**CASE REPORT**

**BREAST SECRETION OF \(^{99}\text{Tc}\) IN THE AMENORRHEA-GALACTORRHEA SYNDROME**

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The fact that iodine ingested by a nursing mammal passes into the breast secretion has been recognized for a number of years (1). Indeed, the concentration of administered radioiodide in the milk may be many times the plasma value (2,3). Various iodide analogs—that is, anions of the seventh group of the periodic table—share with iodide the property of being concentrated by the salivary glands, gastric secretion and thyroid gland (4–6). Studies of the presence of these anions in human breast secretion have been limited because of the obvious reluctance to administer radioactive materials that might enter the suckling child. Patients with the various amenorrhea-galactorrhea conditions also have a milky breast secretion although its precise relationship to the usual postpartum milk has not been fully defined. Such patients who are not nursing children present a potentially useful population for studying the entry of iodine analogs into breast secretion.

The pertechnetate ion in the form of \(^{99}\text{TcO}_4^-\) has gained wide use in brain and thyroid scanning because of the short half-life of \(^{99}\text{Tc}\). We have administered the pertechnetate ion to two women with amenorrhea and galactorrhea and found that it was concentrated in the breast secretion.

**Case 1.** A 30-year-old married white female, who had never been pregnant, was admitted for the investigation of amenorrhea and galactorrhea of 4-years duration. During the course of a thyroid study (as part of her pituitary evaluation) she was given 4 mCi of sodium pertechnetate intravenously. Seventeen hours later the ratio of radioactivity in 1 ml of breast secretion/1 ml of plasma was 2.95:1.

**Case 2.** A 20-year-old single white female was also admitted for evaluation of amenorrhea and galactorrhea of 4-years duration. Twenty hours after administration of 4 mCi of sodium pertechnetate intravenously, a sample of the breast secretion was obtained. The milky fluid, dried at 100°C for 2 hr, contained 0.187 gm of solids/ml. The ratio of radioactivity in 1 ml of breast secretion/1 ml of plasma was 5.2:1. By comparison with a standard of her administered dose, it was found that the fluid contained 15% of the injected radioactivity per liter of secretion.

Both patients demonstrated the ability to concentrate \(^{99}\text{Tc}\) in the breast secretion. The concentration achieved, however, was less than that usually reported for radioiodide. There are a number of causes of nonpuerperal galactorrhea, and a report by Sheld and Charme reviews some current concepts (7). Even if studies on analog secretion (by women with the amenorrhea-galactorrhea syndromes) do not prove of use in defining the mechanisms of the secretion or in separating the various causes of nonpuerperal galactorrhea, they may make contributions toward understanding the effects of various medications (such as perchlorate) on the secretory process.

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**REFERENCES**


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