

of adequate autoregulation in the normal kidney. GFR should not be altered by 30% in normals! Please note that the physiologic decrease in GFR and ERPF due to age cannot be used to explain the results of our study. The expected mean age-dependent difference in GFR between each of the three groups would be 4 ml/min. The ERPF would differ by about 25 ml between each group (6). Lastly, age is not known to cause the described swings in renal blood flow.

At this time we remain excited about the use of the renogram in hypertension. We do not know enough about the observed hippurate transport disturbance and the postulated vascular responses to recommend the procedure for routine patient evaluation. We are convinced, however, that the conclusions drawn from our study were justified. We believe that research-oriented nuclear medicine specialists should re-evaluate the gamma-camera radiorenogram in the patient with hypertension.

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### Unexpected Breast Uptake of Tc-99m PIPIDA

A 21-yr-old man was admitted to the hospital after sustaining an abdominal stab wound. Significant medical history revealed that he was a transvestite and was taking a large but undisclosed quantity of conjugated estrogens. Physical examination, apart from the obvious abdominal trauma, revealed marked breast-tissue development bilaterally with no evidence of surgical implants, inflammation, or trauma. At laparotomy the liver and the head of the pancreas were found lacerated. During the immediate postoperative period, the patient became febrile and his serum bilirubin became elevated to 5-6 mg/dl (normal, 0.2-1.2). In addition there was a fall in the hematocrit to 19% requiring multiple blood transfusions.

Hepatobiliary scintigraphy, after injection with 7 mCi of Tc-99m-tagged *p*-isopropyl iminodiacetic acid (PIPIDA), was done with a large-field-of-view camera. This demonstrated bowel activity by 10 min, but no visualization of the gallbladder within 3 hr. Of note was the unexpected and persistent localization of the radiopharmaceutical in both breasts (Fig. 1).



FIG. 1. Hepatobiliary scintigram, 3 hr after injection of 7 mCi of Tc-99m PIPIDA, demonstrating tracer uptake in both breasts (top arrows). Bottom arrow points to loop of displaced bowel secondary to prior surgery.

Celiac angiography revealed a faint blush in the area of the superior pancreaticoduodenal artery, suggesting a pseudoaneurysm. A second abdominal surgical exploration demonstrated a fistula between the superior pancreaticoduodenal artery and the common bile duct. Intraoperatively there was no evidence of acute cholecystitis. The remaining hospital course was complicated by the development of serum hepatitis, with eventual recovery.

This is an unusual report of breast localization of a Tc-99m-labeled N-substituted iminodiacetic acid (IDA) as an incidental finding during hepatobiliary scintigraphy. The mechanism of this breast uptake of Tc-99m PIPIDA is unknown, but it is probably related to exogenous hormonal stimulation. Potential mechanisms, singly or in combination, for uptake of Tc-99m PIPIDA in the hormonally stimulated (male) breast include:

1. Coincidental affinity of breast hormone receptors for the agent.
2. Lipophilicity of the agent.
3. Alterations of the radiopharmaceutical by in vivo ligand-exchange reactions (perhaps estrogen-influenced).
4. Presence of radiopharmaceutical impurities not detected by routine chromatography.
5. IDA chelating (possibly associated with increased lactoferrin present in stimulated breast tissue) (1).

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