Turkish Journal of Endocrinology and Metabolism, (2004) 4 : 135-138 **ORIGINAL ARTICLE**

Subacute Thyroiditis in the Western Region of Saudi Arabia

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The aim of this study is to assess the clinical presentation of 23 patients with subacute thyroiditis and the diagnostic value of radionuclear scan at King Abdulaziz University Hospital, Jeddah, Saudi Arabia.

This is a cohort study which consists of all the patients who visited the Endocrinology clinic with a suspected diagnosis of subacute thyroiditis between July 2002 and July 2004. Medical charts including data of the age, sex, clinical presentation, systemic symptoms and clinical examination of the thyroid gland were reviewed. The laboratory data included WBC count and its differential count, ESR, thyroid function test and thyroid antibodies. The radionuclear scan results were also noted. The mode of therapy provided to patients and the outcome of the treatment during a follow up period of two years was reported.

A t otal of 23 adult patients with subacute thyroiditis (15 females and 8 males with a female to male ratio 1.9:1) were reviewed over a two year period. The mean age was 35.8±9.2 years. Eighteen patients (78%) had an upper respiratory tract infection at the initial clinical presentation. Twenty patients (87%) visited an ENT specialist for a sore throat and an abnormal sensation in the throat at least two weeks before presentation to the endocrinologist. Two patients were admitted to a medical unit with a diagnosis of fever of unknown origin for four weeks. All patients had an elevated FT4 (35.7±19.8 pmol/L) and a suppressed TSH (0.043±0.065 IU). Radionuclear san showed either no uptake at all in 12 patients or minimal uptake in 11 patients (0.32±0.55%). Eight patients (35%) received predinsolone therapy alone with an average dose of 30-40 mg daily for 7-8 days; 7 patients (30%) were treated with non-steroidal anti-inflammatory drugs only. Eight (35%) patients were treated with both NSAIDs and corticosteroids. Hypothyroidism, with elevated TSH, was observed in 6 (26%) of our patients with positive thyroid antibodies during the first 6 months of follow up. There were no reported cases of recurrent or permanent hypothyroidism in our cohort study.

Subacute thyroiditis is an uncommon disease that should be considered in the differential diagnosis of acute anterior neck pain, sore throat and fever especially if patients do not respond to treatment. In the clinical setting, radioiodine uptake can help exclude other diseases, confirm the diagnosis and expedite the initiation of appropriate therapy to relieve symptoms.

Key words: **Subacute thyroiditis, radionuclear scan, hypothyroidism, predinsolone, NSAIDs**

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Introduction

Subacute thyroiditis (also called de Quervain thyroiditis or granulmatous thyroiditis) is a self-limiting, possibly viral, inflammatory thyroid disorder which is usually associated with pain in the region of the thyroid in addition to other systemic symptoms (1). Other clinical features of subacute thyroiditis,

SAT, include symptoms of hyperthyroidism, suppressed levels of Thyroid Stimulating Hormone, TSH, low thyroid uptake of radioactive iodine, and an elevated erythrocyte sedimentation rate. The diagnosis is based on clinical and laboratory data. A tissue diagnosis is rarely needed (2).

In most cases only symptomatic treatment is necessary consisting of a short course of a nonsteroidal anti-inflammatory drug. Corticosteroids are very effective in relieving symptoms of SAT, often within 24 hours. Levothyroxine is only indicated during the hypothyroid phase of the illness (3). SAT usually resolves completely and spontaneously over several weeks or months. Rarely, the course may extend over several years with repeated bouts of inflammation of the thyroid gland. The incidence of SAT is low. There are only a few sporadic case reports of SAT from Saudi Arabia and other countries (5-7). The aim of our study is to assess the clinical presentations of 23 patients with SAT and the diagnostic value of radionuclear scan at King Abdulaziz University Hospital, Jeddah, Saudi Arabia.

Material and Methods

This is a Cohort study that included all the patients who presented to the Endocrinology clinic with a probable diagnosis of subacute thyroiditis at King Abdulaziz University Hospital (Jeddah) Saudi Arabia between July 2002 and July 2004. The inclusion criteria for diagnosis of SAT were any one of the following:

- Painful thyroid along with either absent or suppressed uptake of iodine or an elevated erythrocyte sedimentation rate (ESR), or both.
- Unilateral thyroid pain with abnormally low uptake of iodine and elevated ESR.

The data was obtained by reviewing each patient's medical chart for age, sex, nationality, clinical presentation, systemic symptoms and symptoms of hyperthyroid. A detailed clinical examination of the thyroid gland was noted. The laboratory data included White Blood Cell Count with its differential count, ESR, thyroid function test (FT4, FT3, TSH), thyroid antibodies (Anti-microsomal and anti-thyrogloubulin antibodies). The radionuclear uptake scan of each patient was reported. The mode of therapy provided to the patients and the outcome of the treatment during a follow up period of two years was also noted. The results were expressed as mean ± SD or median (range).

Results

A total of 23 adult patients with subacute thyroiditis (15 females and 8 males with a female to male ratio 1.9:1) were reviewed over a two year period. The mean age was 35.8±9.2 years; the range was 21-54 years. Eleven patients (48%) were Saudi, 12 patients (52%) were non-Saudi (5 Arabs, 4 Asians, 2 Philippinos and 1 British).

Sympto ms at onset: Eighteen patients patients (78%) had a history of an upper respiratory tract infection. Twenty patients (87%) visited an ENT specialist for a sore throat and an abnormal sensation of throat at least two weeks before their visit to the endocrinologist. Two patients were admitted to the medical unit with a diagnosis of fever of unknown origin for four weeks. Table 1 shows the symptoms and signs in the patients studi ed.

Table 1. Clinical Presentation of SAT in 23 Patients.

Symptoms	NO of patients	%	Signs	NO of patient	%
Upper respiratory tract infection	18	78	Fever (37.5-40°C)	15	65
Sore throat	20	87	Goiter	9	39
Unilateral thyroid pain	3	13	Tender neck	15	65
Thyroid pain	15	65	Localized tenderness in neck	16	69.5
Thyroid pain radiating to jaw	12	52	Palpable LN	3	13
Arthralgia	10	43.8			
Myalgia	12	52			
Tremor	18	78.3			
Sweating	18	78.3			
Weight loss	16	69.5			
Fever of unknown origin	2	8.7			

Table 2. Laboratory Data at Diagnosis for 23 Patients with SAT.

Laboratory test	Mean ± SD	Median	Range
Free T4 (12-22 pmol/L)	35.7 ± 19.8	28.6	15.7 - 100
Free T3 (2.8-7 nmol/L)	14.25 ± 5.07	14.25	5.5 - 23.4
TSH (0.27-4.2 IU)	0.043 ± 0.065	0.005	0.003 - .096
WBC (3.8*10^6/L)	8.3 ± 2.38	7.7	4.7 - 13.6
ESR	41.87 ± 9.7	29	10 - 83
Uptake of iodine (%)	0.32 ± 0.55	0.2	0-2 %

Laborator y and radionuclear scan results: Table 2 shows the initial laboratory and radionuclear scan in our cohort study. All the patients had an elevated FT4 (35.7±19.8 pmol/L) and a suppressed TSH (0.043±0.065IU). Thyroid antibodies (anti microsomal and antithyroglublin antibodies) were measured in 10 patients (8 patients were positive; and 2 patients were negative). Radio nuclear san confirmed the diagnosis of SAT, which showed either no uptake at all in 12 patients or minimal uptake in 11 patients (0.32±0.55%). Ultrasonography was done in one patient only. CT scan was done in one diabetic patient who presented with a tender neck and fever for four weeks to exclude a thyroid abscess. Fine needle aspiration (FNA) was not preformed on any of the patients.

Therapy: Table 3 shows the type of therapy administered to the patients. Eight patients (35%) were treated with predinsolone alone in a dose of 30-40 mg daily for 7-10 days. Seven (30%) patients were treated with nonsteroidal anti-inflammatory drugs (NSAIDS) only. However 8 (35%) patients were treated with both NSAIDS and corticosteroids. Almost all patients received propranalol to alleviate sympathetic symptoms; 3 patients were treated with neomercazole initially by general physicians.

Follow up: Reports indicate that the hyperthyroid phase is often followed by a transient phase of hypothyroidism. Six patients (26%) with positive thyroid antibodies had elevated TSH during the first 6 months of follow up. Only two of them were treated with L-thyroxine therapy. Permanent hypothyroidism is a recognized complication; no reported cases of permanent hypothyroidism or recurrent SAT were noticed in our cohort during the two year follow up period.

Table 3. Therapy for 23 Patients with SAT.

Therapy	NO of patients	%
NSAIDS alone	8	34.7
NSAID + corticosteroids	8	34.7
Corticosteroids alone	7	30.4
ß blocker (propranolol)	20	87
Ant thyroid medication (neomrcazole)	3	13
Thyroidectomy	0	0

Discussion

Subacute granu lomatous thyroiditis (de Quervain thyroiditis) is an uncommon disease that represents 0.16% to 3.6% of all thyroid disorders. It occurs most commonly in females during the second to fifth decades of life as noted in our study (1). It is generally thought to be a result of a viral infection as it is preceded by an upper respiratory tract infection, which was noticed in 78% of our cases (8).

Patients may present with systemic findings such as weakness, fever, sore throat and an elevated ESR. Eighty seven percent of our patients were diagnosed as pharingitis and treated with antibiotics (9). Typically, a sudden onset of unilateral anterior neck pain occurs and may radiate to the ear, jaw or upper chest. There is usually unilateral or generalized thyroid tenderness. The thyroid tenderness results from stretching the thyroid capsule due to the underlying inflammatory disease process (10) Release of T3 and T4 due to damage of the follicular epithelium may induce transient hyperthyroidism. Almost all our patients had some symptoms or signs of hyperthyroidism with a high FT4 and suppressed TSH during their visit to the endocrinologist (11). A subsequent hypothyroid phase may occur, and it may last for several months. Six of our patients

(26%) developed hypothyroidism during the first 6 months of follow up (12). Rarely, permanent hypothyroidism may occur. Pathologically, early in the process, disruption of the thyroid follicles occurs with subsequent release of colloid into the stroma. These changes result in an inflammatory response dominated initially by neutrophils and subsequently by a granulomatous process with lymphocytes, histocytes and gaint cells surrounding and engulfing deposits of colloid. Ultimately fibrosis occurs especially in areas of severe destruction. Eleven of our cases (48%) had neutrophil leukocytosis; however, others had a normal WBC count because of their late presentation to the endocrinologist. On images, subacute granulomatous thyroiditis (de- Quervains thyroiditis) shows a low uptake of iodine on radionuclide scintigraphy (radioiodine uptake), probably because of follicular cell destruction, as been noted in our cohort study (13). One diabetic patient had a CT scan to exclude a thyroid abscess. He visited different specialists and was treated with different antibiotics. The CT scan showed low attenuation of the thyroid gland; this could be explained on the basis of follicular cell destruction and loss of iodine concentration within the thyroid gland (14,15).

Generally, treatment consists of nonsteroidal anti-inflammatory drugs (NSAIDs). Steroids may also be administrated until symptoms disappear. Usually these patients do not need treatment of hyperthyroidism; however, three of our patients were treated by neomercazole initially before being referred to the endocrinologist (16,17).

Conclusion

Subacute thyroiditis is an uncommon disease that should be considered in the differential diagnosis of acute anterior neck pain, sore throat and fever especially if the patients did not respond to treatment. In the clinical setting, radioiodine uptake can help exclude other diseases, confirm the diagnosis and expedite the initiation of appropriate therapy to relieve symptoms.

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