section on current concepts of chemotherapy and radiotherapy for small cell carcinoma is an excellent review for the clinician and that on experimental approaches to improve the results of radiotherapy for non-small cell carcinoma is a model of clarity of expression. On the other hand, the section on cellular genes in human neoplasia is written in cipher and is uncomprehensible. The section on new approaches to using monoclonal antibodies is four pages long, has 11 eminent authors, and contains no message. In general, this is a valuable book for anyone interested in lung cancer, with something for the specialist and for the person seeking an overall view of the transatlantic approach.