IJPHS:
International Journal of Psychology and Health Science
GREENATION PUBLISHER
+62 812 1046 7572 http://greenpub.org greenation.info@gmail.com
DOI: https://doi.org/10.38035/ijphs.v3i1
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Subacute Thyroiditis and HIV Infection in A Male Patient: A Rare Case Report

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Abstract: Subacute thyroiditis (SAT) is an inflammatory disorder of the thyroid gland, primarily characterized by pain and commonly attributed to viral infections. However, its occurrence in individuals with HIV is exceedingly rare, with only a limited number of documented cases exploring the association between SAT and HIV. This report presents a case of SAT in a patient diagnosed with HIV. Case Report: A 32-year-old male presented with anterior neck pain and swelling, subsequently diagnosed with SAT in the context of HIV infection. Discussion: The patient reported symptoms of anterior neck pain and swelling. Thyroid ultrasonography demonstrated a hypoechoic appearance with right thyroid gland enlargement, while fine-needle aspiration biopsy (FNAB) revealed histomorphological findings consistent with SAT. Several factors may contribute to SAT, including immunosuppression associated with HIV/AIDS. HIV-induced immune dysfunction increases susceptibility to opportunistic infections, which may act as potential triggers for SAT. Conclusion: HIV infection plays a role in the pathogenesis of thyroiditis both directly and indirectly, through immune system impairment and predisposition to secondary infections.

Keywords: Subacute Thyroiditis (SAT), Immune System, HIV

INTRODUCTION

Thyroiditis refers to inflammation of the thyroid gland and is broadly classified into acute and chronic forms. Acute thyroiditis is further divided into suppurative and non-suppurative types, with the latter also known as subacute thyroiditis (SAT), granulomatous thyroiditis, or De Quervain's thyroiditis. Subacute (De Quervain's) thyroiditis is a painful inflammatory condition of the thyroid gland, believed to be triggered by viral infections. It is clinically characterized by neck pain, fever, elevated erythrocyte sedimentation rate (ESR), and suppression of thyroid-stimulating hormone (TSH). The disease typically progresses through distinct phases, beginning with hyperthyroidism, followed by a euthyroid phase, then transient hypothyroidism, and ultimately returning to a euthyroid state.

Several viral infections have been reported in patients with SAT, including influenza virus, measles, adenovirus, and coxsackie virus. However, culturing other viruses from SAT patients has been proven to be difficult[1,4]. Human immunodeficiency virus (HIV) affects nearly all tissues in the body due to its impact on immune system cells and its interaction with CD4+

molecules found in many cells and tissues. HIV infection leads to a progressive decline in CD4+ cells, resulting in immunosuppression and an increased risk of opportunistic infections. In medical literature, there is no established association between HIV and SAT. HIV infection is a multisystemic disorder with various clinical manifestations, including flu-like symptoms, nonspecific neurological symptoms, and endocrine abnormalities[5,6,7,8]. SAT cases associated with HIV are rare, and there are limited case reports describing the relationship between HIV and SAT. However, in this case, we reported a patient with SAT associated with HIV.

METHOD

A 32-year-old male private-sector employee presented to the internal medicine clinic with complaints of swelling in the anterior neck for the past week. The swelling was accompanied by pain, which worsened with swallowing and upon palpation. The patient had a history of multiple sexual partners. Additionally, he reported fever and fatigue for one week but had no history of flu-like symptoms in the past two months.

On clinical examination, his axillary temperature was 38.2°C, pulse rate was 82 beats per minute (regular), blood pressure was 112/60 mmHg, and conjunctiva appeared pale. There was tenderness on palpation of the thyroid gland, with thyroid enlargement measuring approximately 2 cm in diameter. Laboratory tests revealed a euthyroid state with normal FT4 levels (1.14 ng/dL) and low TSH levels (0.162 µIU/mL). Complete blood count showed low hemoglobin (9.8 g/dL), elevated eosinophils (6.3%), low lymphocyte count (24.95%), and an increased ESR (83 mm/hour). Liver function tests showed GOT 18 U/L and GPT 12 U/L, while renal function tests showed urea 14 mg/dL and creatinine 0.79 mg/dL. A chest X-ray revealed tracheal deviation to the left.

Further investigations for hepatitis B and C were non-reactive, syphilis testing was negative, and HIV testing was reactive, with a viral load of 6.18×10^5 copies/mL and a CD4 count of 33 cells/µL. Thyroid ultrasound showed a hypoechoic and enlarged right thyroid without nodules or cysts on the left thyroid. Fine-needle aspiration biopsy (FNAB) revealed histomorphological features consistent with subacute thyroiditis. Based on clinical and diagnostic findings, the patient was diagnosed with subacute thyroiditis and HIV infection. He was treated with paracetamol for fever relief and methylprednisolone 4 mg three times daily for two weeks. The patient was also started on antiretroviral therapy (ART).

RESULTS AND DISCUSSION

The diagnosis of subacute thyroiditis is established through history-taking, physical examination, and laboratory findings. Patients typically present with anterior neck pain and swelling. Other associated symptoms may include fatigue, myalgia, arthralgia, dysphagia, weight loss, and mild to moderate fever. Physical examination often reveals tenderness upon palpation of the anterior neck and thyroid gland enlargement [2,9,10]. Laboratory findings typically show markedly elevated ESR (>50 mm/hour) and increased C-reactive protein (CRP). Serum FT4 levels are often elevated, while serum TSH levels are decreased in thyrotoxicosis. FNAB findings are consistent with subacute thyroiditis [10].

In this case, the patient complained of anterior neck swelling and pain, worsening with swallowing. He also experienced fever and fatigue for a week. The diagnosis was supported by an elevated ESR (83 mm/hour), low TSH (0.162 µIU/mL), and thyroid ultrasound findings showing hypoechoic enlargement of the right thyroid. FNAB findings further confirmed subacute thyroiditis.

Subacute thyroiditis is thought to be caused by viral infections, often following upper respiratory tract infections that occur 2 to 8 weeks before thyroiditis develops [11]. Several factors can predispose individuals to SAT, including immunosuppression due to HIV/AIDS. The relationship between HIV infection and thyroiditis involves complex interactions between

HIV-induced immune dysregulation and thyroid function. HIV weakens the immune system, making patients more susceptible to opportunistic infections, including infections that may trigger SAT [12]. HIV affects almost all tissues in the body due to its impact on immune system cells, particularly CD4+ T lymphocytes, monocytes, macrophages, and antigen-presenting cells such as dendritic cells in the blood and follicular dendritic cells in lymph nodes, where early HIV replication occurs. The progressive decline in CD4+ cells leads to immune suppression and an increased risk of opportunistic infections. Opportunistic infections play a role as a trigger to activate the immune system and is thought to be the basic pathogenesis mechanism of thyroid dysfunction in patients with HIV, in which the infection is also combined with the development of inflammatory process in thyroid glands [8,13]. HIV infection has also been associated with thyroid dysfunction, including hypothyroidism. Studies have shown significant changes in TSH and FT4 levels before and after ART, with post-ART treatment often leading to increased TSH and decreased FT4, which can worsen thyroid dysfunction [14]. In some cases, HIV may also trigger autoimmune reactions against the thyroid gland, resulting in chronic inflammation and reduced thyroid hormone production, leading to hypothyroidism [15].

In this patient, there was no history of prior respiratory tract infections, suggesting that SAT developed independently of HIV infection. However, the patient's immunosuppressed state due to HIV likely made him more susceptible to opportunistic infections and thyroid inflammation. HIV may have also directly affected thyroid function, leading to changes in TSH and FT4 levels.

The primary treatment for thyroiditis focuses on pain relief and symptom control. The mainstay of therapy includes anti-inflammatory agents such as salicylic acid (600 mg orally every 6 hours) or ibuprofen (400–800 mg orally every 8 hours). For severe pain, corticosteroids may be administered orally. Symptoms usually resolve within 2–3 days. [3].

In this case, the patient was treated with paracetamol for fever and methylprednisolone 4 mg three times daily for two weeks, leading to complete resolution of symptoms within two weeks.

CONCLUSIONS

HIV infection, both directly and indirectly, contributes to thyroiditis through immune dysregulation and secondary infections. Therefore, HIV screening should be considered in SAT patients at risk of HIV infection. Additionally, thyroid function monitoring is essential in HIV patients to detect thyroid disorders early.

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