

Osteoblastic metastases distinguished from enostoses using CT attenuation measurements

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A team of Boston researchers found that CT attenuation measurements can be used to distinguish untreated osteoblastic (bone-related) metastases from enostoses (benign bone lesions). Based on this conclusion, some biopsies and additional radiologic studies could be avoided, according to a paper published in the August 2016 issue of the *American Journal of Roentgenology*.

"While imaging has become an integral part of diagnosing [patients](#) presenting with malignancy, it can be confusing when an osteoblastic lesion is identified in the presence and absence of a primary malignancy," said Connie Y. Chang, Division of Musculoskeletal Imaging and Intervention, Department of Radiology, Massachusetts General Hospital in Boston. "As CT use has increased, the frequency of incidentally detected lesions has also increased" [1].

Chang is the corresponding author associated with the retrospective study, "Distinguished Untreated Osteoblastic Metastases from Enostoses Using CT Attenuation Measurements," which is available through open access on ARRS's website at <http://www.arrs.org>.

The study group comprised 62 patients with 279 sclerotic bone lesions found at CT (126 enostoses in 37 patients and 153 metastases in 25 patients). While the authors admitted that the sample size was small, the study concluded that a mean CT attenuation of 885 Hounsfield units

(HU) and a maximum attenuation of 1050 HU provide reliable thresholds below which a metastatic lesion is the favored diagnosis. The HU is a quantity commonly used in CT scanning to express CT numbers in a standardized and convenient form.

The detection of [metastatic disease](#) is crucial because it allows accurate diagnosing and determination of prognosis and can drastically change treatment, the study said. The most common malignancy of bone is metastatic disease, affecting approximately 400,000 people in the United States each year [2, 3]. Prostate, breast, and lung cancer account for approximately 80% of skeletal [metastases](#) [2-6]. A problem arises when an osteoblastic lesion does not have typical features of a benign entity, such as an enostosis.

More information: Adam Ulano et al. Distinguishing Untreated Osteoblastic Metastases From Enostoses Using CT Attenuation Measurements, *American Journal of Roentgenology* (2016). [DOI: 10.2214/AJR.15.15559](#)

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