

## Human immunodeficiency virus-negative tonsil Kaposi's sarcoma and Hodgkin's disease: case report and review of the literature

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### Summary

*Kaposi's sarcoma (KS) is a multicentric malignant neoplastic vascular disorder characterized by multiple violet-colored nodules of the skin. The coexistence of KS with other primary malignancies, especially of the lymphoreticular system, has been frequently noted. However, the*

*association of Hodgkin's disease with KS is a rare occurrence. In this article we present the case of a 33-year-old man with human immunodeficiency virus (HIV)-negative KS of the tonsil, occurring in the radiotherapy field for Hodgkin's disease treated 20 years ago.*

**Key words:** Hodgkin's disease, Kaposi's sarcoma, radiotherapy, tonsil

### Introduction

KS is a multicentric malignant neoplastic vascular disorder, possibly of viral etiology, characterized by multiple violet-colored nodules of the skin. KS rarely presents initially on mucosal membranes or cutaneous sites in the head and neck region [1].

Different clinical and epidemiological forms of KS are recognized. An indolent form is found in elderly men of Mediterranean or Eastern European origin, usually arising at the lower extremities and rarely involving visceral organs (classic KS) [2]. A mild form of KS is also found in post-transplant pa-

tients treated with cyclosporin (PT-KS), particularly in patients from Italy and Saudi Arabia or in certain ethnic groups of Ashkenazi or Shephardnazi Jewish descendants [3,4]. An endemic and aggressive form of KS involving visceral and/or lymphatic organs occurs in young adults and children of sub-equatorial Africa (African KS, AKS) [5,6]. The most aggressive form of KS is found in HIV 1-infected individuals (acquired immunodeficiency syndrome-associated KS, AIDS-KS), where it is generalized and disseminated in the skin and visceral organs including the gastrointestinal tract and lungs [7,8]. Among HIV-infected subjects, AIDS-KS is particularly frequent in homo- or bisexual men, that are the groups at highest risk for KS regardless of their ethnic or geographical origin [7-10].

The coexistence of KS with other primary malignancies, especially of the lymphoreticular system, has been frequently noted, and this association appears to be more than coincidental [11]. There are several studies showing that some viral infections such as cytomegalovirus and herpesvirus type 8, are common etiological factors for KS and lymphomas [12-14].

In this article, we report on a HIV-negative 33-year-old man with KS of the tonsil occurring in the radiotherapy field for Hodgkin's disease treated 20 years ago.

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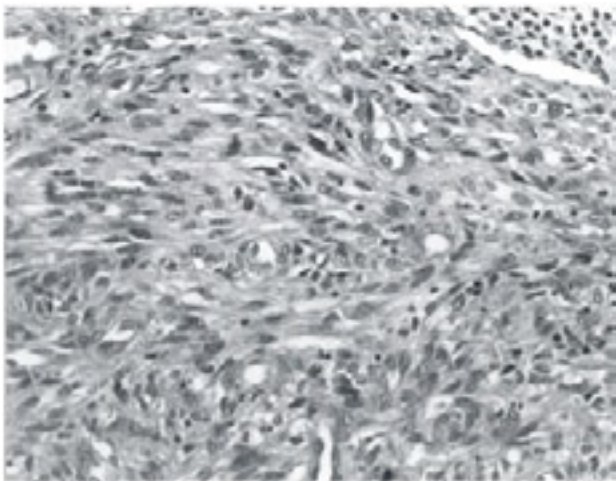
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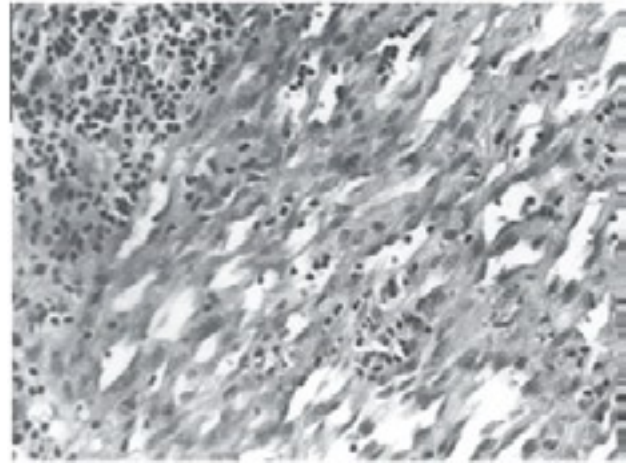
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## Case presentation

In 1976 a 8-year-old boy was admitted to the hospital because of bilateral cervical lymphadenopathy, weight loss, and night fever. After serum biochemistry, radiological examinations and cervical lymph node biopsy, a staging laparotomy was performed. He was diagnosed as having Hodgkin's disease of mixed cellularity, pathologically stage IIIB. He was then treated with 15 cycles of COPP (cyclophosphamide, vincristine, procarbazine and prednisone) chemotherapy. Restaging showed progressive disease in the right cervical lymph nodes. The case was characterized as chemotherapy-resistant and thus radiotherapy was given to the whole abdomen (2000 cGy), inverted-Y boost (1750 cGy), mantle field (3570 cGy), and right cervical region boost (900 cGy), which resulted in complete disease remission. In 1981, left cervical recurrence was diagnosed. The patient received 16 cycles of second-line chemotherapy (CHOP -cyclophosphamide, doxorubicin, vincristine and prednisone) along with left cervical radiotherapy (2600 cGy). Complete remission was achieved, the only problem being treatment-related aspermia for 20 years. In October 2002, routine physical examination revealed a nodular mass of the right tonsil. A right tonsillectomy was performed and the biopsy showed KS (Figure 1 and 2). After that result, a left tonsillectomy was carried out which was negative for malignancy. Blood tests were negative for HIV infection. Adjuvant treatment was not given to the patient. After 10 months of follow up the patient remains disease-free.



**Figure 1.** Spindle cell area of the tumor with scattered small vascular structure. Tumoral infiltration is apparent, consisting of vascular structures lined by prominent endothelial cells adjacent to lymphoid tissue of the tonsil (H&E  $\times 310$ ).



**Figure 2.** Immunohistochemically, endothelial cells and some of the spindle cells are positive for CD-31. Vimentin is diffusely positive (H&E  $\times 310$ ).

## Discussion

A higher incidence of coexisting lymphoproliferative diseases and KS has been reported [11,15], with a 20-fold increase in the incidence of lymphoid malignancies after diagnosis of KS [12]. However, the association of Hodgkin's disease and KS is a rare occurrence. In 1981, Ulbright and Santa Cruz in a review of the literature discovered 65 cases with KS and either leukemia, non-Hodgkin's lymphoma, multiple myeloma, mycosis fungoides, or thymoma. Including one case of their own, there were 5 cases of KS that occurred after the diagnosis of Hodgkin's disease [16].

In a large study from Memorial Sloan-Kettering Center, 37% of 92 patients with KS were shown to have other primary malignancies, 58% of which were lymphoid malignancies [12]. There was one case arising simultaneously with Hodgkin's disease, 2 cases before, and 3 cases after treatment of Hodgkin's disease.

Fossati et al. analyzed 250 HIV-negative KS patients with lymphoproliferative disorders and found only 2 patients with Hodgkin's disease. No significant association was found between HIV-negative KS and lymphoproliferative disorders in their patient population [15].

Recently, the incidence of KS has been increasing in patients with AIDS. KS is the most common HIV-associated malignancy. Simultaneous occurrence of KS and Hodgkin's disease in HIV-positive patients is described in 2 studies [17,18]. Ree et al. reported that among 24 HIV-positive patients with Hodgkin's disease, KS occurred in 4 during the course of the disease [19].

Although our patient was HIV-negative, KS occurred after Hodgkin's disease. In 2000, Jung et al. reported the case of a 70-year-old male patient with consecutive appearance of Hodgkin's disease and KS without evidence of HIV infection or other immunodeficiency disorder [20]. They reported that only 41 cases with KS and Hodgkin's disease were found after careful search of the relevant literature of the last 33 years.

One case was reported from the University of Pittsburg Medical Center with KS developing after treatment for Hodgkin's disease in a non-AIDS young adult patient [21].

In a recent review from USA, KS accounted for 1.2% of the oral cavity tumors, especially occurring in the palate, mostly in the hard palate [1]. In HIV-positive patients, KS involving the oral cavity is common and the oral cavity is the initial site of involvement in up to 45% of such patients.

Chetty et al. reported 2 cases of KS presenting as tonsillar masses in HIV-positive patients [22]. A review from the Armed Forces Institute of Pathology showed 11 cases of KS occurring in the head and neck region, with 2 of them in the tonsil [23]. Several other cases with tonsillar KS were reported [24-26]. Treatment options included surgical resection and/or radiotherapy.

Individuals treated with irradiation for benign conditions of the head and neck during childhood are at higher risk of developing secondary tumors in the tonsils and adenoids, and should be monitored [27]. Several studies concerning second malignancies were reported in large numbers of patients treated for Hodgkin's disease [28-33]. An analysis from Nordic countries reported only one case of KS as second malignancy after treatment for Hodgkin's disease [33]. In another large retrospective analysis from North America and Europe that included 32591 patients with Hodgkin's disease and 2153 secondary cancers, 2 KS cases were found [34].

In conclusion, in our case KS was detected in the radiotherapy field for Hodgkin's disease treated 20 years ago. Although no significant association between HIV-negative KS and lymphoproliferative disorders is found in the relevant literature, new identified masses after long remission periods should be clarified histologically.

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