

## Inflammatory Pseudotumor of the Inguinal Lymph Node: A Case Report<sup>1</sup>

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Inflammatory pseudotumor of a lymph node is a rare cause of benign inguinal lymphadenopathy, and this mimics the malignant causes of inguinal lymphadenopathy. The imaging features of inflammatory pseudotumor affecting the inguinal lymph nodes have not previously been described. We report here on a case in which the lesion was depicted on the contrast-enhanced CT scan as a well-defined mass with strong enhancement. Inflammatory pseudotumor of a lymph node may be included as one of the rare causes of inguinal lymphadenopathy.

**Index words :** Lymph nodes

Tomography, X-ray computed

Granuloma, plasma cell

Groin

Diagnosis, differential

Inflammatory pseudotumor is a benign reaction that has been described in both genders of all ages, and in almost any location (1, 2). It is characterized histologically by the presence of acute and chronic inflammatory cells with a variable fibrous response (2). Its pathogenesis is uncertain, but the lesion is generally regarded as reactive or postinfectious, and it originates from an inflammatory process (2). It has been reported to occur in

many organs, including the lung and orbit, though its occurrence in the lymph node is rare. To the best of our knowledge, only a few cases of inflammatory pseudotumor of the lymph node have been described in the literature (3 - 6). Two of these reports included the radiologic findings of inflammatory pseudotumor affecting the lymph nodes (4, 6).

We describe the CT findings of inflammatory pseudotumor of the inguinal lymph node.

### Case Report

A 35-year-old man presented with a palpable mass of several years duration in the left inguinal area. He was otherwise well with no symptoms of unexplained fever, night sweats and weight loss.

Physical examination revealed a hard, non-tender mass, which was presumed to be lymph node enlargement. There was no evidence of enlargement of the other nodal groups or hepatosplenomegaly.

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Received July 26, 2007 ; Accepted September 12, 2007

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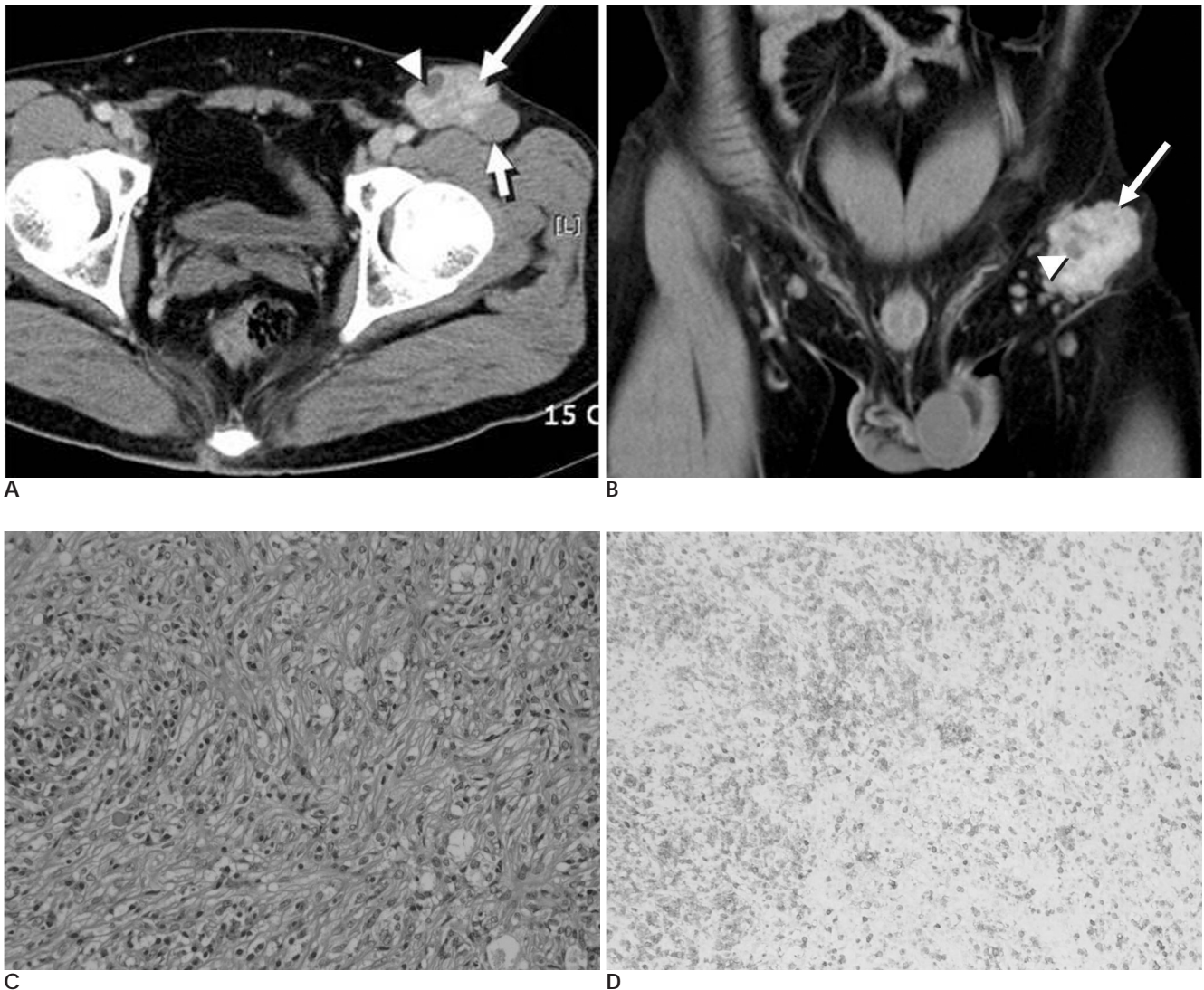
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The initial investigations, including the complete blood count, electrolytes, liver function tests and chest radiograph, were all within their normal ranges. The Epstein-Barr virus serology and autoimmune antibodies were also negative.

Contrast-enhanced CT scan of the abdomen and pelvis showed about a  $5.0 \times 3.0$  cm sized well defined mass with strong enhancement in the left inguinal area. Focal low density within the mass, which was presumed to be necrosis or cystic change, was also shown.

Abutting and invasion to the adjacent muscle was evident (Fig. 1). The radiologic diagnosis was lymphadenopathy. Contrast-enhanced CT scan of the chest showed no abnormal findings such as primary foci or other lymphadenopathies. Excisional biopsy was performed. The pathologic results indicated inflammatory pseudotumor of the left inguinal lymph node.



**Fig. 1.** A 35-year-old man with inflammatory pseudotumor of the inguinal lymph node.

**A, B.** Axial (**A**) and coronal (**B**) images of the contrast-enhanced CT scan show about a  $5.0 \times 3.0$  cm sized well defined mass with strong enhancement (long arrow) in the left inguinal area. Focal low density within the mass (arrowhead), presumed to be necrosis or cystic change, is also shown. Abutting and invasion to the adjacent muscle (short arrow) are evident. Excisional biopsy was performed.

**C.** Photomicrograph of a histologic specimen shows cytologically bland spindle cells (myofibroblasts) with a prominent mixture of lymphocytes and plasma cells that are replacing the lymph node structures (H & E staining, original magnification  $\times 100$ ).

**D.** Photomicrograph of an immunohistochemistic specimen for detecting smooth muscle actin shows the strong immunoreactivity of the myofibroblasts (original magnification  $\times 100$ ). The pathologic results indicated inflammatory pseudotumor arising from an inguinal lymph node.

## Discussion

Inflammatory pseudotumor is a chronic inflammatory tumefaction of an unknown origin. Because the term "inflammatory pseudotumor" is nonspecific and these lesions have a variety of histologic presentations, several alternative names have been used to refer to them: inflammatory myofibroblastic tumor, plasma cell granuloma or pseudotumor, xanthomatous pseudotumor, pseudosarcomatous myofibroblastic proliferation, inflammatory myofibroblastic proliferation and myofibroblastoma. The term "inflammatory myofibroblastic tumor" has recently come to be commonly used on the basis of the electron microscopic and immunohistochemical findings (1, 7). The World Health Organization (WHO) continues to classify inflammatory myofibroblastic tumor as a distinct borderline lesion with uncertainty as to whether it is reactive or neoplastic in nature.

A number of cases have been reported since the first description of inflammatory pseudotumor of the lymph nodes was published in 1988 (3); this tumor shows no predilection for any age, gender or ethnicity. It is a benign form of lymphadenopathy, usually involving a single node, but multiple nodes may be also affected at one or more sites. Moran et al. (5) described three stages; in the first stage there are multiple small foci of spindle cell proliferation and inflammatory response with preserved nodal architecture and no fibrosis. In the following two stages, there is progressive destruction of nodal architecture with initially increasing inflammatory and fibroblastic infiltrate and then complete replacement of the node by sclerosis is finally observed.

One third of the patients present with asymptomatic nodal enlargement. The rest have pain or constitutional symptoms such as fever and weight loss. Symptomatic patients usually present with several laboratory abnormalities (elevation in the erythrocyte sedimentation rate, mild anemia, polyclonal hypergammaglobulinemia, peripheral eosinophilia and increased lactate dehydrogenase) and evidence of one or more enlarged lymph nodes (3). One of the most important problems is the unexplained fever. The differential diagnosis of the unexplained fever has to be made among a large number of clinical entities, and some of which are malignancies. Because the usual presence of fever, fatigue, night sweats, palpable lymph nodes, and spleen enlargement is associated with an insidious and prolonged onset of disease, clinicians may consider the diagnosis of lymphomatous malignant processes to be responsible for the clinical picture. Only histologic evidence can allow a correct diagnosis. Because inflammatory pseudotumors mimic malignant tumors both clinically and radiologically, the radiologist should be familiar with this entity and so avoid unnecessary radical surgery when possible.

On the radiologic report of inflammatory pseudotumor involving lymph node by Gunny (4), contrast-enhanced CT of the neck demonstrated several lymph nodes with uniform low attenuation and the tumor did not demonstrate significant contrast enhancement. MRI of the neck demonstrated peripheral intermediate signal intensity with central hypointensity on the T1 weighted imaging and peripheral hypointensity with central hyperintensity on the T2 weighted and STIR imaging. With gadolinium, the lymph nodes demonstrated avid rim enhancement extending into the adjacent fat planes and overlying sternocleidomastoid muscle. On another radiologic report of inflammatory pseudotumor involving lymph node by Spannuth (6), contrast-enhanced CT of the abdomen and pelvis demonstrated an ill-defined, retroperitoneal soft-tissue density, and lymphadenopathy.

Conversely, in our study, the contrast-enhanced CT scan showed a well defined mass with strong enhancement in the left inguinal area, like that of the previous reports (8-10). The radiologic findings of inflammatory pseudotumor are nonspecific. US demonstrates a variable pattern of echogenicity, and the lesion has been described as hypo- or hyperechogenic with ill-defined or well-defined margins (8). Contrast-enhanced CT may demonstrate homo- or heterogeneity and hypo-, iso- or hyperdensity (9). Delayed enhancement has frequently been observed in these inflammatory pseudotumors, probably because of the accumulation of extravascular contrast media in the fibrotic component within the mass (10). These variable radiologic findings may be attributed to varying degrees of fibrosis, cellular infiltration and the dynamic change occurring during the inflammatory process.

In summary, we report here on a case of inflammatory pseudotumor of an inguinal lymph node, which is a very rare inguinal lymphadenopathy. The lesion was depicted on the contrast-enhanced CT scan as a well-defined mass with strong enhancement. This tumor may be included as one of the rare causes of inguinal lymphadenopathy.

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