Protein-losing enteropathy detected by Tc-99m-MDP scintigraphy

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Sir,

We read with great interest the article by Uzuner and Ziessman [1]. The authors studied an 11-year-old girl with protein-losing enteropathy (PLE) and concluded that intestinal accumulation of Tc-99m methylene diphosphonate (MDP) was useful for confirming the diagnosis.

Diagnosis of PLE is usually cumbersome and in some cases diagnostic work-up is inconclusive. Therefore, functional imaging modalities are of great importance. In-111 transferrin, Tc-99m human immunoglobulin, Tc-99m dextran and Tc-99m human serum albumin have been used to evaluate PLE. The latter radionuclide is an ideal tracer, because of its low false-positive index, high sensitivity and the absence of serious side effects [2]. Moreover, sequential imaging up to 24 h may enhance the diagnostic value of the study, probably due to the intermittent nature of protein loss. Intestinal accumulation of bone-seeking radiotracers is exceedingly rare but continues to be reported in the medical literature, mainly as an incidental finding when evaluating musculoskeletal pathology, and may pinpoint the diagnosis [3]. Although the precise mechanism of intestinal uptake of Tc-99m-MDP remains uncertain, binding of this radiopharmaceutical to plasma proteins is thought to play a critical role. Inadequate radiopharmaceutical preparation Tc-99m

pertechnetate characteristically leads to its uptake in the stomach, bowel, salivary glands and thyroid. Ergün et al. [4] did not find any specific cause of intestinal accumulation of Tc-99m-MDP in the majority of their patients. They suggested that this may be an intermittent process. Based on our own experience (one already reported [3]), Tc-99m-MDP imaging in patients with PLE shows enhanced abdominal accumulation of Tc-99m-MDP due to an increase in the extracellular volume of distribution of the tracer, because of anasarca, but does not allow better localization of the leakage site. Views obtained after 2 h correspond to the findings of Tc-99m human serum albumin scans.

Radiopharmaceuticals for functional imaging of PLE are not widely available; the diagnosis of PLE cannot be established with Tc-99m-MDP. Nevertheless, intestinal Tc-99m-MDP uptake combined with medical history and clinical assessment may help to diagnose systemic disease.

References

1. Uzuner O, Ziessman HA (2008) Protein-losing enteropathy detected by Tc-99m-MDP abdominal scintigraphy. *Pediatr Radiol* 38:1122–1124
2. Chiu NT, Lee BF, Hwang SJ et al (2001) Protein-losing enteropathy: diagnosis with (99m)Tc-labeled human serum albumin scintigraphy. *Radiology* 219:86–90
3. Meristoudis G, Birbilis C, Ilias I et al (2008) Intestinal accumulation of (99m)Tc-MDP in a patient with protein-losing enteropathy. *Eur J Nucl Med Mol Imaging* 35:224
4. Ergün EL, Kiratli PO, Günay EC et al (2006) A report on the incidence of intestinal 99mTc-methylene diphosphonate uptake of bone scans and a review of the literature. *Nucl Med Commun* 27:877–885

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