Atrial myxomas and thrombi: comparison of imaging features on CT

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OBJECTIVE: The purpose of our study was to compare the imaging features of atrial myxomas and thrombi using CT and to assess the accuracy of CT for determining the origin of myxomas in comparison with surgical findings.

MATERIALS AND METHODS: From July 2006 until June 2008, 23 patients (15 women, eight men; mean age, 63 +/- 14 years) with atrial myxomas (n = 13) and thrombi (n = 11) who underwent dual-source CT coronary angiography were included in this retrospective study. Two independent and blinded readers evaluated quantitative (CT attenuation and size) and qualitative (location, origin, shape, mobility, prolapse, and calcifications) parameters at CT. The shape and origin of myxomas were compared with the findings at surgery.

RESULTS: No significant differences regarding the CT attenuation of myxomas in comparison with thrombi were found (43 +/- 14 HU vs 57 +/- 30 HU; p = 0.23). Myxomas were significantly larger than thrombi (33 +/- 16 mm vs 21 +/- 7 mm; p < 0.05). The lesions were found equally in the left and right atria (p = 0.11). The origin (p < 0.001), shape (p < 0.05), mobility (p < 0.01), and occurrence of prolapse (p < 0.01) differed significantly between the lesions. Calcifications did not differ between the lesions (p = 0.2). In comparison with surgery, the origin of myxomas was correctly evaluated by CT in 11 of 13 patients (fossa ovalis, n = 5; interatrial septum, n = 4; and lateral atrial wall, n = 2), whereas CT misclassified the origin of two myxomas (posterior and lateral wall left atria at CT vs fossa ovalis at surgery).

CONCLUSION: Atrial myxomas and thrombi can be differentiated by their distinguishing features of size, origin, shape, mobility, and prolapse. CT is accurate in determining the origin of myxomas but may fail in some cases.

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