Relationship between Granulomatosis and Cancer

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A relationship between granulomatosis and cancer has been suspected for a long time. The risk of malignancy among patients with sarcoidosis has varied in series from 1 per 100,000 to 71 per 100,000 [1]. The cumulative incidence at 10 years for individual types of malignancy is often described as similar. However, one subgroup analysis found that cases with extra-thoracic involvement were at a slightly higher risk of incident haematologic malignancies (hazard ratio, 1.87; 95% confidence interval, 1.09–3.22) [2]. “Sarcoidosis-lymphoma syndrome” has been described for the apparent association between the 2 entities up to 5-fold in one report [3]. The overall risk of malignancy in a recent meta-analysis [4] of over 25,000 patients with sarcoidosis was only slightly increased for solid tumours, haematologic malignancy, and skin cancer at 10 years, with a risk ratio of 1.19 (95% confidence interval, 1.07–1.32).

The presentation of tumour antigens has been suggested to allow granulomatosis reactions in the vicinity of the tumour itself or in the regional lymph nodes. In this issue of *Respiration*, Arish et al. [5] have presented a careful retrospective study based on a 15-year collection of pathological, radiological and clinical data in their institution. They studied the cases of sarcoidosis occurring after the diagnosis of lung cancer and identified 29 patients. Hae-

matologic malignancies and breast cancer were the most common tumours (28 and 24%, respectively) preceding sarcoidosis. This was a far higher incidence of sarcoidosis occurring among their patients with haematologic malignancies and breast cancer in comparison to their general population, suggesting an association with sarcoidosis secondary to these malignancies. However, this association needs to be confirmed in a prospective study as selection bias from the follow-up routine of these tumours may have played a role in this analysis.

The interesting findings of these authors show that sarcoidosis following malignancies is not different from the idiopathic form. The disease patterns are similar as far as lung parenchymal disease is concerned in 41% of the cases, and for the mediastinal and hilar adenopathies in 85% of the cases. Extra-thoracic manifestations were found in 25%, half of which with lymphadenopathies. The presentations of their series are indeed similar to the presentation described for overall sarcoidosis [6] and, therefore, one does not see that sarcoidosis occurring after a tumour is limited to regional lymph nodes related to the malignancies where antigens of the tumours could have been drained. In another study of 2,048 initial PET scans for staging patients with cancer, 1.1% of the patients were found to have sarcoidosis concomitantly, which was

confirmed histologically. Their presentation was also similar to usual sarcoidosis including extra-thoracic findings, involving nodal, splenic and hepatic lesions [7].

There are now several reports to connect anti-cancerous biologic therapy to the development of sarcoidosis [8, 9]. Their presentation can be rather dramatic in the number of lesions found mimicking dissemination of the original tumour. Their response to steroids seems to be rather

satisfactory, with a good outcome [10]. The study by Arish et al. [5] is interesting because no biologics have been used in their cohort of patients allowing the study of sarcoidosis occurring after the diagnosis of malignancy without these new immunomodulators. It is then shown that the distribution is not centred on the tumour area and that these sarcoidoses are not different from the idiopathic form, with a rather good prognosis.

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