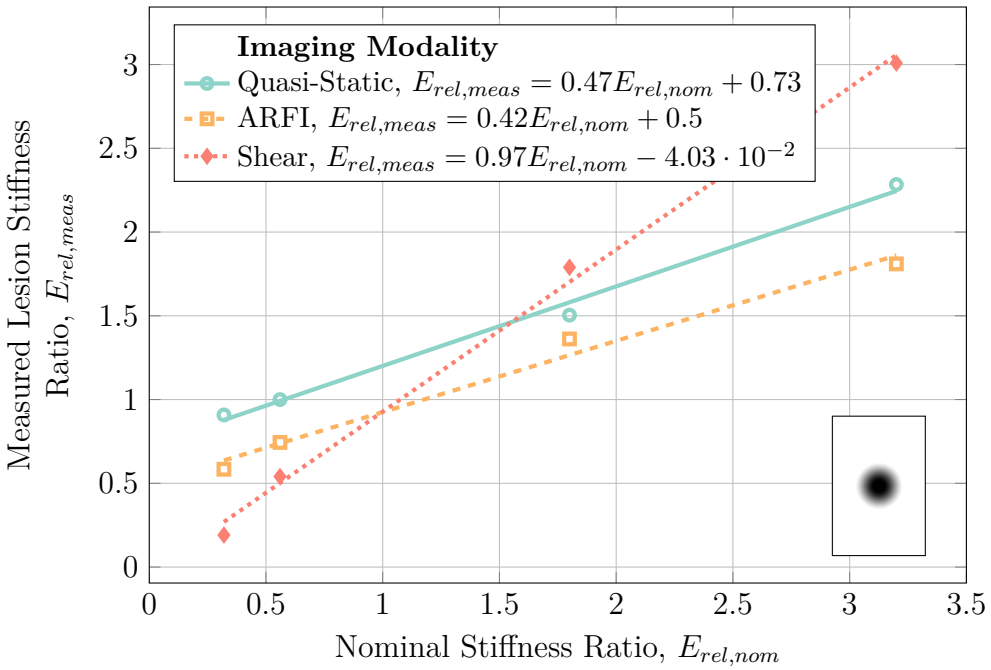


**Fig. 6.3:** Detection sensitivities of blurred-boundary spherical lesions with radii of 10 mm with blur radii of 7.5 mm using quasi-static elastography, ARFI imaging, and shear wave speed quantification.

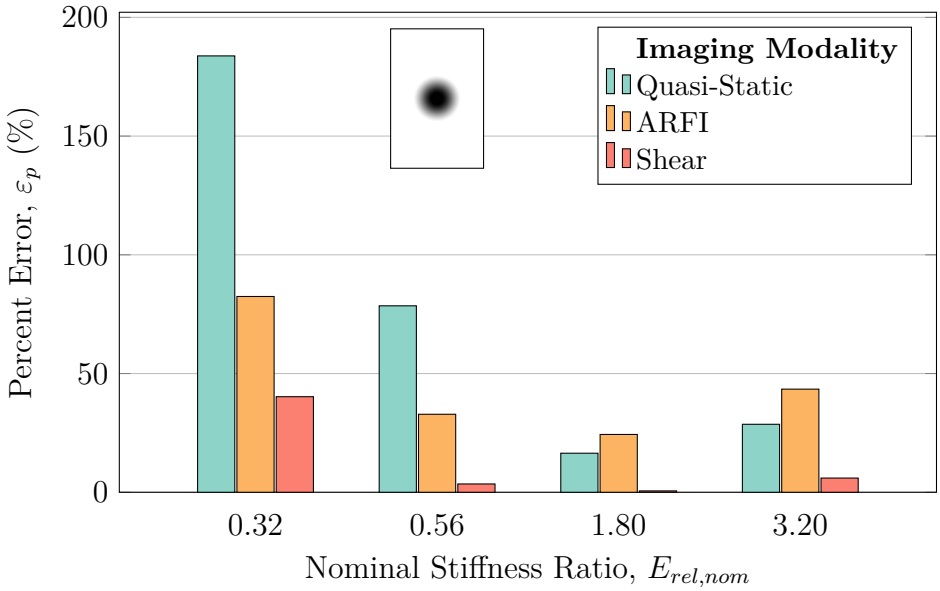


**Fig. 6.4:** Percent error of measured stiffness ratios for blurred lesions with radii of 10 mm and blur radii of 7.5 mm across the three investigated modalities.

injured tissue, a model comprising numerous small lesions clustered together to form a greater lesionous region was developed. Fig. 6.5 shows a cross-section of the characterization curves for this model when small lesions with radii of 1 mm were clustered with a density of 20 $cm^{-2}$. Although none of the investigated modalities were able to distinguish individual lesions in the various cluster models, all were able to differentiate the lesionous region as a whole. Once again, shear wave speed quantification proved to be the most accurate method with it's characterization curves coming the closest to a one-to-one mapping of true to measured stiffnesses. Of note in this case, however, is that even shear wave speed quantification was still substantially less sensitive to lesions than an ideal case—all investigated modalities both over-estimated the stiffness of unstiff lesions and under-estimated the stiffness of stiff lesions.

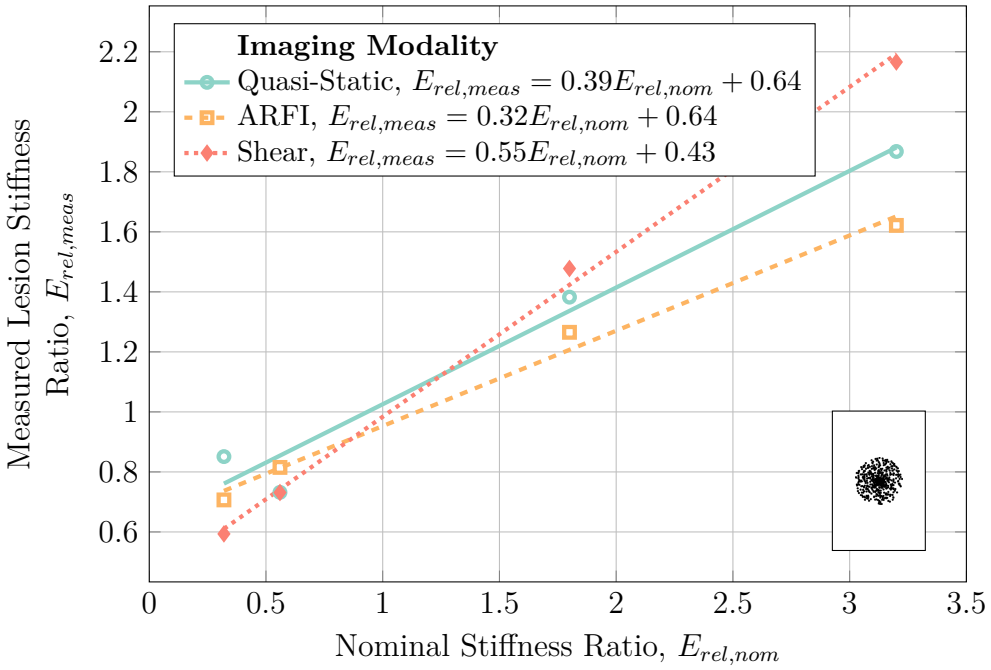


**Fig. 6.5:** Detection sensitivities of clustered lesions with a cluster density of 20 $cm^{-2}$ and individual radii of 1 mm using quasi-static elastography, ARFI imaging, and shear wave speed quantification.