Kaposi's sarcoma presenting with multiple cervical lymphadenopathies in a renal transplant recipient: a case report

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Case report

A 57-year-old man underwent cadaveric renal transplantation in January 2018 and was prescribed mycophenolate mofetil, tacrolimus, and prednisolone as post-transplant immunosuppressive therapy. He developed multiple cervical lymphadenopathies at 6 months after transplantation. Fine needle aspiration cytology of the left submandibular lymph node, performed in the private sector, revealed only a hypocellular lesion. Considering the possibility of a post-transplantation lymphoproliferative disorder, excisional biopsy was arranged in our unit, but the patient defaulted from his appointment.

The patient attended the emergency department 9 months after transplantation complaining of shortness of breath. Physical examination on admission revealed generalised lymphadenopathy. Chest radiograph showed left lower, left middle, and right lower zone infiltrates. Despite the use of empirical piperacillin/tazobactam and withholding of mycophenolate mofetil, his condition deteriorated with worsening type one respiratory failure and increasing bilateral lung infiltrates on serial chest radiographs. Tacrolimus was discontinued. However, serial procalcitonin levels were undetectable. Computed tomography scan of the thorax suggested focal consolidative changes with diffuse cervical, axillary, mediastinal, hilar and abdominal lymphadenopathy (Fig 1). Biopsy of the groin and cervical lymph node showed spindle cell proliferation associated with surrounding vascular channels, red cell extravasation between spindle cells (Fig 2a), and positive human herpesvirus 8 (HHV-8) staining (Fig 2b). This confirmed the diagnosis of Kaposi's sarcoma (KS). There was no plasmablastic histopathology to suggest the presence of multi-centric Castleman disease. Despite maximum supportive therapy with mechanical ventilation, empirical antimicrobials and antifungal treatment, his condition further deteriorated and he succumbed due to respiratory failure.

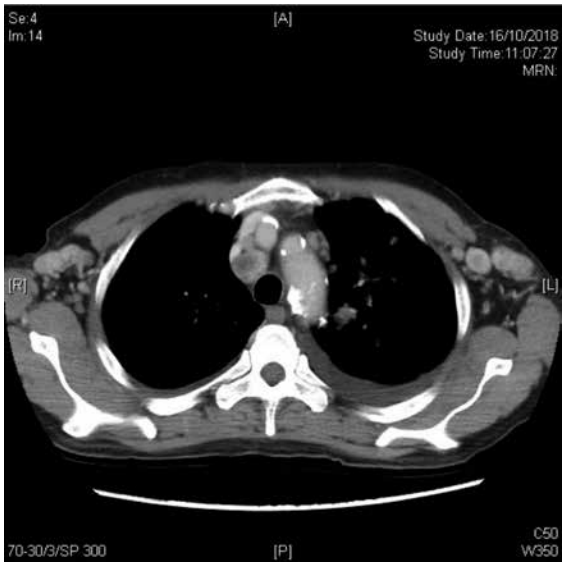

FIG 1. Computed tomography image of thorax showing diffuse mediastinal lymphadenopathy

Discussion

Immunosuppressive therapy is known to increase the risk of infection and malignancy. In a study of incidence of malignancy among a cohort of Hong Kong kidney transplant recipients from 1972 to 2011, the most prevalent malignancies were non-Hodgkin's lymphoma followed by colorectal cancer, lung cancer, kidney cancer, and non-melanoma skin cancer. Only five cases of KS were reported.[1] The low incidence of KS may be due to the low prevalence of HHV-8 seroprevalence in Asia.[2] There were only 68 reports of KS in Hong Kong between 1983 and 2016 according to the Hong Kong Cancer Registry. In this report, we describe a case of KS in a renal transplant recipient who presented with multiple cervical lymphadenopathies.

In the clinical context of multiple cervical lymphadenopathies in a post-transplant recipient, post-transplant lymphoproliferative disorder, and multi-centric Castleman disease are our initial top differential diagnoses. However, the histology of the lymph node of our patient did not suggest these diagnoses but KS. The clinical presentation of post-transplant KS can be divided into exclusive

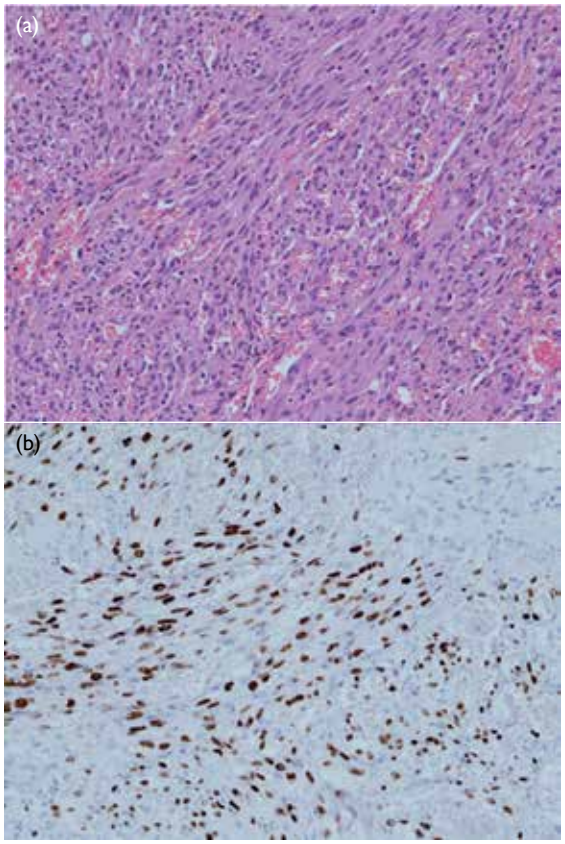

FIG 2. Photomicrographs showing (a) haematoxylin-eosin stained low-power view of fascicles of spindle cells with uniform nuclei forming slit-like vascular spaces and (b) diffuse immunohistochemical staining for human herpesvirus 8

dermatological lesions or mucocutaneous lesions, with or without visceral involvement. Most patients present with single or multiple pigmented skin lesions with or without lower limb skin lymphoedema.[3-7] Non-cutaneous KS is uncommon and was reported to account for only 5.4% of KS in a large AIDS-associated KS cohort.[8] The gastrointestinal tract and the lungs are the most common sites for visceral involvement.[4,7] Lymph node involvement is commonly associated with diffuse dermatological lesions or visceral involvement.[7,9] Concomitant lymphoma is a possible but uncommon diagnosis for multiple cervical lymphadenopathies in a patient with KS.[5] Overall, post-transplant KS that presents with multiple cervical lymphadenopathies without skin lesions is rare.

The first case of KS after renal transplantation was reported in 1969. Its prevalence has been reported as 0.4% to 5.3%, depending on the geographical prevalence of HHV-8 seropositivity.[10,11] The average time to diagnosis has been reported as 12 to 39 months after transplantation.[3,4,10] There is a male preponderance with a male-to-female ratio of 3:1.[4] The 5-year survival rate is around 70%, although those with visceral involvement generally carry a poorer prognosis.[12]

There are no established guidelines for treatment of post-transplant KS so treatment often depends on clinical presentation. Tapering or withdrawal of immunosuppressants is the mainstay of therapy. Intralesional chemotherapy may be used for a single dermatological lesion. Systemic chemotherapy, such as liposomal anthracycline or taxanes, may be considered for widespread disease. Complete remission with immunosuppressant reduction or withdrawal has been reported as 50% to 60% and graft loss as 20% to 30% in the pre-mammalian target of rapamycin (mTOR) inhibitor era.[7,10] Treatment with mTOR inhibitor, such as sirolimus, has gained recognition with its anti-angiogenic and anti-neoplastic activity, particularly among patients with an exclusive dermatological presentation. Three previous case series of 25 patients reported a 100% remission rate after switching from a calcineurin inhibitor to sirolimus, while two patients had graft loss due to causes other than rejection.[3,5,6] Other case series have reported treatment failure with sirolimus. Visceral involvement and delay in switching from calcineurin inhibitor to mTOR inhibitor after diagnosis of KS may contribute to treatment failure.[9] Further study is essential to determine the optimal treatment for post-transplant KS, especially for those with visceral involvement.

Conclusion

Post-transplant KS presenting with multiple cervical lymphadenopathies is rare and may signify an aggressive subtype. Withdrawing immunosuppressive therapy alone failed to salvage our patient. Further study is required to evaluate the potential of switching mycophenolate mofetil and calcineurin inhibitor to mTOR inhibitor to improve the prognosis for this subgroup of patients.

Author contributions

All authors contributed to the concept of the study, acquisition and analysis of the data, drafting of the manuscript, and critical revision of the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

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Declaration

Part of the content about this case was presented in the Nephrology interhospital meeting in September 2019.

Conflict of interest

All authors have disclosed no conflicts of interest.

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Ethical approval

The patient was treated in accordance with the Declaration of Helsinki. The patient provided informed consent for all procedures.

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