

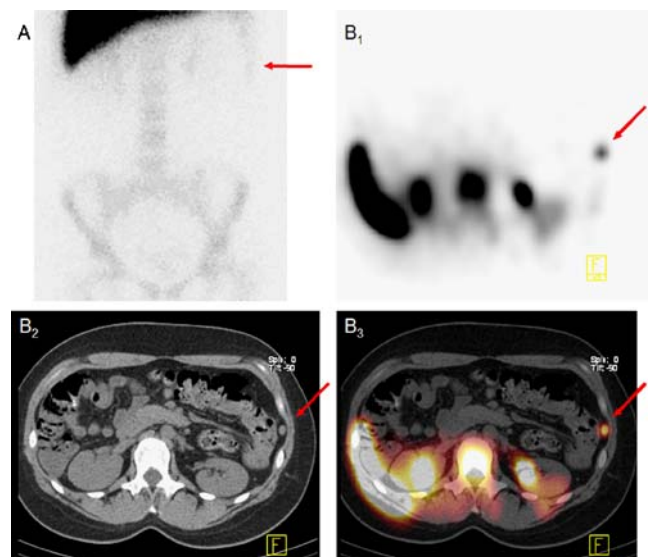
## Localization of splenosis using $^{99m}\text{Tc}$ -damaged red blood cell SPECT/CT and intraoperative gamma probe measurements

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A 33-year-old female with a history of recurrent idiopathic thrombocytopenic purpura and significant thrombocytopenia, status post splenectomy, presented for a damaged red blood cell (dRBC) scan. After injection of 15 mCi of  $^{99m}\text{Tc}$ -labeled dRBC, planar dRBC images (A: anterior image) showed no convincing evidence of splenic remnants. Therefore, SPECT/CT acquisition (Siemens Symbia, Malvern, PA, USA) was performed. Three small soft tissue masses were demonstrated in the left upper abdomen on CT, and all of them displayed increased uptake on co-registered SPECT images. In the selected plane shown in **B<sub>1</sub>–B<sub>3</sub>** (**B<sub>1</sub>**, SPECT; **B<sub>2</sub>**, CT; **B<sub>3</sub>**, fusion image; transaxial views), only one of these three splenic remnants (*red arrows*) is visualized as a small soft tissue mass demonstrating significant uptake on the SPECT and SPECT/CT images.

Since the intraoperative localization of small splenic remnants can be challenging after splenectomy, intraoperative gamma probe localization (IMI NodeSeeker, Los Angeles, CA, USA) was performed after injecting 1.5 mCi  $^{99m}\text{Tc}$ -labeled dRBC. Lesions were detected lateral to the mobilized descending colon with a target to background ratio between 3.4 and 8. The presence of splenosis was confirmed at histology.



In keeping with the experience of Horger et al. [1], this case demonstrates the significant advantages of dRBC SPECT/CT over planar imaging in clearly identifying small soft tissue lesions as splenic remnants and, at the same time, facilitating anatomic localization of these lesions. The use of a gamma probe is additionally helpful in precisely localizing splenules during the operation and in guiding the surgeon more effectively.

### References

1. Horger M, Eschmann SM, Lengerke C, Claussen CD, Pfannenbergl C, Bares R. Improved detection of splenosis in patients with haematological disorders: the role of combined transmission-emission tomography. *Eur J Nucl Med Mol Imaging* 2003;30:316–9.

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