# Letters to the Editor

## Vesicoureteral Reflux Mimicking Obstructive Uropathy

**TO THE EDITOR:** A 62-yr-old female with known left-sided vesicoureteral reflux (confirmed on cystoscopy) and a "nonfunctioning" left kidney (Fig. 1) had a bone scan as part of a metastatic workup for carcinoma of the bladder. Initial osseous images revealed findings most consistent with a left-sided obstructive uropathy (Fig. 2). Because the patient was known to have significant vesicoureteral reflux, delayed images were obtained which demonstrated near total clearing of the radioactivity from the left renal collecting system, confirming the absence of an obstructive uropathy (Fig. 3).

Multiple renal abnormalities can be detected on bone scintigraphy including bilaterally increased or decreased uptake of the imaging agent, focally increased or decreased localization of the agent and asymmetry of renal size or function (*1*). Renal asymmetry may be anatomic, i.e., a unilateral large or small kidney or it may be functional with or without a difference in renal size. The causes of renal asymmetry include unilateral obstructive uropathy, previous nephrectomy, and unilateral nonfunctioning kidney (*2*).

Vesicoureteral reflux is induced by patient voiding; in bone scintigraphy the patient is encouraged to void just prior to scanning in order that the osseous structures of the pelvis can be evaluated with only minimal interference from radionuclide activity within the urinary bladder. Consequently, while the standard bone images may suggest obstructive uropathy, delayed imaging, without patient voiding as in this instance, may help to differentiate between obstruction and reflux.

Early diagnosis of vesicoureteral reflux is imperative if recurrent renal infection and loss of renal function are to be prevented; therefore, this condition which may mimic obstructive uropathy should be included as a cause of functional renal asymmetry, on bone scintigraphy. When the index of suspicion is high, renal images performed before and after patient voiding may help to confirm the presence of vesicoureteral reflux.

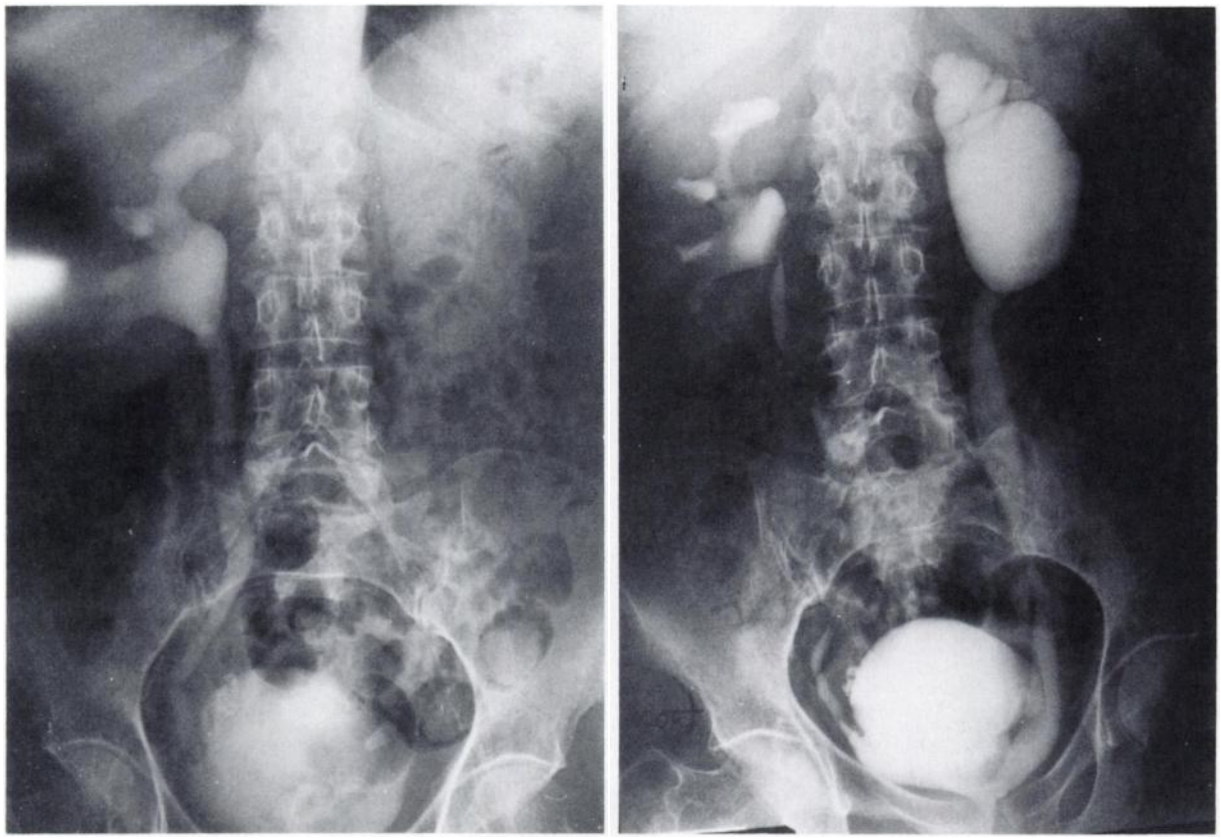

**FIGURE 1**
A: Thirty-minute radiograph from i.v. pyelogram demonstrates mild dilatation of right renal pelvis and ureter. Faint nephrogram effect on left side is identified. B: Postvoid film performed ~15 min after (left) demonstrates dramatic vesicoureteral reflux on left

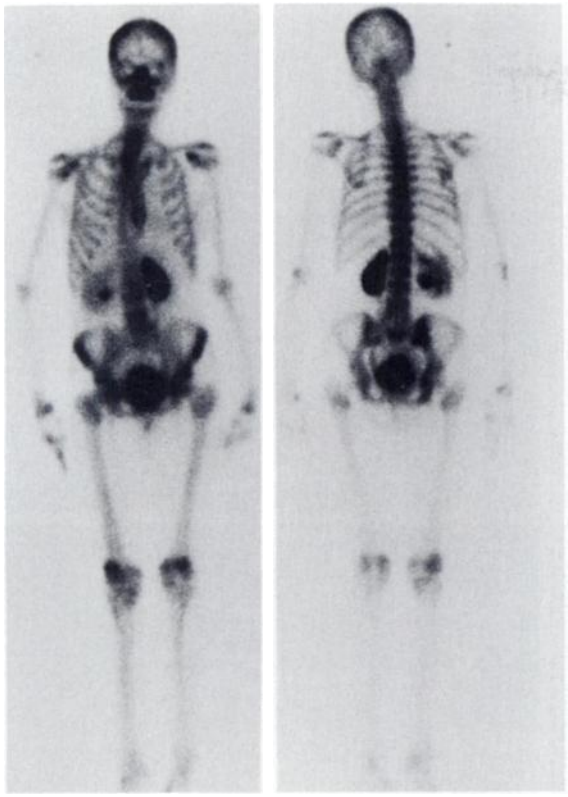

**FIGURE 2**
**Whole-body bone scintigraphy, performed after patient voiding, demonstrates intense radionuclide accumulation within dilated left renal pelvis and ureter suggesting obstructive uropathy**

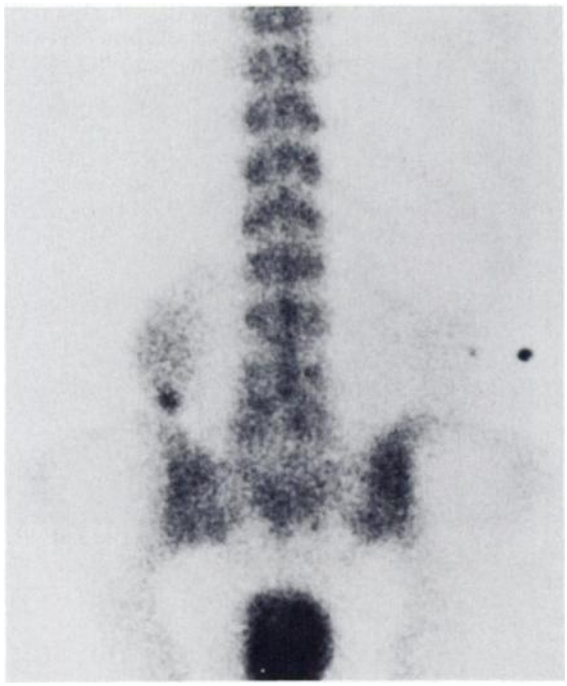

**FIGURE 3**
**Delayed posterior image of kidneys demonstrates only mild residual radionuclide activity within left renal pelvis, confirming that initial findings were secondary to vesicoureteral reflux and not obstruction**


**References**

1. Neely HR, Witherspoon LR, Shuler SE: Genitourinary findings incidental to bone imaging. In *Bone Scintigraphy*, Silberstein EB, ed. New York, Futura Publishing Company, 1984, pp 371-397
2. Hattner SH, Miller SW, Schimmel D: Significance of renal asymmetry in bone scans: Experience in 795 cases. *J Nucl Med* 16:161-163, 1975



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## A Magic Bullet for Breast Cancer

**TO THE EDITOR:** This is a plea for continued efforts to utilize estrogen and progesterone receptors in the search for better methods of detection and treatment of breast cancer.

I am a biochemist who has breast cancer which has spread. I have learned the hard way that present detection methods have their limitations. In my case, the bone scan technique using the bone-seeking tracer, methylene diphosphonate complexed with technetium-99m, could not differentiate between metastases and rib fractures. Neither could bone scans, x-rays, or CT scans detect the metastases which are present in my lymph nodes and other soft tissues.

I have been bombarded with electrons and gamma-rays for therapy in two series, but these radiations are not very specific magic bullets. I am now in the midst of my third series of chemotherapeutic injections. The radiation and chemotherapy have been helpful, but only palliative.

As a target for the long-sought-for magic bullet for breast cancer, could estrogen or progesterone receptors on breast ductal epithelial cells be used? As a cancer-seeking bullet, could a ligand which would bind to these receptors be synthesized?

For diagnosis, could the ligand be complexed to a tracer which could be imaged by radioactive or other techniques? For therapy, could this postulated ligand be complexed with a cytotoxin, which might be radioactive (such as iodine-131) or which might be a metabolic inhibitor?

Tamoxifen has been useful in therapy of breast cancer, and its mechanism of action seems to involve competing with estrogen for estrogen receptors on the tumor. Perhaps tamoxifen or a similar compound could be complexed with a radioactive tracer for diagnosis or with a radioactive or nonradioactive cytotoxin for therapy.

If the ligand for estrogen or progesterone receptors were a nonprotein compound, it might have an advantage over monoclonal antibodies in having less risk of eliciting antibody formation by the host.

In patients like myself who have had both breasts, the uterus, and both ovaries removed, the binding of the postulated ligand to estrogen or progesterone receptors in tissues other than those on breast carcinoma cells may not be a problem.

We really do need that magic bullet for breast cancer. Keep trying, and good luck.


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