

Case 10501
Kaposi Sarcoma presenting as a limb mass

Pedro João, Pedro Cabral, Diana Penha, Elsa Rosado, Dulce Nogueira

Section: Musculoskeletal System

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Patient: 22 year(s), male

Authors' Institution

Serviço de Imagiologia - Hospital Professor Doutor Fernando Fonseca, E.P.E Amadora, Portugal
Email:pedrofjoao@gmail.com

Clinical History

A 22-year-old HIV-positive male was admitted in the context of a pneumonia with unspecific findings on chest CT. At physical examination a lobulated mass at the posteromedial aspect of the right upper leg was seen. The patient mentioned progressive growth for months.

Imaging Findings

Plain radiography showed a nonspecific soft tissue mass at the posteromedial aspect of the right upper leg

Ultrasound with Color Doppler detected superficial soft tissue lesions, with well-defined borders. The lesions were hypochoic with posterior accoustic enhancement and a strong hypervascularity.

CT and MR were able to define the extension of the lesions. No significant changes were detected in the bones. On gadolinium-enhanced T1 sequences there was an intense signal increase of the superficial mass of the posteromedial aspect of the leg and foci of hyperintensity were identified in the adjacent muscular planes.

Cutaneous biopsy was performed and the histopathological analysis showed Kaposi Sarcoma.

Discussion

Background - Kaposi Sarcoma (KS), the most common tumour in patients with Acquired Immune Deficiency Syndrome (AIDS)[1], was first described in 1872 by Moritz Kaposi[2]. It is a low-grade malignancy associated with human herpesvirus type 8 (HHV-8), that can also be responsible for non-Hodgkin's lymphoma and Castleman's disease. KS is generally multifocal and most commonly involves the skin and mucous membranes, although it can affect virtually every organ system. There is reactive polyclonal angioproliferative response in the connective tissue with malignant transformation, neoangiogenesis, inflammation and oedema.

Clinical Perspective - Four forms of this disease have been described [3, 4]: classic (rare, mostly found in the Mediterranean area) endemic (also known as African KS), epidemic (associated with Human Immunodeficiency Virus infection, with decreasing incidence since the widespread use of highly active antiretroviral therapy) and transplant-associated. Presenting symptoms and signs of KS are related to duration of the disease and the most affected organs [4].

Imaging Perspective: When cutaneous KS is suspected, imaging should be performed to characterize the lesions detected at physical examination. Primary musculoskeletal involvement is exceedingly rare. Usually skin lesions will extend to the deeper anatomical planes [2]. Plain radiography is often the first exam performed, depicting a non-specific superficial mass. At Doppler ultrasound cutaneous lesions are usually hypoechoic with posterior acoustic enhancement, have well-defined multilobulated borders and show hypervascularity, particularly in the AIDS-associated form [6]. Contrast-enhanced sectional imaging (Computed Tomography and Magnetic Resonance) allows a more accurate delineation of extent of the lesion and a better evaluation of bone and muscle involvement. CT can better demonstrate osseous lytic lesions with cortical destruction and periosteal reaction. MR is better at depicting bone marrow changes and soft tissue masses. On fluid sensitive sequences (FS T2-WI, STIR) there is increased signal in the superficial tissues in relation to edema. The affected tissues (which in our case included muscles) show intense enhancement after intravenous administration of gadolinium contrast in concordance with the vascular nature of the lesions. The main differential diagnosis, bacillary angiomatosis, may present with similar clinical and imaging findings, although history of exposure to cats, positive serological tests and presence of lymph nodes may sometimes be useful. Osseous lesions are also more common[5]. However, biopsy is often required for definitive diagnosis [7].

Take Home Message: KS should be considered as a differential diagnosis when evaluating an HIV-patient with a soft tissue mass. Knowledge of the patient's immunologic status is essential.

Final Diagnosis

Kaposi Sarcoma with cutaneous and muscular involvement.

Differential Diagnosis List

Figures

Figure 1 radiography 1



AP radiography showing a lobulated soft-tissue mass in the medial aspect of the right thigh (arrow).

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Area of Interest: Musculoskeletal system; Oncology; Soft tissues / Skin;

Imaging Technique: Plain radiographic studies;

Procedure: Education;

Special Focus: AIDS; Neoplasia;

Figure 2 radiography 2



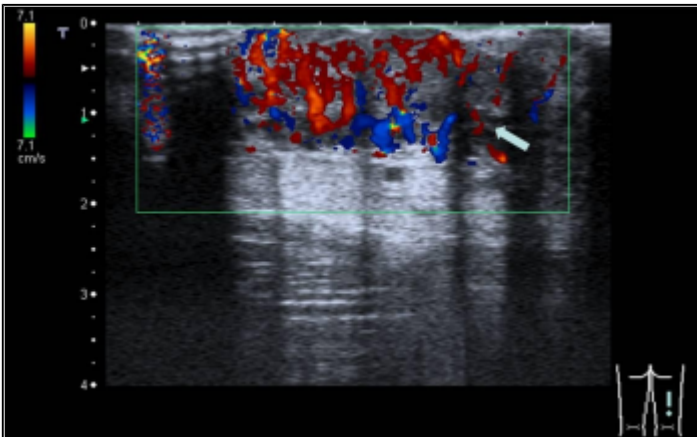


Lateral radiography showing posterior location of the mass (arrow).

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Area of Interest: Musculoskeletal system; Oncology; Soft tissues / Skin;
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Figure 3 Doppler ultrasound

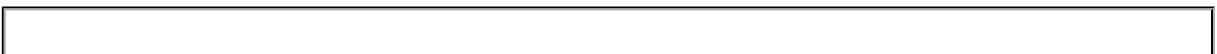


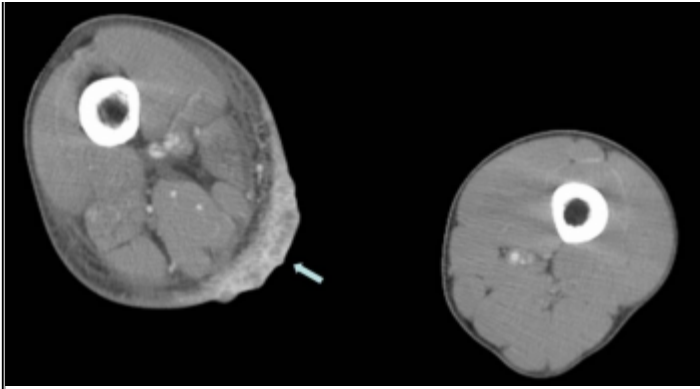
Well-delimited superficial soft tissue lesion (arrow), hypoechoogenic with posterior acoustic enhancement and increased vascularity detected by Color Doppler.

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Area of Interest: Musculoskeletal soft tissue; Oncology; Soft tissues / Skin;
 Imaging Technique: Ultrasound-Colour Doppler;
 Procedure: Education;
 Special Focus: AIDS; Neoplasia;

Figure 4 CT





CT-enhanced study showing the presence of a superficial hypervascular mass in the posteromedial aspect of the right thigh, with diffuse edema. The contralateral side is shown to better illustrate these changes.

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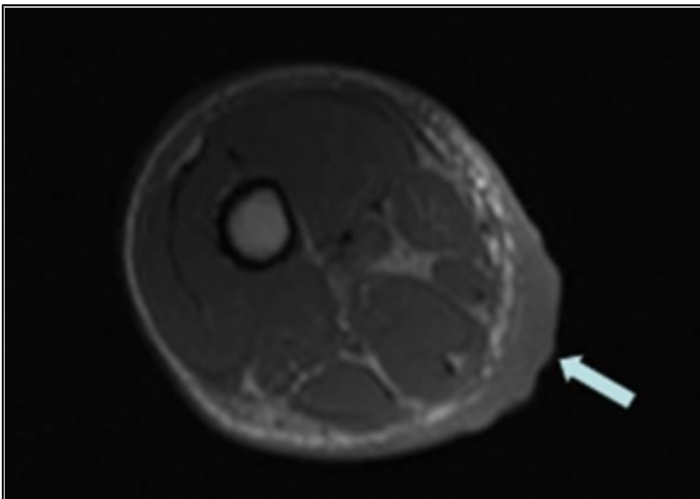
Area of Interest: Musculoskeletal soft tissue; Oncology; Soft tissues / Skin;

Imaging Technique: CT;

Procedure: Education;

Special Focus: AIDS; Neoplasia;

Figure 5 T1 ax



T1-weighted axial image showing mild hyperintensity of the superficial lesion (arrow), which does not extend beyond the aponeurotic fascia.

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Area of Interest: Musculoskeletal soft tissue; Oncology; Soft tissues / Skin;

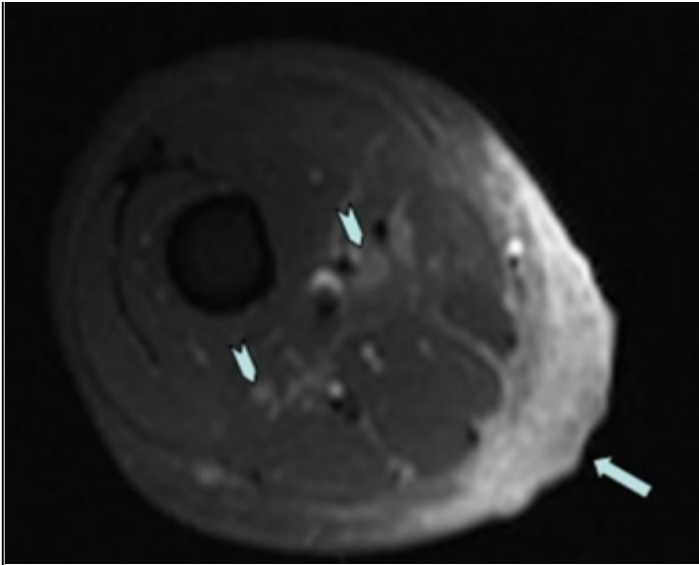
Imaging Technique: MR;

Procedure: Education;

Special Focus: AIDS; Neoplasia;

Figure 6 T1 ax Gd





After intravenous administration of gadolinium contrast, there is marked diffuse enhancement of the lesion (long arrow). Note also enhancement within the adjacent muscular fasciae, indicating their involvement (short arrows).

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Area of Interest: Musculoskeletal soft tissue; Oncology; Soft tissues / Skin;
Imaging Technique: MR;
Procedure: Education;
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MeSH

Musculoskeletal System [A02]

The MUSCLES, bones (BONE AND BONES), and CARTILAGE of the body.

Neoplasms [C04]

New abnormal growth of tissue. Malignant neoplasms show a greater degree of anaplasia and have the properties of invasion and metastasis, compared to benign neoplasms.

References

- [1] C. S. Restrepo, D. Ocazonez (2011) Kaposi's Sarcoma: Imaging Overview Semin Ultrasound CT MRI Elsevier Inc 32:456-469
- [2] L. Thanos, S. Mylona, V. Kalioras, M. Pomoni, N. Batakis (2004) Osseous Kaposi sarcoma in an HIV-positive patient Skeletal Radiology 33:241-243
- [3] I. Fernández Péreza, L. Vázquez Tuñasa, M. Lázaro Quintelaa, P. Lamas Domínguezb, M. Gentil Gonzáleza, J. Carrasco Álvarez, C. López Jatoa and J. Castellanos Díeza (2007) Disseminated classic Kaposi's sarcoma Clinical and Translational Oncology 9:255-257
- [4] C. S. Restrepo, S. Martnez, J. A. Lemos, J. A. Carrillo, D. F. Lemos, P. Ojeda, P. Koshy (2006) Imaging Manifestations of Kaposi Sarcoma Radiographics 26:1169 -1185

[5] J. Tehranzadeh (2009) Musculoskeletal Imaging - cases McGraw-Hill Radiology books 718-719

[6] F. M. Solivetti, F. Elia, A. Latini, C. Cota, P. Cordiali-Fei, A. Di Carlo (2011) AIDS-Kaposi Sarcoma and Classic Kaposi Sarcoma: are different ultrasound patterns related to different variants? Journal of Experimental & Clinical Cancer Research 30:40

[7] B.D. Caldwell, D. Kushner, B. Young (1996) Kaposi's sarcoma versus bacillary angiomatosis Journal of the American Podiatric Medical Association Jun;86(6):260-2

Citation

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