Imaging findings of Castleman Disease of the Abdomen and Pelvis

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Introduction

Castleman disease is a rare, usually benign process of unknown cause, characterized by lymphocyte proliferation. The cytology and core histological diagnosis of Castleman disease may be difficult, and the misdiagnosis of lymphoma may result [1-2]. The purpose of this study was to describe the most suggestive CT & MRI features of Castleman disease in the abdomen and pelvis and improve the recognition of this rare disease.

Materials and Methods

10 patients with pathologically proved Castleman disease in the abdomen (n=9) and pelvis (n=1) were included in this study. Patients were 18~56 yeas old (mean = 40); 7 were men and 3 women. Imaging findings (CT&MRI, n=4; only CT, n=4; only MRI, n=2) were retrospectively reviewed and correlated with clinical and pathologic findings.

Results

The lesions were divided into those with localized (n=9) and disseminated (n=1). The pathologic subtypes of all 9 cases of localized disease were hyaline vascular type. Imaging findings showed a single larger mass in six and a single dominant mass with small satellite nodules in three. On plain CT images, the lesions manifested as homogeneous soft masses, which is isoattenuating to muscle. After intravenous injection of contrast media, most of the masses enhanced sharply (5/7) with the attenuation similar to large arteries at arterial phase and delay scans. On MR imaging, the lesions also were homogenous and had isointense or slightly low signal intensity compared with that of muscle on T1 weighted images and high signal intensity on T2 weighted images, and showed contrast enhancement in a similar pattern to contrast enhanced CT. After intravenous injection of contrast media, areas of central lower radial attenuation with in the mass were noted in 4 cases of large masses (>5-cm) and proved to be a fibrotic component pathologically. The pathologic subtypes of 1 cases of disseminated disease were plasma cell type. Imaging findings showed several well-defined nodules lied in the retroperitoneal zone that enhanced sharply with the attenuation similar to large arteries after intravenous injection of contrast media.

Conclusion

CT & MRI features of Castleman disease in the abdomen and pelvis are closely associated with its pathology. The most suggestive CT & MRI features of localized & hyaline vascular type of Castleman disease include a single larger mass or a single dominant mass with small satellite nodules, enhanced sharply with the attenuation similar to large arteries and areas of central lower radial attenuation with in the larger tumor after intravenous injection of contrast media. Although in general, the degree of enhancement in plasma cell types is thought to be less than that in hyaline vascular type; marked enhancement was noted in the case of this study.

Reference

1 Moon WK, Im JG, Kim JS, et al. J Comput Assist Tomogr, 1994, 18:43-46.

2 Meador TL, McLarney JK. AJR , 2000, 175: 115-118.

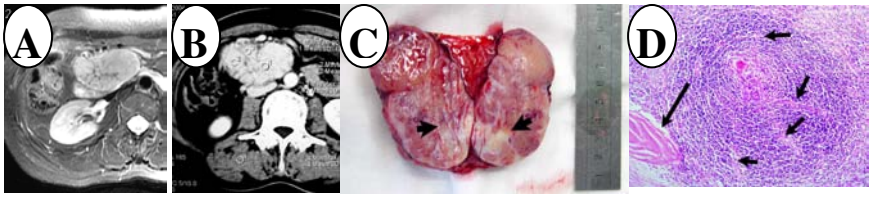

FIG.1. Localized hyaline-vascular Castleman disease in an 52-year-old woman. A: Axial T2-weighted (fast SE, 2,000/90) MR image shows a hyperintense mass with a central radial hypointense area suggesting fibrotic components. B: Venous phase CT shows a large enhancing mass with central area of low attenuation unenhanced. C: Photograph of a cut section of resected specimen shows the central fibrotic bands or bundles (arrowheads) radiating to the periphery and interspersed within the mass. D: Pathology shows typical finding of hyalinevascular Castleman disease. Note the concentric rings of small lymphocytes surrounding an atrophic follicle and a hyalinized vessel (short arrow) entering the follicle and collagenous fiber (long arrow). Hematoxylin-eosin; ×200.

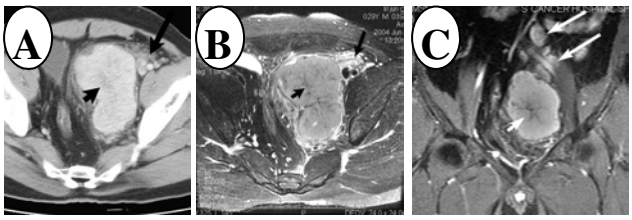

FIG.2. Localized hyaline-vascular Castleman disease in a 29-year-old man. A: On delayed CT scan shows a large enhancing reniform mass with central area of low attenuation (short arrow) in the pelvic and inguinal region. Note the small satellite nodules (long arrow) adjacent to the mass. B: Axial T2-weighted (fast SE, 2,000/90) MR image shows a hyperintense mass with a central radial hypointense area (short arrow) suggesting fibrotic components which is displayed more obvious on MR T2 image than on CT image. C: Contrast-enhanced coronal T1-weighted (fast SE, 600/30) MR image shows a large mass with a central radial hypointense area(short arrow) suggesting fibrotic components. Note enlarged lymph nodes (long arrows) above the mass.