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ACROANGIODERMATITIS (PSEUDO-KAPOSI SARCOMA) AS PART OF CHRONIC VENOUS INSUFFICIENCY

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SUMMARY – Acroangiodermatitis (synonym, pseudo-Kaposi sarcoma) is a benign, uncommon, acquired disease of blood vessels that commonly affects elderly male patients, and manifests as purple-colored patches, plaques or nodules, mostly localized on lower extremities. Pseudo-Kaposi sarcoma is usually associated with chronic venous insufficiency, but it is also found in patients with arteriovenous malformations, hemodialysis patients with iatrogenic arteriovenous shunts, paralyzed limbs and amputation stumps. Generally, acroangiodermatitis in patients with chronic venous insufficiency produces skin lesions located on the dorsa of the feet, hallux and second toe, or on the medial aspect of lower extremities. Acroangiodermatitis may resemble Kaposi sarcoma, however, in comparison with Kaposi sarcoma, acroangiodermatitis is characterized by benign, marked proliferation of blood vessels, slow-progressive course, and absence of neoplastic spindle-shaped cells forming clefts and vascular channels on histopathologic analysis. Since skin lesions are remarkably similar to Kaposi sarcoma in their clinical appearance, it is important to perform skin biopsy and immunohistochemistry to rule out Kaposi sarcoma. Topical corticosteroids may sometimes prove useful in early macular lesions, but the use of compressive bandages and dermatologic follow up are recommended.

Key words: *Acrodermatitis – diagnosis; Skin diseases – vascular – diagnosis; Foot diseases – diagnosis; Foot diseases – pathology; Venous insufficiency – complications*

Introduction

Acroangiodermatitis (synonym, pseudo-Kaposi sarcoma) is an uncommon disease of blood vessels caused by benign, marked vessel proliferation in the papillary and reticular dermis. It begins as violaceous macules and papules, and slowly progresses to plaques that involve the extensor surfaces of lower extremities (Fig. 1). The disease is more common in 50- to 70-year-old male patients with chronic venous insufficiency and congenital vascular malformations, e.g., Klippel-Trénaunay syndrome, Stewart-Bluefarb syndrome and Labhart-Willi syndrome[1-4]. The term acroangiodermatitis was first mentioned in 1965 by Mali *et al*., who described peculiar mauve-colored macules and plaques on the extensor surface of the feet in 18 patients with chronic venous insufficiency[5].

Acroangiodermatitis is classified into the group of benign diseases of blood vessels, considered as a prominent reactive change with vessel proliferation and fi-

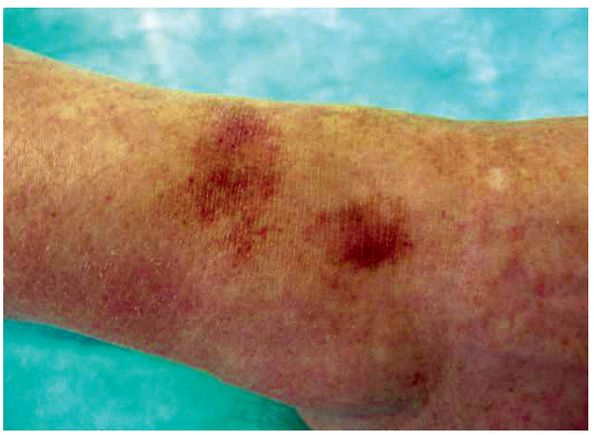

Fig. 1.

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Table 1. Comparison of pseudo-Kaposi sarcoma and AIDS-associated Kaposi sarcoma

	Pseudo-Kaposi sarcoma (acroangiodermatitis)	AIDS-associated Kaposi sarcoma
Etiology	Chronic venous insufficiency	Human herpesvirus type 8
Cutaneous manifestations	Violaceous macules, papules and plaques on lower extremities	Violaceous macules, papules and plaques on lower extremities
Extracutaneous manifestations	None	Regional lymph nodes, oral cavity, almost any organ
Histopathologic and immunohistochemical findings	Proliferation of pre-existing vessels in the dermis (vessels are round and regular) CD 34–	Neoplastic spindle-shaped cells forming clefts and vascular channels CD 34+
Therapy	Early macular lesions – topical corticosteroids Compression stockings, body weight reduction, leg elevation	Single lesion – surgical excision Multiple lesions – antiretroviral therapy, radiotherapy and chemotherapy
Prognosis	Good/excellent	Poor

brosis[3]. The clinical and histopathologic features of pseudo-Kaposi sarcoma are similar in appearance to Kaposi sarcoma (Table 1). Epidemic-associated Kaposi sarcoma is the most common cancer associated with acquired immunodeficiency syndrome (AIDS). During the past decade, due to the increasing incidence of AIDS, it has become important to diagnose acroangiodermatitis as a separate entity distinguished from Kaposi sarcoma, which may be part of the clinical picture of AIDS[6]. The majority of patients with Kaposi sarcoma have acquired human immunodeficiency virus (HIV) infection from homosexual sources, while those infected with HIV as the result of intravenous drug abuse seldom develop this tumor.

Etiology and Pathogenesis

Acroangiodermatitis is a disease which occurs in several different clinical conditions (Table 2). Eruption of purple colored macules, papules and plaques is usually

Table 2. Conditions associated with pseudo-Kaposi sarcoma (acroangiodermatitis)

Conditions associated with pseudo-Kaposi sarcoma (acroangiodermatitis)	Common sites	Therapy
Chronic venous insufficiency	Lower extremities	Early macular lesions – topical corticosteroids Compression stockings, body weight reduction, leg elevation
Arteriovenous malformations	Lower extremities	Compression stockings, body weight reduction, leg elevation
Iatrogenic arteriovenous shunt	Upper extremities	Surgical elimination of iatrogenic arteriovenous shunt
Paralyzed legs	Lower extremities	Physiotherapy, compression stockings, body weight reduction, leg elevation
Amputation stumps	Lower extremities	Compression bandaging, shrinker socks, partial end-bearing, diuretics

associated with chronic venous insufficiency, but similar skin lesions can also be found overlying arteriovenous malformations of lower extremities, e.g. Klippel-Trénaunay syndrome, Stewart-Bluefarb syndrome and Labhart-Willi syndrome[1]. Pseudo-Kaposi sarcoma is also found in patients with iatrogenic arteriovenous shunt, paralyzed legs and amputation stumps, or it may occur in above-knee amputees who use suction socket prosthesis that exerts negative pressure[4,7].

In patients with chronic venous insufficiency, skin lesions of acroangiodermatitis are the result of the increased venous pressure, which leads to marked proliferation and dilation of veins and superficial plexus[3]. Chronic pressure leads to benign vessel proliferation in the papillary and reticular dermis, and red blood cell extravasation stains the macules, papules and plaques on the edematous skin purple[4].

Clinical Picture

Clinical presentation of patients with chronic venous insufficiency usually points to the diagnosis of pseudo-Kaposi sarcoma. Statistical studies have shown that approximately 20% of the population have varicosities of the saphenous system, which are one of the most important causes of chronic venous insufficiency[8]. Although chronic venous insufficiency is a very common condition, pseudo-Kaposi sarcoma is an uncommon dermatological disease, which predominantly affects 50- to 70-year-old male patients[9].

Skin lesions of pseudo-Kaposi sarcoma have a predilection for lower extremities and start as well-demarcated, violaceous or brown macules and papules. Individual lesions progress slowly to band-like or bizarre configuration plaques that generally start bilaterally on distal lower extremities. Skin lesions may sometimes be exulcerated.

Dilated and tortuous veins, as the cause of chronic venous insufficiency, are usually present on the affected lower extremities. In later stages, edema of lower extremities, brown discoloration (hemosiderosis) and pruritus are common findings. Mucous membranes are never involved in pseudo-Kaposi sarcoma. According to systemic findings, patients with acroangiodermatitis are generally well.

A similar clinical picture can be found overlying arteriovenous malformations or in patients with iatrogenic arteriovenous shunt, paralyzed legs and amputation stumps[1,7]. In comparison to chronic venous insufficiency, where lesions are often bilateral, in other disorders there are underlying clinical symptoms (signs of vascular or neurologic insufficiency) and the lesions tend to be unilateral[4].

Differential Diagnosis

The clinical differential diagnosis of the disease in very early stages includes, first of all, AIDS-associated Kaposi sarcoma. The skin lesions in pseudo-Kaposi sarcoma and Kaposi sarcoma are violaceous macules and papules that slowly progress to plaques, bilaterally involving the extensor surfaces of lower extremities. There are no specific laboratory findings that suggest pseudo-Kaposi sarcoma, while in AIDS-related Kaposi sarcoma CD4 count is often less than 200 cells/mL[9]. Although clinical findings in these conditions are similar, there are differences in histologic and immunohistochemical features[3].

Histologic findings in pseudo-Kaposi sarcoma are marked, benign proliferation of pre-existing vessels in the papillary and reticular dermis, with red blood cell extravasation and abundant hemosiderin deposition and fibrosis, while the vessels are round and regular. In comparison to pseudo-Kaposi sarcoma, Kaposi sarcoma is a malignant tumor derived from lymphatic endothelium. Histologically, the lesions of Kaposi sarcoma consist of lobulated masses of neoplastic spindle-shaped cells forming irregular clefts and vascular channels, independent of the pre-existing vessels, lying deep within the dermis and separated by fibrous trabecula[6,10].

In order to differentiate these two diseases, immnunolabeling with the CD34 antigen is sometimes required[11]. CD34 is expressed on endothelial cells in high endothelial venules. The well-known function of this CD molecule is cell-cell adhesion, it binds CD62L (L-selectin) which is expressed on B and T cells, monocytes, granulocytes and some NK cells[12]. Immunohistopathologic analysis of skin lesion biopsies obtained from patients with Kaposi sarcoma showed CD34 positive findings on both endothelial and perivascular cells, whereas in patients with pseudo-Kaposi sarcoma endothelial cells of hyperplastic vessels were CD34 positive but without perivascular CD34 expression[11]. In some cases, precise diagnosis can only be made by electron microscopy of skin biopsy specimens[13].

The pathological differential diagnosis of pseudo-Kaposi sarcoma in early stages also includes simple angiomatous malformation, stasis dermatitis, and progressive pigmented purpura on lower extremities[7,14-16].

If clinical history of previous injury of the lower extremities is positive, the diagnosis of acroangiodermatitis should not be made easily.

Therapy

During long-term therapy, it is important to treat the underlying disease; for example, if the acroangiodermatitis is associated with chronic venous insufficiency, of primary importance is correction of the impaired venous blood flow. Proper leg compression, such as daily use of compression stockings in compression categories II and III (30-40 mm Hg at the ankle), combined with leg elevation above the heart level for 30 minutes three to four times daily and during night are important measures that can promote nearly complete regression of the skin lesions in five months[1,8,9]. Compression stockings in compression categories II and III are not easily applied by elderly patients, so it is recommended to prescribe a pair of stockings with lower compression rather than no compression at all. Compression stockings must be prescribed every six months when they are worn daily. The contraindication for compression stockings is concomitant arterial occlusive disease[8]. Besides compression therapy, in the early macular stage, the skin lesions can be satisfactorily treated by topical corticosteroids.

There are several supportive measures, such as vein stripping and sclerotherapy in order to treat superficial venous incompetence. Since contact allergies to topical medications may develop, the routine use of lotions and ointments should be avoided. Time off work may be required for healing. The edema of the stump may be reduced with short courses of oral diuretics, where the medication can be gradually decreased[3,4]. If the patient is obese, body weight reduction may help decrease the elevated venous pressure.

There is one case report of regression of skin lesions with a 3-month course of dapsone 50 mg twice daily in combination with leg elevation and compression[17]. There also are two case reports in which oral erythromycin treatment led to nearly complete resolution in patients with iatrogenic arteriovenous shunts[17].

It is also important to use compression bandaging, shrinker socks, other pads and partial end-bearing as therapeutic measures[18]. Surgical elimination of iatrogenic arteriovenous shunts in patients with chronic renal failure treated with dialysis is curative.

Conclusion

Chronic venous insufficiency has a major impact on work productivity and quality of life, so it is important to diagnose and treat the condition appropriately. In clinical practice, it is of utmost importance to recognize pseudo-Kaposi sarcoma, especially because of its clinical picture similarity to Kaposi sarcoma, the prognosis of which is often serious and treatment is necessary and aggressive.

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Sažetak

AKROANGIODERMATITIS (PSEUDO KAPOSIJEV SARKOM) KAO SASTAVNI DIO KRONIČNE VENSKE INSUFICIJENCIJE

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Akroangiodermatitis (istoznačnica pseudo Kaposijev sarkom) je dobroćudna, rijetka, stečena bolest krvnih žila koja obično zahvaća muškarce starije životne dobi, a javlja se u vidu purpuričnih makula, plakova ili nodusa, najčešće na koži donjih ekstremiteta. Pseudo Kaposijev sarkom je obično udružen s kroničnom venskom insuficijencijom, ali se također javlja u bolesnika s arteriovenskim malformacijama, na hemodijalizi s lječidbenim arteriovenskim skretanjem, paraliziranim donjim ekstremitetima, te kod amputiranih bataljaka. Općenito, akroangiodermatitis u bolesnika s kroničnom venskom insuficijencijom uzrokuje pojavu promjena kože na dorzumima stopala, palcu i drugom prstu stopala ili medijalnoj strani donjih ekstremiteta. Akroangiodermatitis može nalikovati Kaposijevu sarkomu, ali u usporedbi s Kaposijevim sarkomom akroangiodermatitis je obilježen dobroćudnom, naglašenom proliferacijom krvnih žila, te sporo razvijajućim tijekom, a u patohistološkom nalazu nedostaju gnijezda tumorskih vretenastih stanica koja tvore novonastale vaskularne prostore. Budući da su klinički promjene kože kod Kaposijeva sarkoma i pseudo Kaposijeva sarkoma značajno slične, važno je učiniti biopsiju kožnih promjena i imunohistokemijsku analizu radi isključenja Kaposijeva sarkoma. Lokalni kortikosteroidni pripravci su ponekad korisni u početnoj, makularnoj fazi bolesti, te se preporučuje kompresivna terapija i redovito praćenje kod specijalista dermatologa.

Ključne riječi: *Akrodermatitis – dijagnoza; Bolesti kože – vaskularne bolesti – dijagnoza; Bolesti donjih ekstremiteta; Bolesti donjih ekstremiteta – patologija; Venska insuficijencija – komplikacije*