Case Report
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Multinucleate cell angiohistiocytoma: A report of six cases

Multinükleer hücreli anjiyohistiyositom: Altı olgu sunumu

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Abstract

Multinucleate cell angiohistiocytoma (MCAH) is a benign fibrohistiocytic and vascular proliferation that it is seen on the dorsae of the hands or lower extremities in elderly women. Six cases, three males and three females, who had multiple or solitary asymptomatic skin lesions were admitted to our clinic. Histopathological examinations revealed vascular proliferation, perivascular lymphoplasmacytic, fibrohistiocytic infiltration and multinucleated stromal cells in the dermis. Based on the clinical and pathological findings, the diagnosis was MCAH. MCAH shows a slow but progressive course. MCAH is an entity that is not requiring any treatment. However, it is not well known by clinicians or pathologists and misdiagnosis may lead to unnecessary investigations and therapy. It should certainly be taken into consideration during differential diagnosis of cutaneous vascular proliferations.
Keywords: Multinucleate cell, multiple, vascular

Öz

Multinükleer hücreli anjiyohistiyositom (MNAH) genellikle yaşlı kadınların alt ekstremite ve el dorsumlarında görülen benign fibrohistiyositik ve vasküler bir proliferasyondur. Üçü erkek üçü kadın altı hasta asemptomatik multipl ve soliter papüller nedeniyle polikliniğimize başvurdu. Histopatolojik incelemelerinde dermisde vasküler proliferasyon, perivasküler lenfoplazmositik ve fibrohistiyositik hücre infiltrasyonu ve multinükleer stromal hücreler gözlendi. Klinik ve patolojik bulgularla MNAH tanısı konuldu. MNAH yavaş ancak progresif gidişli, tedavi gerektirmeyen bir antitedir. Ancak klinisyen ve patologlar tarafından bilinmediği için tanısı gecikmekte, yanlış tanılar nedeniyle gereksiz girişim ve tedavilere neden olabilmektedir. Kutanöz vasküler proliferasyonların ayırıcı tanısında mutlaka akla gelmelidir.
Anahtar Kelimeler: Multinükleer hücre, multipl, vasküler

Introduction

Multinucleate cell angiohistiocytoma (MCAH) is a benign soft tissue tumour which was firstly identified by Smith and Wilson-Jones[1] in 1985. Clinically it is usually characterised by erythematous or violaceous flat-topped, single or multiple papules and plaques on the dorsae of hands or lower extremities of middle-aged and older women[2]. Histopathologically, there is vascular and fibrohistiocytic proliferation in dermis accompanied with multinucleated cells[3]. Both clinically and histopathologically, it is confused with medical conditions as Kaposi's sarcoma, lichen planus, sarcoidosis, and granuloma annulare[2,3]. Six MCAH cases, delayed diagnosis and caused to redundant surgical intervention are reported, because of this entity could not remind in the first initiative.

Case Report

Six patients within three males and three females, who had multiple or solitary asymptomatic skin lesions were admitted to our clinic between May 2012 and November

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2014. The dermatological examinations were revealed multiple except one of them, the smallest was 3 mm, the largest was 15 mm in size, reddish-brown to violaceous flat-topped papules on the right elbow in one case and left cruris in one case and dorsum of the right hand in two cases, and left thigh in one case and both arms in one case (Figure 1). Preliminary diagnoses such as Kaposi's sarcoma, lichen planus, granuloma annulare, sarcoidosis, pseudolymphoma and dermatofibrom were considered. The punch biopsies were taken and stained with haematoxylin and eosin. The results were showed vascular proliferation, perivascular lymphohistiocytic or lymphoplasmocytic infiltrate and fibroblast proliferation in dermis (Figure 2). The increase of vascular structures was proven with CD31 staining but human herpes virus-8 (HHV-8) staining was negative which performed due to the suspicion of Kaposi's sarcoma. A second biopsy was performed due to persistence of lesions and the growth of old lesions from three of the patients. However, histopathological examinations of recurrent biopsies showed the same characteristics and were not supported to the preliminary diagnoses. When the histopathological preparations from the patient were re-examined in serial cross-sections, dermal multinucleated stromal cells were observed (Figure 2) and the patients were diagnosed with MCAH. The detailed clinical and histopathological features of the six cases are shown on Table 1.

Discussion

Although MCAH is recognized to be a rare condition, it may actually have been underreported due to the clinicians' and pathologists' lack of information about this entity[2,3]. Although lesions were usually seen as unilateral and localized, bilateral and generalized cases have also been reported[2,4]. A recent dermatopathologic review analysed retrospectively 142 MCHA patients from the literatur. The authors found the avarage age of individuals was as 50.1 years and female predominance (79%)[5]. In our case serie the avarege age of the patients were 56.8 and we found no predominance of sex. Also it had mentioned that the most affected part of the body was hand (30%)[5]. In our case serie the hand placement was observed in two patients. All patient had multiple lesions, except one of them (Table 1).

Histopathological examination for MCAH reveals vascular proliferation of blood vessels resembling small capillaries or venules in upper-middle dermis. In recent review the prominent finding was vascular proliferation (43.7%) and was accepted as the most frequent pathologic finding of MCAH[5]. In our patients vascular proliferation was observed in the histopathology of all six patients mentioned. Endothelial cells are swollen and protrude into the vascular lumen[2]. The typical multinucleated cells exhibit scalloped or angulated basophilic cytoplasm due to nuclear protrusion of 3 to 10 hyperchromatic nuclei arranged around the periphery of the cells[2,3]. Randomly distributed collagen bundles and fibrohistiocytic mononucleated spindle cell proliferation, moreover scattered perivascular lymphocytes and plasma cells and neutrophiles and mast cell infiltration are observed in dermis[2,6]. It is postulated that mast cells play a role in multinucleated cell formation by nteracting with fibroblasts[7].

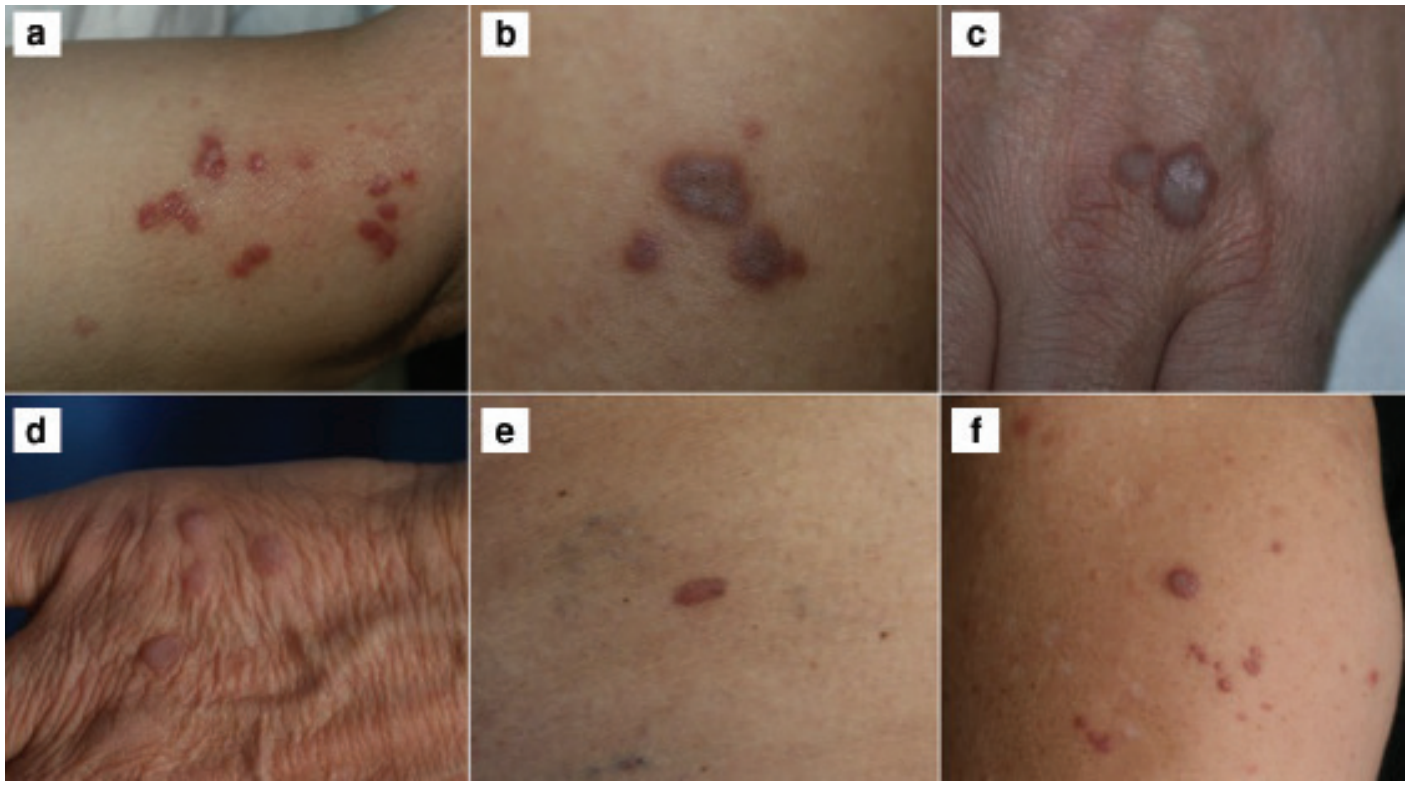

Figure 1. a) Multipl dark red, coalescing papules on the lateral side of the right elbow (case 1), b) Multiple purplish red, five pieces planar papules which two of them are integratives behind the left crusis (case 2), c) Two pieces adjacent flat-topped purple papules on the dorsum of the right hand (case 3), d) The livid color, discrete planar papules on the dorsum of the right hand (case 4), e) A solitary oval-shaped reddish-brown papule on the left femoral (case 5), f) Multipl flat-topped purplish red papular lesions on the left arm of patient who has lesions on bilateral arms (case 6)

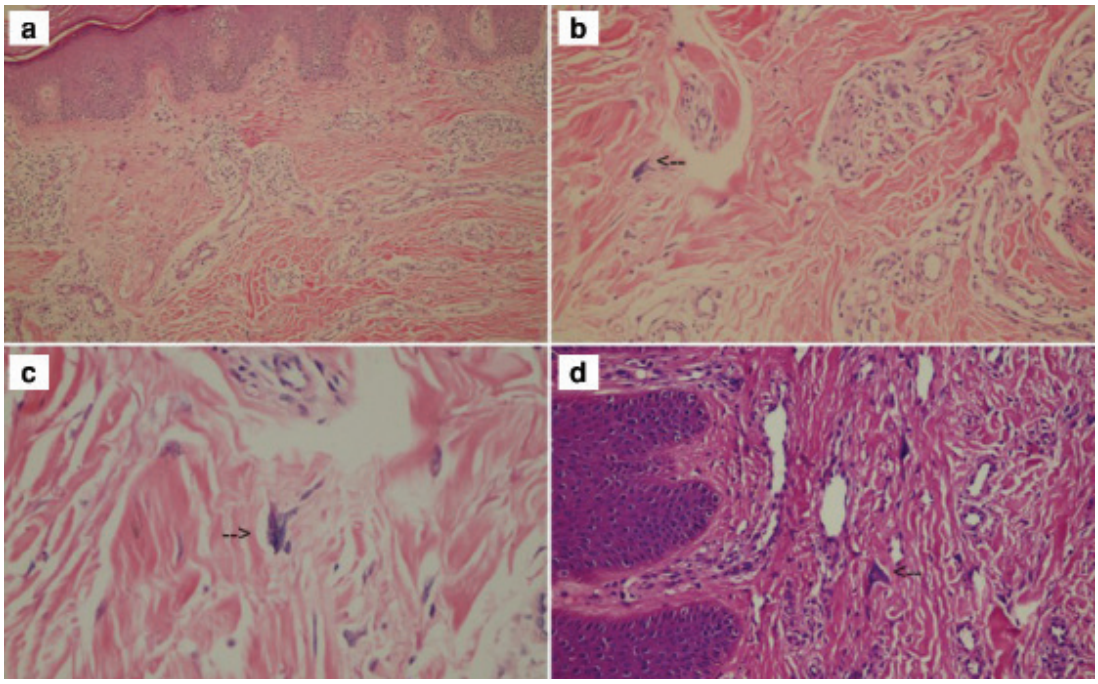

Figure 2. a) Mild acanthosis in epidermis and vascular proliferation in dermis (H&E x10) (case 4), b) Fibrohistiocytic mononucleated spindle cell proliferation around increasing vessels; eosinophilic and coarse appearance of collagen bundles in dermis and a multinucleated stromal cell (arrow) (H&E x20) (case 4), c) The close appearance of multinucleated stromal cell formed by the incorporation of 4-5 cell nuclei with angulated basophilic cytoplasm in the centre (arrow) (H&E x200) (case 4), d) Vascular proliferation, perivascular lymphocytic infiltration and multinucleated stromal cells in dermis (arrow) (H&E x40) (case 6)

Table 1. Clinical and histopathological features of the six cases

Cases	Age	Sex	Location	Duration	Accompanying disease	Number of lesions	Pre-diognoses	Histopathology
1	71	F	Right arm	1 year	DM	Multiple	Granuloma annulare, sarcoidosispseu dolymphoma	Vascular proliferation, perivascular lymphoplasmocytic infiltrate, increase in the number of mast cells, and multinucleated stromal cells in dermis
2	59	F	Left leg	7 months	None	Multiple	Kaposi's sarcoma, lichen planus, granuloma annulare	Acanthosis in epidermis and vascular proliferation, perivascular lymphocytes, histiocyte and plasma cell infiltrate and multinucleated stromal cells in dermis
3	50	M	Dorsum of the right hand	2 years	None	Multiple	Kaposi's sarcoma, lichen planus, granuloma annulare	Vascular proliferation, perivascular lymphoplasmocytic infiltration and multinucleated stromal cells in dermis
4	62	M	Dorsum of the right hand	2 years	Hypercholeste rolemia, hypertension	Multiple	Lichen planus, Kaposi's sarcoma	Acanthosis in epidermis; vascular proliferation, fibrohistiocytic infiltration and multinucleated stromal cells in dermis
5	56	M	Left thing	5 years	Hypertension, psoriasis	Solitary	Dermatofibroma	Vascular proliferation, fibroblast proliferation and multinucleated stromal cells in dermis
6	43	F	Right and left arms	1 year	None	Multiple	Lichen planus, sarcoidosis	Vascular proliferation, perivascular lymphocytic infiltration and multinucleated stromal cells in dermis

M: Male, F: Female, DM: Diabetes mellitus

Immunohistochemically the vascular endothelial cells are stained positively for factor 8 and vimentin and CD31 and CD34 antigens while they are stained negatively for HHV-8 antigen. Mononucleated cells express vimentin, factor XIIIa, CD68, alpha-1 antitrypsin and lysozyme. Multinucleated cells are strongly positive for vimentin while they are stained negatively for other monocyte/macrophage markers. Immunohistochemically, the lack of monocyte/macrophage markers and electron microscopic findings for multinucleated cells suggested that these cells were of fibrohistiocytic origin[3,6].

MCAH clinically resembles lichen planus, Kaposi's sarcoma, granuloma annulare, insect bite, pseudolymphoma and sarcoidosis as in our series. Histopathological examination is required for the diagnosis. However, histopathological findings may be confused with dermatofibroma (atrophic vascular variant), angiofibroma, early Kaposi's sarcoma, and pseudo-Kaposi sarcoma. Atrophic vascular variant of dermatofibroma involves a more intensive cell proliferation and shows a storiform pattern. In angiofibroma, collagens show perifollicular and vertical distribution patterns. Multinucleated giant cells are not seen in Kaposi's sarcoma which is HHV-8-positive. Pseudo-Kaposi's sarcoma is characterised by tortuous and thick-walled capillaries and abundant hemosiderin deposit[6,8].

Pathogenesis of MCAH has not been fully understood yet. Its prevalence among women suggests the effects of the hormones[2]. Hand and extremity localisation of the lesions suggests association with trauma[8]. Spontaneous resolution has been reported that indicates an inflammatory condition rather than a neoplastic process[9]. MCAH-like lesions has also been noted to occur periphery of nonmelanoma skin cancers and within chronic inflammatory lesions that supports this condition[10].

This benign profile shows a slow but progressive course. It does not require treatment, but on the other hand surgical excision, cryotherapy, and CO_2 or argon laser treatment may be applied for cosmetic purposes, if needed[3].

MCAH should certainly be taken into consideration during differential diagnoses of cutaneous vascular proliferations. Both our patients and the cases reported in the literature have clinically and histopathologically similar findings. These cases are firstly reported in our country as far as known. We think that this status is due to the entity is not known rather than the illness is rarely seen. Therefore MNAH is minded to make diagnosis correctly and to prevent the redundant intervention and treatment for patients who have not initiatory signs excluding the vascular proliferation and lymphohistiocytic infiltration on histopathology and who applies with multiple grouped flat-topped papules.

Ethics

Informed Consent: Consent form was filled out by all participants.
Peer-review: Externally and internally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: Tuğba Falay, Mehmet Salih Gürel, Concept: Tuğba Falay, Vefa Aslı Erdemir, Design: Tuğba Falay, Vefa Aslı Erdemir, Data Collection or Processing: Tuğba Falay, Duygu Erdil, Analysis or Interpretation: Cem Leblebici, Mehmet Salih Gürel, Literature Search: Tuğba Falay, Ezgi Özkur, Writing: Tuğba Falay.
Conflict of Interest: No conflict of interest was declared by the authors.
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