EVALUATION OF SOFT-TISSUE CALCIFICATIONS IN DERMATOMYOSITIS WITH ^{99m}Tc-PHOSPHATE COMPOUNDS: CASE REPORT

Aristides H. Sarmiento, José Alba, Aldo E. Lanaro, and René Dietrich

Puerto Rico Nuclear Center and the School of Medicine, University of Puerto Rico, San Juan, Puerto Rico

A whole-body scan with ^{99m}Tc-pyrophosphate and ^{85}Sr-nitrate demonstrates extension of calcinosis in one case of dermatomyositis with cutaneous, subcutaneous, and muscular calcinosis. The authors suggest the potential use of ^{99m}Tc-phosphate compounds as an auxiliary instrument in the evaluation of dermatomyositis–polymyositis syndrome.

Soft-tissue uptake of ^{99m}Tc-phosphate compounds was observed incidentally in a case of calcinosis universalis by Pendergrass, et al (*1*).

We describe a case of dermatomyositis with calcinosis demonstrated by clinical, radiologic, and gammagraphic studies.

CASE REPORT

A 29-year-old white woman with diagnosis of dermatomyositis since 1971 developed an ulcer in the left gluteal region with secondary inflammation in May 1974. Physical examination revealed an ulcer on the left buttock, indurated, of 2 cm in depth and 10 cm in diameter, having a bottom granulated tissue with white, spicular material characteristic of calcified tissue. The right elbow was erythematous, hard, painful, fistulized, and secreting pasty material. Several dermic lesions were observed: eyelid erythema, desquamation, and localized skin atrophy. There was no associated malignancy. Laboratory values were normal. Radiographic examination showed extensive soft-tissue calcification with a reticular pattern, specially marked in the thighs and left buttock (Fig. 1).

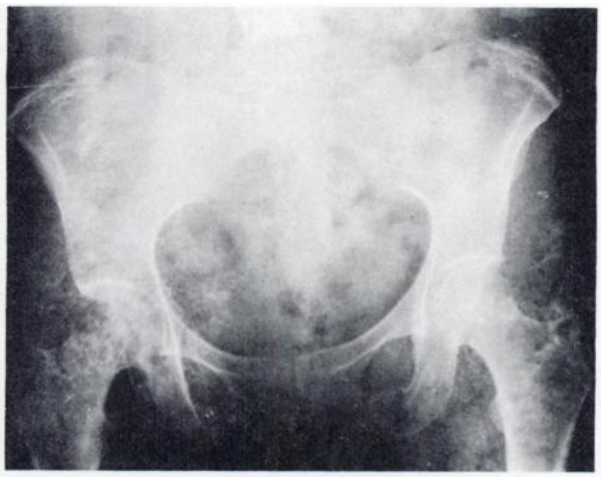

FIG. 1. X-ray examination of pelvis showing soft-tissue calcifications with reticular pattern.

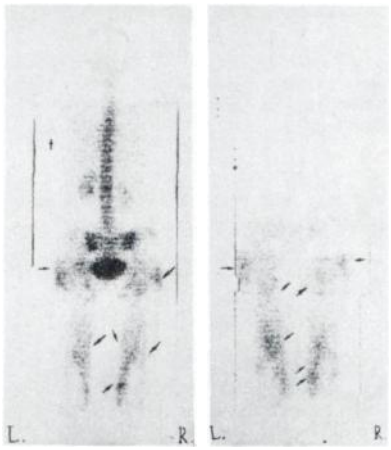

FIG. 2. Left: whole-body rectilinear scan with ^{99m}Tc-pyrophosphate, posterior view. Right: 48-hr rectilinear scan of lumbar region, pelvis, and thigh with ^{85}Sr-nitrate, posterior view. Both scans show similar patterns. Areas of abnormal activity in pelvis correspond to calcifications found on radiography. Arrows indicate soft-tissue uptake.

The ^{99m}Tc-pyrophosphate bone scan, 3-hr delay, showed diffuse and intense soft-tissue uptake particularly in both thighs, buttocks, left elbow, right axilla, and knees. Some calcification foci were more evident from bone scan than from the radiographic studies (Figs. 2 and 3).

A bone scan of the pelvic region and both thighs was then done 48 hr after injection of 100 μCi ^{85}Sr-

Received Sept. 29, 1974; revision accepted Dec. 31, 1974.

For reprints contact: Aristides H. Sarmiento, Nuclear Medicine Division, Puerto Rico Nuclear Center, Caparra Heights Station, San Juan, P.R. 00935.

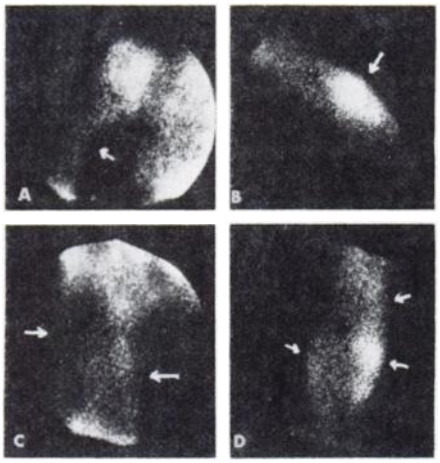

FIG. 3. Anger camera images—^{99m}Tc-pyrophosphate bone scan. (A) right shoulder, anterior view; (B) left elbow, lateral view; (C) right thigh, anterior view; and (D) right knee, anterior view. Arrows indicate soft-tissue uptake.

nitrate to rule out the possibility that the activity in the ^{99m}Tc-pyrophosphate scan was in blood pool. There was no significant difference between the two scans (Fig. 2).

DISCUSSION

Calcifications occurring in polymyositis are included in the group of dystrophic calcifications, which refer to those that take place with normal levels of inorganic ions of calcium and phosphorus in the extracellular fluid. This implies that the alteration is of tissue origin due to the creation of new, favorable conditions or to the loss of local inhibitors of calcification, such as tissue protein-polysaccharides or inorganic pyrophosphate in the extracellular fluid (*2*). Calcinosis has been observed in all types of myositis (*3*) but is more common after a severe episode of acute myolisis and in childhood dermatomyositis (*4*). It can limit activity or physical ability and produce ulcerations and inflammatory reactions (*4*). Radiologic studies are used in the evaluation of calcinosis.

Previous publications have demonstrated that scanning with ^{99m}Tc-phosphate compounds are capable of detecting calcifications in soft tissues when the radiologic methods still give negative results (*5*). It is not difficult to believe that the systematic use of these compounds can increase detection of calcinosis in the polymyositic syndrome.

The case reported here shows that the bone-imaging agents complement the radiologic study and permit a more objective evaluation of the extent and severity of calcinosis.

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