

Ga-67 scintigraphy in chromomycosis

Motohiro SATO, Tohoru TAKEDA, Shinji SUGAHARA,
Nobuyoshi ISHIKAWA and Masayoshi AKISADA

Department of Radiology, Institute of Clinical Medicine, Tsukuba University

We examined an interesting case of chromomycosis that had a characteristic Ga-67 accumulation. This patient had had widespread chromomycosis skin lesions for 8 years. We performed Ga-67 scintigraphy in an attempt to obtain additional information on the site and extent of the lesion. Ga-67 scintigraphy revealed not only all subcutaneous nodules but also an unsuspected enlarged lymphnode and a visceral lesion. This case indicates that Ga-67 scintigraphy is a very useful method to use in detecting the site and extension of chromomycosis, especially in the nodal and the visceral lesions, and sometimes might help in differential diagnosis.

Key words: Ga-67 scintigraphy, Chromomycosis

INTRODUCTION

CHROMOMYCOSIS is a chronic fungal infection of the skin. This disease is mainly observed in tropical areas, especially in Brazil,^{1,2} but in Japan more than 300 cases have already been reported.³ The granuloma with caseous necrosis and giant cells containing the fungi are formed in the skin. Furthermore this granuloma spreads into the visceral organs and lymphnodes, and these visceral lesions are sometimes fatal. We demonstrate an interesting case of chromomycosis, which had a characteristic Ga-67 accumulation.

CASE REPORT

The patient was a 62-year-old man. He first noticed a pupura on his left back eight years ago, and recently this lesion spread all over his trunk. He also suffered from a cough with a fever, and this condition progressively had become worsened. When he was admitted to the hospital, papillomatous verruca with hyperkeratinosis had spread not only on the trunk but also on the head and extremities, and

subcutaneous nodules were found in the umbilical region (Fig. 1), right elbow and other sites. Furthermore, enlarged lymphnodes were found in the left inguinal region. Sclerotic cells, which were most important for the diagnosis of chromomycosis, were detected in the skin and nodal lesions (Fig. 2). On the other hand a chest radiograph and CT scan were performed to find the reason for the cough. These tests showed a sharply defined peripheral mass in the right lower lobe and a poorly defined irregular large mass in the left hilum (Figs. 3, 4), but the nature of these lesions was not determined by these CT findings.

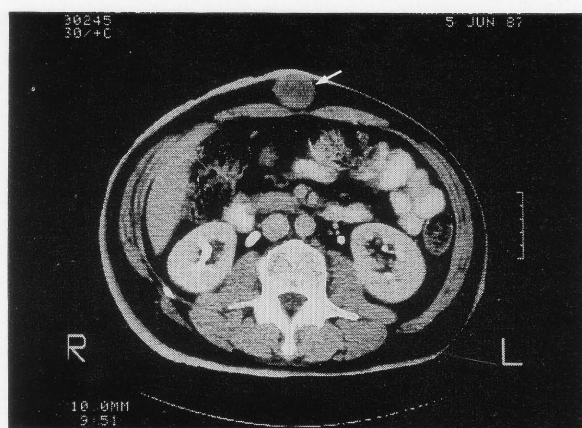


Fig. 1 CT scan of the upper abdomen reveals the subcutaneous nodule of chromomycosis in the umbilical region (white arrow).

Received May 26, 1988; revision accepted July 11, 1989.

For reprints contact: Motohiro Sato, Department of Radiology, Institute of Clinical Medicine, Tsukuba University, 2-1-1 Tennodai, Tsukuba-shi, Ibaraki 305, JAPAN.

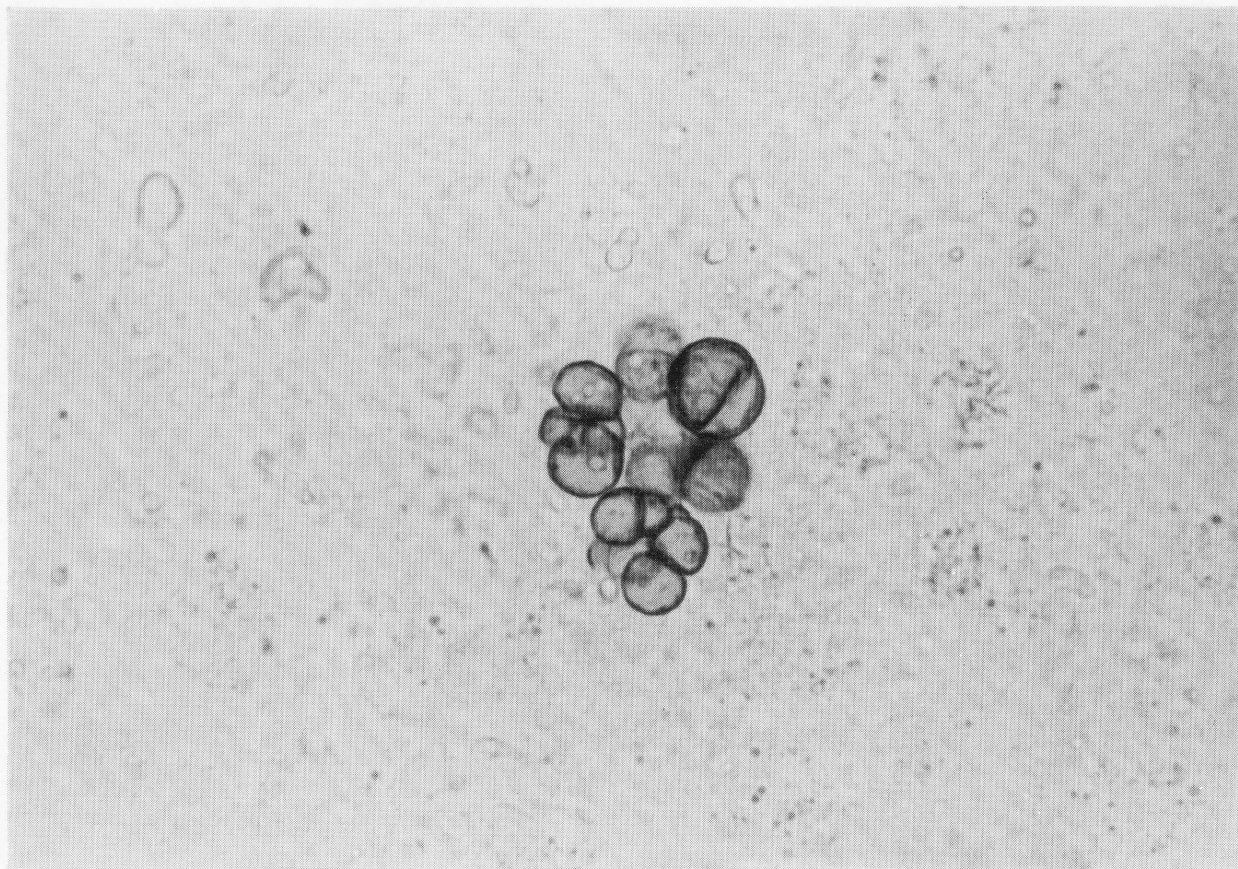


Fig. 2 Sclerotic cells in the specimen from the subcutaneous nodule (H & E, $\times 1,000$), which is the most important for the diagnosis of chromomycosis.

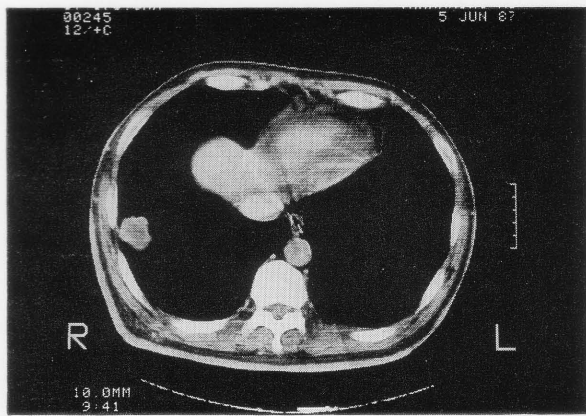


Fig. 3 Posteroanterior chest radiograph demonstrates the abnormal densities in the right lower lobe and the left hilum.

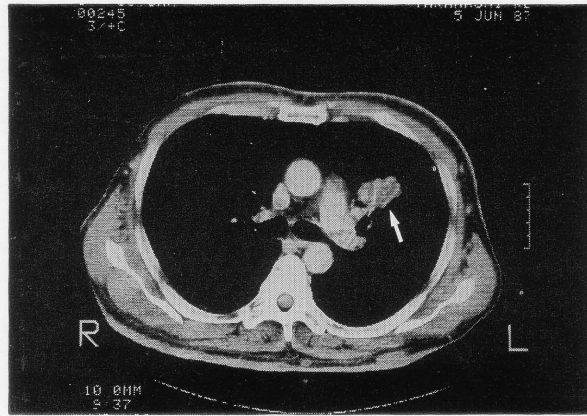
Ga-67 scintigraphy was performed to evaluate the site and extent of chromomycosis. 2 mCi of Ga-67 citrate was injected intravenously. Images with 300,000 counts in three photopeaks (93, 184, and 296 KeV) were obtained 72 hours later, with a large field of view scintillation camera (PHO/GAMMA LFOV) with a high energy collimator. The marked accumulation of Ga-67 citrate was demonstrated in all subcutaneous nodules and in an enlarged lymphnode (Fig. 5). Moreover an unsuspected retroauricular lymphnode was also detected. Biopsy of this nodule revealed a granuloma with sclerotic cells in it. Ga-67 citrate accumulations with different characteristics were found in the two lung lesions. Ga-67 accumulation in the left hilum was clearly seen, but no accumulation was found in the lesion in right lower lobe. After this examination bronchoscopy and TBLB were performed, and the pathological diagnosis was that the lesion in the left hilum was chromomycosis, whereas the lesion in the right lower lobe was a squamous cell carcinoma of the lung.

DISCUSSION

Chromomycosis is a relatively rare dematiaceous

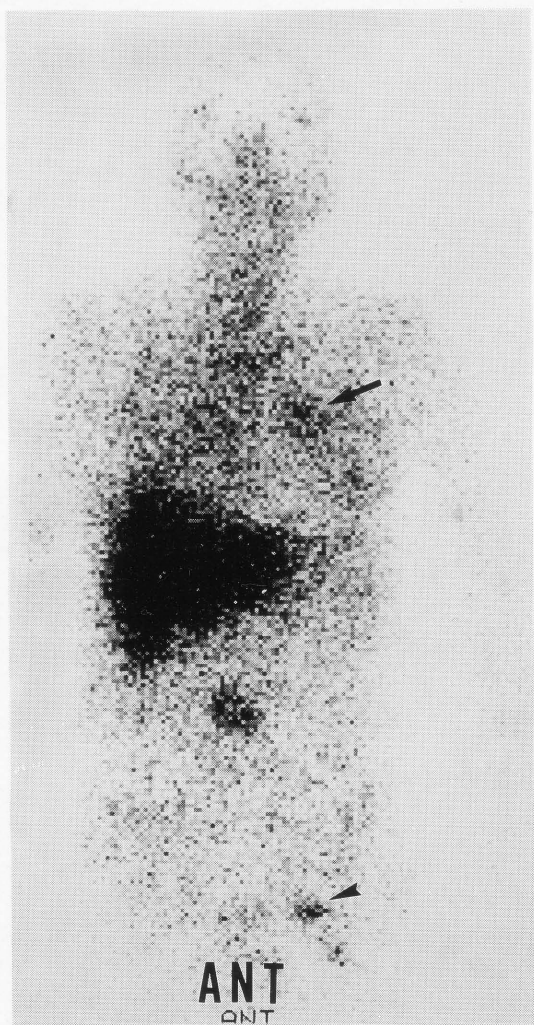


(a)

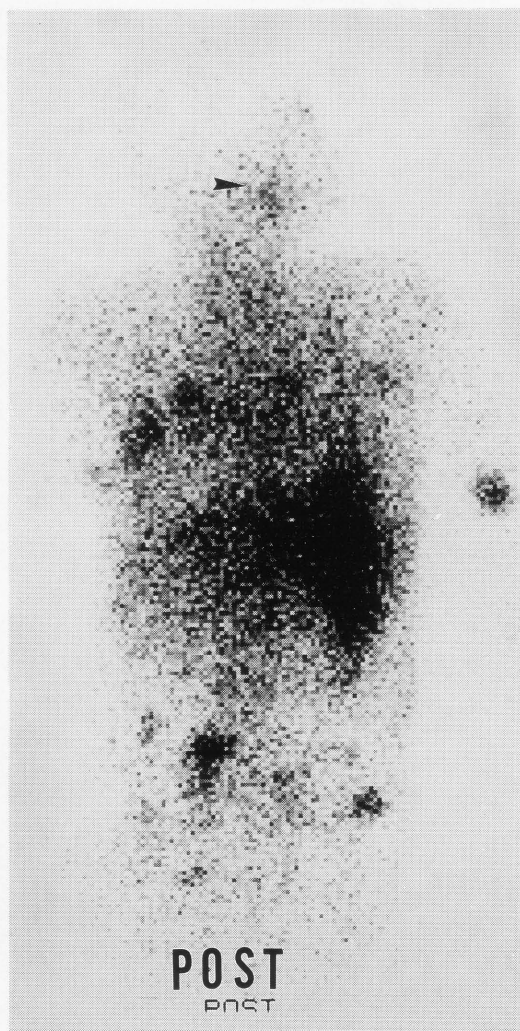


(b)

Fig. 4 CT scan of the right lower lobe (a) and the left hilum (b). Sharply defined mass in the right lower lobe, and ill-defined mass in the left hilum (white arrow).



(a)



(b)

Fig. 5 Anterior (a) and posterior (b) Ga-67 citrate imaging. Abnormal Ga-67 citrate uptakes were found in the subcutaneous nodules (umbilical region, right elbow, and other sites). Also in lymphnodes of left inguinal and retroauricular region (arrow head), and in the visceral lesion of the left hilum (arrow).

fungus infection of the skin. The lesion spreads not only in the skin but also in the visceral organs (hematogenous spread) and lymphnodes (lymphogenous spread).^{2,3} In Japan about 10% of patients have died due to visceral involvement.³ The brain, lung and liver are the commonly involved organs. So it is very important to find metastatic lesions and unsuspected lesions of chromomycosis to facilitate treatment.

Nowadays Ga-67 scintigraphy is widely accepted as an excellent way to detect many kinds of inflammatory diseases.^{4,5} Some applications of Ga-67 scintigraphy were performed to detect South American blastomycosis and coccidiomycosis,^{6,7} and Ga-67 scintigraphy is very sensitive in detecting nodal and visceral involvement of these diseases. For example, Giorgi MCP, et al. have shown that all lesions of South American blastomycosis in 13 cases could be detected by whole body Ga-67 scintigraphy.⁶ But its application in the detection of chromomycosis has not been reported yet.

In this case, Ga-67 scintigraphy detected all clinically suspected lesions in the subcutaneous nodules as well as the clinically unsuspected enlarged lymphnode. Ga-67 scintigraphy also showed the different patterns of accumulation in the two different lesions in the lungs. The nature of these lesions was determined by bronchoscopy and TBLB, and revealed that the lesion in the left hilum, which showed an

accumulation of the Ga-67 citrate, was an involvement of chromomycosis.

Ga-67 scintigraphy was very useful to demonstrate the site and extent of chromomycosis and helpful in differentiating between the two lung lesions in this case.

ACKNOWLEDGMENT

We would like to thank Dr. T. Takase, Department of Dermatology, for her advice and help.

REFERENCES

1. Conant NF, Smith DT, Baker RD, Callaway JL: Manual of Clinical Mycology (3rd Ed.), Saunders, 1971, p. 503
2. Emmons CW, Binford CH, Utz JP, Kwon-Chung KJ: Chromomycosis in Medical Mycology (3rd Ed.), Lea & Febinger, Philadelphia, 1977, p. 386
3. Fukushima R: Chromomycosis in Japan. *Int J Dermatol* 22: 211-219, 1983
4. Tsan MF, Scheffel U: Gallium-67 accumulation in inflammatory lesions. *J Nucl Med* 20: 173 1979
5. Tsan MF: Mechanism of Ga-67 accumulation in inflammatory lesion. *J Nucl Med* 26: 88-92, 1985
6. Giorgi MCP, Camargo EE, Pinto WP, et al: Gallium-67 imaging in the diagnosis of blastomycosis. *Eur J Nucl Med* 13: 300-304, 1987
7. McGahan JP, Graves DS, Palmer PES, et al: Classic and contemporary imaging of coccidiomycosis. *AJR* 136: 393-404, 1981