Pulmonary Pseudotumours

Pages with reference to book, From 297 To 299

Fatema Jawad (Sughrabai Millwalla Hospital, Karachi.)

A mass in the lung may be a benign lesion which has been labelled collectively as an inflammatory pseudotumour. The initial reports were made by Brun[1] and Umiker.[2] It is defined as a non-neoplastic mass of unknown etiology, composed of a mixture of inflammatory and mesenchymal cells including plasma cells, histiocytes, mast cells and lymphocytes. There is a complete maturity of fibroblastic components with lack of mitosis.

As the exact pathogenesis is obscure, various theories have been suggested. These include metabolic disturbances, immunological responses,[4,5] organised cellular growth in association with infection,[6] a part of post-inflammatory process,[2,7,8] a viral infection and an antigen antibody reaction with the material leading to it not being identifiable.[9] A chronic inflammatory lesion with the presence of mast cells or a benign neoplasm arising from the neuronal elements of the lungs, have also been attributed as the causative factors.[8] One study concluded, that the lesion resulted from an inflammatory response with metaplastic pneumonocytes and proliferated stroma super imposed by chronic inflammatory cells.[10] Intranuclear and intracytoplasniic inclusions in fibroblasts raised a suspicion of a virus being the causative organism. But no proof could be obtained.[11] Neither could bacteria or fungi be cultured from the lesions, thus excluding them too from the etiology.

The presenting symptoms of patients with pseudotumours of the lung are non-specific and variable. A nonproductive cough is usually present. Fever and pleuritic pain of mild intensity may be associated. Haemoptysis is occasionally encountered and clubbing is infrequent and disappears after resection. Sputum examination both bacteriological and cytological helps in excluding malignancy and tuberculosis, although a positive smear for acid fast bacilli does not rule out an inflammatory pseudotumour.[12] The diagnosis of pseudotumour of the lung presents difficulties. None of the laboratory data is highly suggestive. Turnours involving the endobronchial area can be diagnosed by bronchoscopy and biopsy. Roentgenographic examination of the chest shows a well defined mass in most cases.[13,14] But some times the lesion may be iidefined involving any lobe or segment of the lung. This can be confused with consolidation, clouding, pneumonitis or atelectasis. Occasionally cavitation or calcification of these tumours may be present.[14] Pleural effusion is never found in cases of pseudotumours of the lungs[14] which is a reliable excluding factor. As the communication between the bronchial tree and the tumour is very rare, the typical rat tail appearance of carcinoma is not visualized.[15]. Percutaneous needle biopsy plays quite an important role in reaching the final diagnosis of pseudotumours,[6,16] although the aspirated material has to be thoroughly studied under the microscope. Light and electron microscopy provides distinguishing features which have to be differentiated from conditions as pseudolymphoma organizing pneumonia and malignancy.[17,18]

Pseudotumours of the lung though not so well understood a lesion, are totally benign. Their course may be at times aggressive[4,6] but there is no recurrence after excision. The growth of these tumours is very slow and they can easily be called static in nature.[4,19] They may take a period of months or years before being detected. Sometimes they undergo a spontaneous reso lution,[20] and there is also a great possibility that they respond well to radiation therapy, although the experience with this mode of treatment is limited.

As is evident, the establishment of a definite diagnosis preoperatively is extremely difficult. This leaves surgery in the form of thoracotomy and excision of the mass, as the treatment of choice. Once the

nature of the lesion is ascertained, when possible by a frozen section analysis, a minimal resection is indicated.[20] The prognosis of these lung tumours is excellent. Followup studies on patients for as long as ten years have shown no recurrences.[4,21]

The pseudotumours of the lungs, though a benign growth, hold a very important position in the differential diagnosis of mass in the lung. They can easily be confused with carcinoma of the lung, though they have a good prognosis. They will continue to present difficulties in arriving at a definite diagnosis in the pre-operative period, but after surgery they completely resolve and do not show recurrences.

References

1. Brun, H. Two interesting benign lung tumours of contradictory histopathology; remarks on the necessity for maintaining chest tumor registry. J. Thorac.Surg., 1939;9: 119.
2. Umiker, W.O. and Iverson, L. Post inflamatory pseudo tumors of the lung; report of 4 cases smulating xanthoma, fibroma of plasmacell tumours. J. Thorac. Surg., 1954; 28 : 55.
3. Scott, H.W., Morrow, A.G., and Payne, T.B.P. Solitary xanthoma of the lung. J. Thorac. Surg., 1949; 17: 821.
4. Bahadori, M. and Liebow, A.A. Plasma cell granulomas of the lung. Cancer, 1973; 31: 191.
5. Childress, W.G. and Adie, G.C. Plasma cell tumors of the mediastinum and lung; report of two cases. J. Thorac. Surg., 1950; 19 : 794.
6. Hermann, P.G., Hillman, B., Pinkus, G. and Harris, G.C. Unusual noninfectious granulomas of the lung. Radiology, 1976; 121 : 287.
7. Alegre, J.A. and Denst, J. Xanthogranuloma as a coin lesion of the lung. Dis. Chest, 1958; 33 427.
8. Wentworth, P., Lynch, M.J. Fallis, J.C., Tusner, J.A.P., Lowden, J.A. and Conen, P.E. Pseudo-tumor of lung; a case report with electron microscope and lipid studies. Cancer, 1968; 22: 345.
9. Nyman, P.T. Plasma cell granuloma of the lung. Am. J. PathoL, 1963; 43: 39a.
10. Kuzein, D.C. Ultrastructural study of a postinflammatory “tumor” of the lung. Cancer, 1975; 36: 149.
11. Shurakusa, T., Miyazaki, N., Kitagawa, T. and Surgiyama, K. Ultrastructural study of pulmonary plasma cell granuloma - report of a case. Br. J. Dis. Chest, 1979; 73: 289.
12. Lane, J.D., Krohn, S., Kolozsi, W. and Whitehead, R.E. Plasma cell granuloma of lung. Dis. Chest, 1955; 27: 216.
13. Cox III, I4. 0., Chang, C.H.J., and Mantz, F. Pseudotumors of the lung. Chest, 1975; . 67 723.
14. McCall, I.W. and Woo-Ming, M. The radiological appearances of plasma cell granuloma cf the lung. Chin. RadioL, 1978; 29: 145.
15. Bonaccorsi, G. and Boreus, G. In tema di nodule solitari del polmone; Pseudotumori postinflammatori. Gaz. Int. Med. Chir., 1964; 69 423.
14. Tchertkoff, V., Les, B.Y. and Wagner, B.M. Plasma cell granuloma of lung; case report and review of literature. Dis. Chest, 1963; 44 : 440.
15. Al-Saleem, T. and Peale, A.R. Lymphocytic tumours and pseudotumors of the lung; report of five cases with special emphasis on pathology. Am. Rev. Res. Dis., 1969; 99: 767.
16. Ackerman, L. Elliot, G.V. and Alnis, M. Localised orga. ing pneumonia; its resemblance to carcinoma, t review of its clinical, r&entgenographic and pathologic features. Am. J. Rcentgenol., 1954; 71: 988.
17. Dubffier, L.D., Bryant, L.R. and Danielson, G.K. Histiocytoma (Fibrous Xanthoma) of the Iung. Am. J. Surg., 1968; 115: 420
18. Mandelbaum, I., Brashear, R.E. and Hull, M.T. Surgical treatment and course of pulmonary pseudotumor (plasma cell granuloma). J. Thorac. Cardovasc. Surg., 1981; 82 : 77.

19. Golbert, Z.V. and Pletnev, S.D. On pulmonary “Pseudotumors”. Neoplasma, 1967; 14:189.