

Presence of macronodules in patients with pulmonary sarcoidosis: investigation into prevalence and clinical meaning

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PURPOSE: We sought to know the prevalence and clinical meaning of macronodules exceeding 5 mm in patients with pulmonary sarcoidosis.

MATERIALS AND METHODS: We retrospectively collected 246 consecutive patients with pathologically-proven sarcoidosis (M:F = 83:163; mean age, 40.7 yrs) from January 2001 to October 2011. Fifteen patients without thoracic involvement of sarcoidosis were excluded. A total of 231 patients were divided into three types of thoracic involvement: (1) Lymphadenopathy alone (n = 103; 44.6%); (2) Parenchymal infiltration alone (n = 15; 6.5%); (3) Both (1) and (2) (n = 113; 48.9%). We identified macronodules in patients with type (1), in order to exclude the possibility of confusion between aggregated micronodules presenting in parenchymal infiltration and macronodules. One or more macronodules exceeding 5 mm was detected in 41 patients (M:F = 11:30; mean age, 47.0 yrs). We evaluated the characteristics of the macronodules in terms of size, number, margin, shape, distance from the pleura, lobar location, and temporal change in size.

RESULTS: A total of 116 macronodules were identified in 41 patients. The mean number of nodules per patient was 2.8 ± 2.7 (median, 2.0; range, 1~16), and the mean size of nodules was 6.3 ± 1.3 mm (median, 6.0; range, 5~10). Most nodules showed well-defined margin (n = 109; 94.0%). Nodules appeared in three shapes: round (n = 72; 47%), ovoid (n = 76; 50%), and triangular (n = 5; 3%). The mean distance from the nearest pleura was 9.3 ± 10.5 mm, and 54 nodules (35.3%) located attaching to the pleura. The nodules showed lobar predilection for the lower lobes (upper, n = 23; middle, n = 19; lower, n = 74). Among 70 nodules with follow-ups of more than 1 month (mean, 2.1 yrs), 53 nodules (75.7%) showed the same changes in size depending on the interval changes of lymphadenopathy, while 12 (17.1%) nodules remained unchanged despite lymphadenopathy decrease.

CONCLUSION: Macronodules exceeding 5 mm are not rare in the patients with pulmonary sarcoidosis. The macronodules morphologically resemble intrapulmonary lymph nodes regarding size, shape, location, as well as they show similar temporal changes with hilar lymphadenopathy.

CLINICAL RELEVANCE: Macronodules are not an uncommon manifestation of sarcoidosis and suggests pertinent to intrapulmonary lymph nodes. The recognition of this feature is helpful for diagnosis of sarcoidosis.