Table S1. Imaging criteria for diagnosis of the benign lesions in this study.

Diagnosis	Imaging Diagnosis Criteria
Soft Tissue Tumors	
Schwannoma	General features: . Well-defined mass . Fusiform mass eccentrically positioned in relation to parent nerve . Fat-split sign (+) T1: . Homogeneously isointense to slightly hyperintense relative to muscle T2 with fat suppression: . Heterogeneously hyperintense to muscle Post-enhanced T1 with fat suppression: . Heterogeneously intense enhancement
Hemangioma	General features: . Well-defined mass . Maybe lobulated . Commonly have intralesional fat and phleboliths T1: . Isointense or hypointense to muscle on T1-weighted imaging . Intralesional hyperintense component (fat) T2: . Heterogeneously hyperintense on T2-weighted images . Intralesional hypointense nodule (phleboliths) Post-enhanced T1 with fat suppression: . Gradually intense enhancement
Lipoma	General features: . Well-defined mass MRI: . Homogenously hyperintense on non-fat-suppressed images . Homogeneously hypointense on fat-suppressed images . No significant enhancement
Cyst	General features: . Well-defined mass T1: . Homogeneously and significantly hypointense T2: . Homogenously hyperintense Post-enhanced T1 with fat suppression: . No enhancement or mild capsular enhancement
Bone tumors	
Fibrous dysplasia	General features: . Elongated, mildly expansile lesion in long bone . Well-defined lesoin . Variable internal sclerosis depending on the underlying constituents T1: . Homogeneously, isointense to slightly hyperintense relative to muscle T2: . Variable T2 signal changes ranging from hypointense regions to areas of hyperintense signal, including chondroid elements and areas of cystic change . No surrounding marrow edema Post-enhanced T1 with fat suppression: . Enhancement in the areas with high T2-weighted intensity
Enchondroma	General features: . Geographic, well-defined, osteolytic mass

. Lobular morphology.
. Usually with matrix mineralization (calcification)

T1:
. Isointensity to hypointensity relative to muscle
. Intermixed with areas of hypointensity corresponding to matrix mineralization

T2:
. Hyperintensity relative to muscle
. Intermixed with areas of hypointensity corresponding to matrix mineralization
. No surrounding marrow edema

Post-enhanced T1 with fat suppression:
. No significant enhancement or subtle enhancement around calcifications
. May have septal and peripheral (multilobular rim-like) gadolinium enhancement (should rule out chondrosarcoma)