Computed Tomography of Decubital Ischemic Fasciitis: a case report

HSU-CHAO CHANG¹ YUAN-TUNG CHU² YUAN-YU HSU¹ KUN-ENG LIM¹ MENG-JEN HUANG³

Department of Radiology¹, Department of Pathology², Department of Orthopedic Surgery³, Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, New Taipei, Taiwan

ABSTRACT

Decubital ischemic fasciitis, also called atypical decubital fibroplasia or ischemic fasciitis, is a rare pseudosarcomatous proliferation of atypical fibroblasts occurring predominantly in elderly and debilitated patients. These lesions occur in the deep subcutaneous tissue at pressure points or bony prominences. Herein, we report a case of decubital ischemic fasciitis in the hip of a 59-year-old male who had a history of local blunt injury (the trauma occurred 20 years ago). Clinical presentations, computed tomography (CT) findings, and histopathology are described. To the best of our knowledge, CT findings of decubital ischemic fasciitis have not been reported in the literature and few patients with decubital ischemic fasciitis have a history of local trauma. When a mass lesion involves subcutaneous tissue and an iliotibial band, abutting but not invading the greater trochanter, decubital ischemic fasciitis should be considered in the differential diagnosis. Ischemic fasciitis is not consistently associated with old age or debilitation. It is important to recognize this entity to prevent unnecessary interventions or overtreatment.

CASE REPORT

A 59-year-old male presented to our hospital with the complaint of a painful mass on the right lateral thigh that had been ongoing for two months. He had a history of blunt injury to the right lateral thigh (twenty years ago). Focal induration was noted without pain or tenderness during the intervening 20 years. No skin ulcerations, or surgical interventions were mentioned. The medical history of the patient was significant for hypertension, coronary artery disease, and atrial fibrillation with control. No physical debilitation was identified.

A physical examination revealed a hard and fixed mass in the right proximal thigh, lateral to the greater trochanter. A pelvic radiograph and right hip radiograph revealed no bone lesions but an increased soft-tissue shadow over the right lateral hip. Plain computed tomography revealed a soft tissue mass, 7.6 x 6.0 x 13.2 cm at the orthogonal dimension, involving the deep subcutaneous tissue and upper iliotibial band, and abutting but not invading the greater trochanter. Some low-density foci inside the mass were found. No calcification was observed. The adjacent iliotibial band was thickened and the tensor fasciae latae muscle was indented.

Correspondence Author to: Meng-Jen Huang
Department of Orthopedic Surgery, Taipei Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, New Taipei, Taiwan
No. 289, Jian-Guo Road, New Taipei 231, Taiwan
but not invaded by the mass. The initial diagnosis was a sarcoma over the right hip (Fig. 1).

The patient received tumor excision. A well-encapsulated tumor abutting on the tensor fasciae latae muscle in the right lateral thigh was observed during surgery. The pathologic description was as follows: grossly, the tumor was brown in color and elastic with necrosis in the central area. Microscopically, ischemic fasciitis composed of central coagulative necrosis and peripheral fibrotic areas with focal granulation-like tissue with fibroblastic cells and hemosiderin-laden histiocyte deposition, extravasated blood cells and inflammatory cell infiltrate were observed. The pathologic diagnosis was ischemic fasciitis (Fig. 2).

**DISCUSSION**

Ischemic fasciitis was first reported as rubric atypical decubital fibroplasia in 1992 by Montgomery et al. [1]. They described the lesion as a rare pseudosarcomatous proliferation of fibroblasts that is usually located over bony protuberances, mainly occurring in immobile elderly or debilitated patients. Perosio and Weiss described a series of six patients with similar lesions in 1993, and used the term ischemic fasciitis [2]. Ilaslan et al. noted these tumors as decubital ischemic fasciitis, combining the two existing terms in 2006 [3].

Common sites of occurrence of these lesions are around bony prominences. These tumors have been reported in the sacral region, shoulder, hip, iliac crest, lumbar region, buttock, scapular region, and chest wall [1, 2, 4]. Other sites for these lesions, including the vulvogenital region and limbs, have also been reported [1, 4, 5].

Liegl et al. [4] reviewed 44 cases of decubital ischemic fasciitis in 2008. The ages of the patients at presentation ranged from 23 to 96 years (median: 74 years). Only 10 patients were less than 70 years of age. Tumor sizes ranged from 1.3 to 10 cm (median: 4.7 cm). Only half of the patients had a definitive history of physical debilitation. Four patients had a history of local trauma at the lesion site. Three of these four patients had a prior surgical procedure.
In the current case, the patient was 59 years old and the tumor size was larger than those previously described. We thought the reason for the occurrence of this case of decubital ischemic fasciitis could have been the local trauma to the patient at a young age with little awareness of the condition due to a long-term induration.

Ilaslan et al. [3] first described the MRI features of decubital ischemic fasciitis. The MRI features of all three patients’ masses were isointense signal intensities on T1-weighted sequences; heterogeneously hyperintense signal intensities on T2-weighted images; and intense enhancement after administration of gadolinium. Areas that did not enhance in the center indicated necrotic foci. The overlying skin and superficial subcutaneous tissues were intact. However, these features are nonspecific and common to many necrotic sarcomas and abscesses. The distinctive presentation in these patients was the location of the masses at a pressure point (the greater trochanter), in the subcutaneous tissue, crossing the iliotibial band, and abutting but not invading the greater trochanter. Another case report revealed the same MRI findings [6]. In our case, the CT scans revealed a soft tissue mass involving the deep subcutaneous tissue and upper iliotibial band. The hypodense areas indicated necrotic foci corresponding to macroscopic areas. No internal calcification, or invasions of adjacent tissue were found. The thickening of adjacent iliotibial band could be an edematous change. The anatomic location was the same as previous articles, but a larger size and solidity were observed. No contrast CT was performed due to a clinical suspicion of superficial lipoma. We presumed apparent enhancement of the mass would be seen in post contrast CT images as compared with MRI findings in previous articles. We could differentiate the mass from a hematoma or a bursitis more easily after contrast administration. The CT features were nonspecific, but the specific anatomic location of the lesion could be an important clue to help make a correct diagnosis. To the best of our knowledge, the mass effect has not been described previously. MRI remains the examination of choice for soft-tissue masses. However, multi-detector CT can provide multi-direction reconstructions and can detect calcifications more easily.

The differential diagnosis includes Morel-Lavallee lesion, ischemic fasciitis, and myxofibrosarcoma. Morel-Lavallee lesions are the result of skin and subcutaneous fatty tissue abruptly separating from the underlying fascia, common in the trochanteric region and upper thigh. They are related ancient hematoma and chronic expanding hematoma. MRI images of Morel-Lavallee lesions show hematoma of various stages [7]. Nodular fasciitis is a benign soft tissue lesion most commonly found in the subcutaneous region or in the fascia. The lesions often occur in the first four decades of life. The lesions tend to be small (<4cm) and commonly located in the upper extremity [8]. Myxofibrosarcoma, also known as the myxoid variant of malignant fibrous histiocytoma, is one of the most common sarcomas in the extremities of elderly people and occurs frequently in dermal and subcutaneous tissues. The superficial (dermal/subcutaneous) tumors are characterized by lesions composed of multiple gelatinous or firmer nodules that often spread extensively in a longitudinal manner. The tumors often arise in the lower extremities. However, no tumor was mentioned in the location of a pressure point (the greater trochanter) in a previous article [9].

The histologic hallmark of decubital ischemic fasciitis is a zonal architecture with central fibrinoid degeneration/necrosis surrounded by a granulation tissue-like vascular component mixed with reactive fibroblasts and myofibroblasts with proliferative fasciitis-like features[1, 2]. It has been hypothesized that ischemia, due to constant pressure or trauma of a predisposed region (mainly areas in close vicinity to bony protuberances), could contribute to the pathogenesis of these lesions [1, 2].

In summary, we report the clinical presentation, CT findings, and histopathologic diagnosis of an uncommon case of decubital ischemic fasciitis around the hip. When a tumor involves subcutaneous tissue and iliotibial band, abutting but not invading the greater trochanter, decubital ischemic fasciitis should be considered in the differential diagnosis. Ischemic fasciitis is not consistently associated with old age or debilitation. It is important to recognize this entity to prevent unnecessary interventions or overtreatment.
REFERENCES