^{111}In-pentetreotide uptake in accessory spleen: A potential pitfall in somatostatin receptor scintigraphy

Sir,

Accessory spleen is a potential pitfall in radiologic and radionuclide evaluation of oncologic patients which may cause misdiagnosis as left adrenal tumor or metastasis. It is a benign and relatively common splenic anomaly so that seen 16% of the normal population with contrast enhanced abdominal computerized tomography (CT). They mostly localized in splenic hilum, but may be seen in any locations in the abdomen.[1] Accessory spleen may show physiological increased ^{111}In-pentetreotide uptake and mimic malignancy in somatostatin receptor scintigraphy (SRS) as with other imaging techniques. Even though some findings described such as well-defined, homogeneously enhancing, uniform round soft tissue densities smaller than 2 cm that might be meaningful, it is not always possible to make a definitive diagnosis with CT.[2,3]

Herein, we present a 49-year-old female patient with cushing disease underwent transsphenoidal adenomectomy, which was requested SRS with ^{111}In-pentetreotide for suspected ectopic adrenocorticotropic hormone (ACTH) secreting tumor, due to high serum cortisol and ACTH levels during regular postoperative follow-up. SRS was performed after intravenous injection with 6 mCi ^{111}In-pentetreotide (octreoscan) using a dual-headed gamma camera (Symbia S, Siemens, USA) with medium-energy parallel hole collimators. Planar whole body images with thorax and abdomen single-photon emission CT (SPECT) images were obtained at 4 and 24 h. In addition to physiological uptake in liver, spleen, and kidneys, two foci of increased tracer uptakes were detected adjacent to spleen and in the nephrosplenic space [Figure 1]. In the retrospective assessment of concurrent abdomen CT, well demarcated round lesions which were isointense with spleen suggesting accessory spleen were detected. These lesions were matched with the focal increased tracer uptakes on SRS. A selective spleen scintigraphy using 99mTc-labeled heat denatured erythrocytes spleen scintigraphy (SSS) was also performed for correlation. Modified *in vitro* labeling method was used for SSS. Thirty minutes after the injection of 10.0 mCi (370 MBq) heat-denatured, ^{99m}Tc-labeled autologous red blood cells, an abdomen SPECT, and planar images were acquired. It showed two foci of increased uptake due to accessory spleen which was matched with the lesions on SRS.

In the literature, majority of the reported cases related with accessory spleen were based on false positive evaluation, especially in splenectomized patients.[3,4] However, Sels *et al.* presented that lesions which assessed in favor of accessory spleen on CT and magnetic resonance imaging were shown to be neuroendocrine tumor with tissue biopsy later.[5] In our case, instead of performing histopathological analysis, we verified the increased ^{111}In-pentetreotide uptakes with SSS. Splenic scan with ^{99m}Tc-labelled denatured red blood cells is a cost-effective and noninvasive radionuclide imaging method used in detecting ectopic splenic tissues such as accessory spleen and splenosis with high sensitivity and specificity.[6,7] Detection of the intrapancreatic accessory spleen has been reported using ^{68}Ga-DOTANOC positron emission tomography/CT.[8] In conclusion, one should be aware that it is important to make a definitive diagnosis in the suspicion of accessory spleen in any imaging modalities and suspicious uptakes around the spleen in SRS for an accurate clinical management in patients with malignancies. Since CT is not enough for all cases and histopathological verification of each lesion is not feasible, we recommend SSS as a final diagnostic step in such cases.

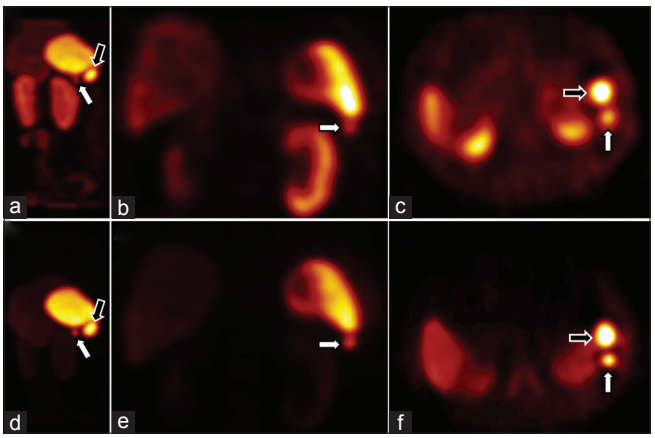

Figure 1: ^{111}In-pentetreotide scintigraphy single-photon emission computed tomography showed two foci of increased uptakes adjacent to spleen (black arrow) and in the nephrosplenic space (white arrow) in (a) (raw image), (b) (coronal slice), and (c) (axial slice). Selective spleen scintigraphy using 99mTc-labeled heat denatured erythrocytes showed two foci of increased uptake which were matched with the lesions on somatostatin receptor scintigraphy and compatible with accessory spleen in (d) (raw image), (e) (coronal slice), and (f) (axial slice)

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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Quick Response Code:

Website: www.ijnm.in

DOI: 10.4103/0972-3919.178341

How to cite this article: Salihoglu YS, Elri T, Erdemir RU, Yazgan O. ^{111}In-pentetreotide uptake in accessory spleen: A potential pitfall in somatostatin receptor scintigraphy. Indian J Nucl Med 2016;31:161-2.