

Metabolic changes in HIV treatment as risk factor of the papillary thyroid cancer: a case report

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ABSTRACT

Obesity is a major environmental risk factors for the appearance of different types of cancers. Recently, research has shown a significant relationship between obesity and papillary thyroid cancer. HIV infection, and especially the antiretroviral therapy predisposes these patients to the development of several metabolic disorders, including weight gain. In addition to HIV-related malignancies, increased obesity rate in this group of individuals could predict a higher risk for the diagnosis of thyroid cancer. We present a case report of an HIV-positive patient with obesity and a malignant thyroid nodule.

Introduction

The treatment of patients infected with human immunodeficiency virus (HIV) involves various changes, especially endocrine disorders such as lipodystrophy, diabetes mellitus, dyslipidemia and hypovitaminosis D [1]. In seropositive patients for the use of antiretroviral therapy, we must also be aware of some common types of cancer in this group of individuals, such as Kaposi's sarcoma and non-Hodgkin's lymphoma [2]. But, there are a few studies about HIV and the thyroid carcinoma, particularly papillary [3].

In addition to being an environmental risk factor for several types of cancer, recent studies point to visceral obesity in women in the general population as a potential factor involved in the onset of papillary thyroid cancer (PTC) and also in determining their aggressiveness [4-6]. With the changes in the metabolic profile of patients with HIV on antiretroviral mainly with weight gain [7], we must be attentive to the development of other problems, such as PTC. To this end, we present a case of an HIV-positive patient in regular HIV treatment, obese and diagnosed with a malignant thyroid nodule.

Clinical case

VAAS, 47, female with diagnosis and treatment of HIV since 2004 in the 'Serviço de Atendimento Especializado' in the city of Sao Jose do Rio Preto/Brazil, in regular use of antiretroviral drugs (lamivudine, tenofovir, lopinavir and ritonavir) with undetectable viral load and counting CD4+T lymphocytes in 290 cells/mm³. The patient was referred to the endocrinology clinic initially due to weight gain. Displays physical examination weight of 101.3 kg, height 1.71 and body mass index of 34.6 kg/m² (obese grade I). The laboratory tests shows no glucose and lipid changes and euthyroid (TSH 4.39 mUI/L and free T4 0.97 ng/dL). Patient was advised to make lifestyle changes with diet and exercise regularly.

In routine visit, patient returns with complains of discomfort and increased cervical volume 3 weeks ago. Cervical palpation detected the presence of a nodulation in the projection of the right lobe of the thyroid. Asked ultrasound that viewed a hypoechoic nodule of 0.4 × 0.3 cm in the left lobe without circulation and isoecogenic nodule of 2.1 × 1.9 cm in the right lobe with a predominance of peripheral circulation.

KEYWORDS

- HIV
- obesity
- antiretroviral
- papillary thyroid cancer

Patient underwent aspiration with fine needle guided by ultrasound in the nodule in the right lobe of the thyroid and this was classified by the pathologist as Bethesda V and high risk of malignancy. After this initial evaluation, the patient was referred to the head and neck surgeon and for a total thyroidectomy and pathology confirmed a PTC classic with T1N0Mx classification. After surgery, patient underwent ablative dose of radioiodine (100 mCi) with satisfactory uptake only in the anterior cervical region. Started replacement with levothyroxine to maintain suppressed TSH levels.

After a year of the total thyroidectomy, the patient remains asymptomatic and without disease recurrence. Currently the patient is using levothyroxine 225 µg/day and in laboratory tests shows TSH 0.1 mUI/L, free T4 1.76 ng/dL, anti thyroglobulin antibody negative and thyroglobulin 0,1ng/mL. Ultrasound cervical compatible with the status postoperative total thyroidectomy and only with the presence of elongated nodes in a normal aspect in V left compartment.

Discussion

Beside of tabagism, obesity emerges as an important environmental risk factor for the development of several malignancies [8]. The worldwide increase in the prevalence of obesity may have an important relationship with the increase in the prevalence of thyroid cancer, especially the PTC [9].

The classic clinical factors to evaluate the risk of malignancy in thyroid nodules are the extremes of age, male gender, family history of thyroid cancer, previous history of radiation in the neck and hardened thyroid nodules and rapid growth [10]. Recent studies indicate obesity as a risk factor for the emergence of PTC and its postoperative prognosis, particularly among

women [6,11].

HIV is a common viral infection in Brazil [12]. The virus and its treatment, especially the use of protease inhibitors, are involved in important metabolic changes [13]. Besides malignancies common HIV-related [2], these changes arise with the treatment of the disease is a potential risk factor to be diagnosed a large number of PTC cases in individuals, particularly in women, as shown in our case.

Previous studies have relating follicular thyroid cancer in HIV-positive patients in advanced stages of the disease [14,15]. It is worth to emphasize that, in our present case, the patient presents with classic PTC, most prevalent form of thyroid cancer [16], and was stable HIV treatment with an undetectable viral load.

The multidisciplinary evaluation of seropositive patients is extremely important, and the endocrinologist has an essential role in the follow-up of these patients. HIV infection and antiretroviral lead in several disorders, especially with changes that contribute to the patient presents criteria for metabolic syndrome [17]. To represent a potential risk for the emergence of PTC, obesity in this group of individuals should not be seen only as a risk factor for diseases such as diabetes and dyslipidemia, and evaluation for nodules thyroid should become a routine outpatient evaluation of the obese patients in the treatment of HIV.

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Interest conflicts

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The authors and their institution have no conflicts of interest related to this clinical case.

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