A young female, mother of a 16-month-old baby and diagnosed case of differentiated classical papillary carcinoma of thyroid with metastasis to the regional lymph nodes, underwent total thyroidectomy with left modified neck dissection and central compartment clearance. The patient had a history of lactation and was advised to stop breastfeeding days before the planned preablation radioiodine $^{131}$I scintigraphy. The scan demonstrated iodine avid focus in the neck (marked). Another area of diffuse uptake was observed in the right chest region in addition to the left upper abdomen (corresponding to stomach uptake). This uptake in the right chest region had no obvious pathological explanation and corresponded to uptake in the right breast (Fig. 1).

In view of the unusual unilateral breast uptake, the patient was enquired about her breastfeeding practice: she gave a history of unilateral breastfeeding from the right breast only to which the findings of the $^{131}$I scintigraphy corroborated.

Sodium iodide symporter (NIS) is an intrinsic membrane protein implicated in iodide uptake in the thyroid follicular cells. Physiological NIS expression in other cells/tissues include salivary gland ductal cells, breast tissue during lactation, epithelial and parietal stomach cells, intestinal enterocytes, placenta, and testicular cells. While the radioiodine uptake in the lactating mammary glands are typically observed bilaterally, the present case demonstrates an interesting phenomenon of differential physiological NIS overexpression unilaterally in a lactating woman related to her breastfeeding practice (from the same-sided breast).

Fig. 1: Radioiodine diagnostic scintigraphy illustrating tracer accumulation in the right breast only (arrow marked) with no corresponding uptake observed in the left breast in this lactating woman, who had stopped breastfeeding days before the study.

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