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The value of MDCT in diagnosis of hyaline-vascular Castleman's disease

Xiaoli Sun [a], Cheng Liu [b], Rengui Wang [a,*], Xuejun Zhu [c], Li Gao [d], Jiuhong Chen [e]

[a] Department of Radiology, Beijing Shijitan Hospital affiliated to Capital University of Medical Sciences, Yangfangdian Tieyiyuan, Road No. 10, Haidian District, Beijing, 100038 China
[b] CT Department, Shandong Medical Imaging Research Institute, China
[c] Dermatology Department, Beijing University First Hospital, China
[d] Department of Radiology, Beijing University First Hospital, China
[e] Healthcare, Siemens Ltd., China

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ABSTRACT

Purpose: Castleman's disease (CD) is an uncommon entity characterized by a massive growth of lymphoid tissue. There are two types: the hyaline-vascular (HV) type and the plasma cell (PC) type. The purpose of this study was to evaluate the clinical value of multiple detector computed tomography (MDCT) in the diagnosis and planning of treatment for hyaline-vascular CD.
Materials and methods: Fifty-two cases of confirmed hyaline-vascular CD were retrospectively reviewed. Unenhanced and contrast-enhanced MDCT scans had been performed in all patients, followed by surgery and pathological analysis of the lesion. Original MDCT transverse and reconstructed images were used for image interpretation. Features of the lesion and its adjacent structures were identified.
Results: The lesion was present in the thorax of 24 patients and the abdomen in 28. Obvious features of hyaline-vascular CD (especially feeding vessels and draining veins) and its adjacent structures were demonstrated on 52 patients.
Conclusion: On MDCT imaging, original MDCT transverse and reconstructed images provide an excellent tool for diagnosis of hyaline-vascular CD and have high value in the determination of a treatment plan.

1. Introduction

Castleman's disease (CD), also known as angiofollicular lymph node hyperplasia or giant lymph node hyperplasia, is an uncommon benign lymphoproliferative disorder characterized by a massive growth of lymphoid tissue. The original description was published in 1956 [1]. The major symptom is asymptomatic lymph node enlargement. On the basis of histopathology, CD is categorized as two types: the hyaline-vascular (HV) type and the plasma cell (PC) type. Clinically CD is classified into two types – localized and disseminated CD, the former is typically of the hyaline-vascular type and is amenable to surgical excision, and the latter typically belongs to the plasma cell type and is associated with more complicated systemic manifestations [2–4].

This disorder is often undiagnosed or misdiagnosed. For this reason, very few patients have been reported and only very limited information was available in the literature. Hyaline-vascular CD is manifested in the form of benign, painless, slow lymph node enlargement that is generally asymptomatic. Complete surgical removal is recommended as a course of curative treatment [5]. However, these masses are typically hypervascular with large feeding vessels and draining veins [6]. Therefore, life-threatening hemorrhage would happen if the blood vessels cannot be identified during the operation.

In recent years, with the development of multiple detector computed tomography (MDCT), it has been possible to display more information on the features of the lesion, especially the vasculature, which could assist the surgeon in planning safer surgery. Although single case reports of the CT findings of CD have been illustrated in the literature, to the best of our knowledge, MDCT imaging with post-processing technique in patients with hyaline-vascular CD has not yet been described.

The purpose of this study was to analyze the MDCT imaging with post-processing technique in patients with hyaline-vascular CD and to evaluate the clinical value of MDCT in the diagnosis of the lesions and surgical planning.

2. Materials and methods

2.1. Patients

Between August 2002 and December 2010, 52 patients with hyaline-vascular CD (24 men and 28 women) were retrospectively reviewed for this study. Ages ranged from 13 to 71 years (mean age of 34 years). All patients had undergone MDCT examination.

* Corresponding author. Tel.: +86 010 63926133; fax: +86 010 66953359.
E-mail address: 490150302@qq.com (R. Wang).

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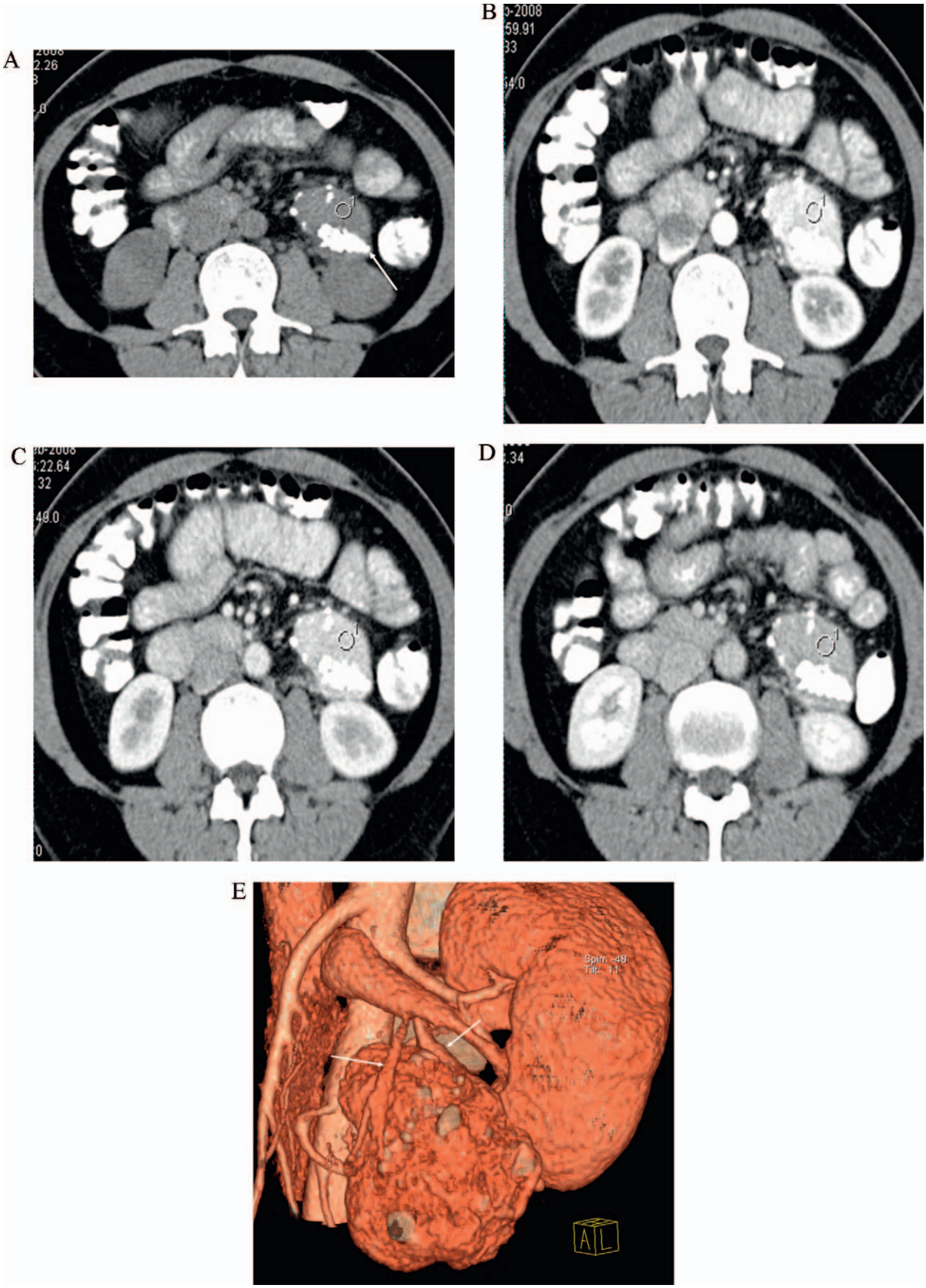

Fig. 1. (A) 49-year-old woman with left retroperitoneal hyaline-vascular Castleman's disease who presented with vague left abdominal pain. Unenhanced abdominal axial MDCT scan shows well-defined retroperitoneal mass with typical arborizing calcifications (arrow). (B) Contrast-enhanced abdominal axial MDCT scan shows intense enhancement of mass at arterial phase (CT = 156.7Hu). (C) Contrast-enhanced abdominal axial MDCT scan shows intense enhancement of mass at portal vein phase (CT = 135.6Hu). (D) Contrast-enhanced abdominal axial MDCT scan shows moderate enhancement of mass at delayed phase (CT = 97.4Hu). (E) Volume rendering MDCT images shows the dilated feeding artery and draining vein (arrows).