NON-OSSEOUS UPTAKES OF TC-99M PHOSPHONATE DURING THREE PHASE BONE SCAN.

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ABSTRACT

Objective : The purpose of this study was to visualize non-osseous uptakes of bone scanning agent.

Methods : Amongst 51 patients (M21, F30) of age range 8-80 years having three phase bone scan at NNC, Rangpur during January 2000 to January 2002, we looked for non-osseous uptake.

Results : Twenty four patients had non-osseous uptakes of 99 metastable technetium methylenediphosphonate (99m Tc MDP), 19 in kidneys (14 in right, 4 in left kidney, one patient showing hold-up in both kidneys), 3 in breasts (2 in left, 1 in right breast), and two patients had lung uptakes. Renal, pulmonary and mammary uptakes of this series are not always due to malignant process, however, one patient had cisplatin nephrotoxicity.

Conclusion : Non-osseous uptake of bone-seeking radiopharmaceutical is quite common (24/51 i.e. about 48% in this series), however, most of these may be non-malignant.

Key words : Bone scan, Non-osseous Uptake.

INTRODUCTION

Staging of tumours is important both for the selection of appropriate treatment and to provide information about prognosis. Inadequate or inaccurate staging may lead to under-or over-treatment, resulting in failure to care or unnecessary toxicity respectively. The increased sensitivity of bone scanning provides a 6 to 18 months lead over X-rays in demonstrating conversion from focal to metastatic disease.[1] Breast uptake of bone scanning agents is non-specific, it has been reported in the normal breast as well as in benign or malignant disease of breast.[2,3] Holmes et al. showed that 95% of benign lesions including fibroadenomas, mammary dysplasia and cystic mastitis has bilateral uptake, while 25% of malignant lesions showed a similar pattern.[4]

METHODS

Three phase bone scans were performed using 5-20 milli-Curies (mCi) of 99m Tc phosphonate under a computerized gamma camera (Siemens Microdelta). Amongst 51 patients (M21, F30) of age range 8-80 years having three phase bone scans at NMC, Rangpur during January 2000 to January 2002, we looked

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for non-osseous uptakes in all phases i. e. during post-injection flow, blood pool and late static views.

RESULTS

Twenty four patients had non-osseous uptakes of 99 metastable technetium methylene-diphosponate (99m Tc MDP), 19 in kidneys (14 in right, 4 in left kidney, one patient showing hold-up in both kidneys), 3 in breasts (2 in left, 1 in right breast), and two patients had lung uptakes. Renal, pulmonary and mammary uptakes of this series are not always due to malignant process, however, one patient had cisplatin nephrotoxicity.

DISCUSSION

Bone-seeking radiopharmaceuticals had been used for skeletal survey as well as for non-osseous pathology, sometimes serendipitious (incidental) and also purposeful detection e. g. scintimammography. However, the non-specific nature of the findings should be kept in mind.

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