Imaging Findings of an Uncommon MAA Vascular Mapping Complication

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Introduction

Tc-99m MAA imaging and vascular mapping are routinely performed before Y-90 radioembolization to treat hepatic tumors. The procedure uniquely serves multiple purposes, including an anatomical survey of hepatic arterial anatomy, interrogating expected microsphere distribution to avoid nontargeted embolization during therapy, and evaluating for possible hepatic shunting into the systemic venous system.

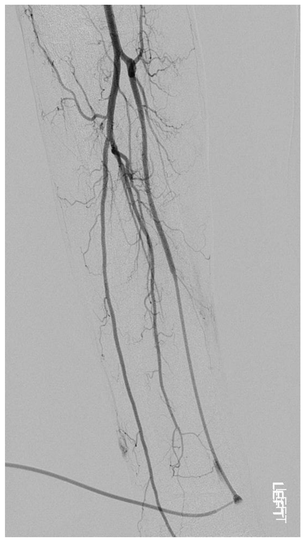


Figure 1. L radial artery cannulation, demonstrating arterial muscle perforators

Figure 2. Illustration of distal upper extremity arteries

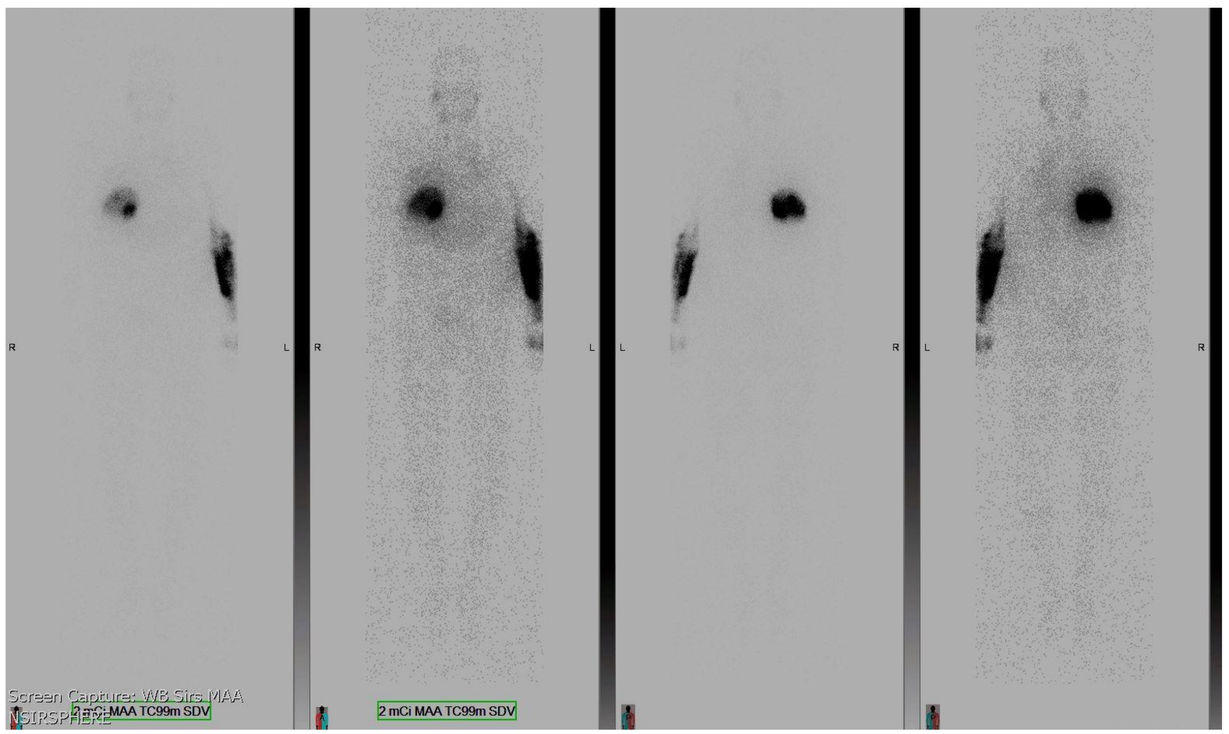
Figure 3. NM MAA planar images, with uncommon soft tissue uptake

Figure 4. NM SPECT image demonstrating MAA localization in liver

Case Description

A 58-year-old man with alcoholic cirrhosis and hepatic segment VII LI-RADS 5 lesion on MR underwent a routine Tc-99m MAA mapping via left radial access in preparation for Y-90 radiation-segmentectomy. The procedure was uncomplicated, and the patient underwent routine planar and SPECT-CT imaging following MAA administration.

Nuclear medicine images revealed a normal lung-shunt fraction but had uncharacteristic radiotracer accumulation in the left upper extremity. The patient was asymptomatic, and no adverse effect was noted.



Discussion

Our case demonstrates an uncommon complication from MAA administration and vascular mapping performed via left radial access. Radiotracer accumulation within the soft tissues of the upper extremity is rarely seen.

The radiotracer distribution is within the lateral forearm, in a radial-predominant muscle perforator arterial distribution. We suspect this appearance may have been a result of either incomplete catheter flush following radiotracer injection and/or extravasation at the level of the sheath during injection or upon removal of the injection catheter.

References

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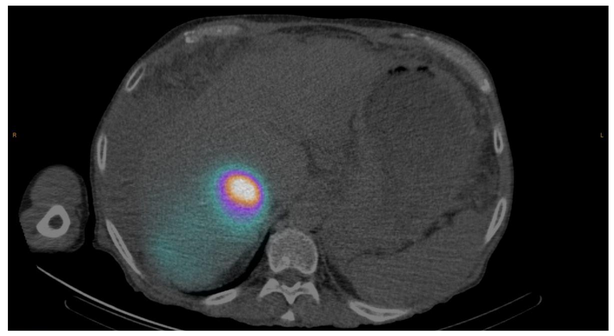

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