



## Subacute Thyroiditis – A Case Report

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### Abstract

A 47 years old man presented to the hospital department with pain in his anterior neck region. The pain was also present when the patient swallowed food. Along with this pain, the patient also complained of suffering from low-grade fever, myalgia, and fatigue.

Before coming to the hospital, the patient had taken NSAIDs for 5 days straight, but with no effect on his pain and other conditions except for temporary relief.

Then 4 days back, he went to a private hospital where his lab investigations were ordered. The patient came in positive for hyperthyroidism. The medicines prescribed by that hospital setting were of no use and again, did not help in reducing his symptoms.

Along with the usual lab investigations and the thyroid profile ordered for this patient, his general physical examination was performed. The patient was afebrile at the time of examination, he had no fine or shaking tremors in his hands. Yet, there was a visible

diffuse swelling noticed on his neck, which was very much consistent with the findings of goitre.

Apart from this, no cervical lymphadenopathy was appreciated. No other abnormality was detected in the rest of the examination. The patient's CBC report was normal as well.

Based on the other investigations and imaging combined with the symptoms of the patient, it was found that the patient might be suffering from subacute thyroiditis.

Subacute thyroiditis is an inflammatory condition that affects the thyroid gland. It is a painful condition that may earlier arise only in one lobe of the thyroid gland, but may sooner or later go on to involve the other lobe, thus affecting the entire thyroid gland and causing a myriad of unexpected symptoms in the patient.

### Keywords

Fever, Thyroiditis, Subacute

## **Introduction**

Subacute Thyroiditis is a painful inflammation of the thyroid gland. The thyroid gland is an important endocrine gland of the body that controls and regulates several metabolic functions in the body. Subacute thyroiditis is often seen to occur as a consequence of a sore throat or upper respiratory tract infection. It is often referred to as PSAT (painful swelling of the thyroid gland), or De Quervain thyroiditis, depending on the etiology or the underlying conditions.

At times, subacute thyroiditis is also called 'creeping thyroiditis' because of the way that it starts in just one lobe of the gland and then progressively spreads to involve the other lobe too. The pain from the neck may also get radiated to the ear or the jaw, and may even cause dysphagia in some patients.<sup>1</sup>

In the majority of the cases, subacute thyroiditis is thought to stem from a viral etiology. Apart from that, people develop this condition insidiously as well, thus raising questions behind the actual causative agent. In some studies, the cause has also been labeled as being of 'autoimmune' background or that of unknown etiology.

Approximately half of the patients present within the first week of their symptoms, which is usually pain of increasing intensity. The course of the disease goes on for up to 6 weeks, during which it keeps on fluctuating in its course.

Some people were also seen to experience a sudden downfall in their symptoms, which came out to be an unexplained case of hypothyroidism on the investigations before their condition reverted to normal.

<sup>2</sup>

## **Case Report**

A 47-years old male patient came to the hospital with a primary complaint of having pain in his

anterior neck region. The pain was intense enough to cause pain while swallowing as well. The patient was also suffering from significant myalgia and fatigue that altered with his daily activities, along with developing a low-grade fever during this duration too.

At home, the patient had tried managing his condition with NSAIDs but felt no change after taking them. He then went to a nearby private hospital where his lab investigations were ordered. They came out with hyperthyroidism as a cause behind all these symptoms. The doctors over there prescribed him Carbamazepine 10 mg BID from that day onwards (4 days back). But even after starting this medicine, he felt no improvement whatsoever in his condition.

When he came to our department, his full systemic examination was performed. At that time, he did not have any fever. The vitals taken at that particular time were found to be as follows: BP - 105/67 mm Hg and Pulse - 68 /min, both being slightly towards the lower-normal side.

No fine tremors were observed on his hands. He had no cervical or other lymphadenopathy. However, a diffuse, tender swelling or goitre was found on the neck region, thus confirming that there was something wrong within the thyroid gland.

Looking at this scenario, the patient's further investigations were ordered. Thyroid profile was of major interest since the patient's condition was somewhere between hypothyroidism and hyperthyroidism and only a final diagnosis could have helped select the cause.

The following observations were found in the lab reports:

| Test Name              | Values                        |
|------------------------|-------------------------------|
| TSH                    | 0.010milli IU/L (0.270-4.200) |
| FT4                    | 31.6mIU/L                     |
| FT3                    | 8.4mIU/L                      |
| ESR                    | 69mm/hr                       |
| CRP                    | 18.6 mg/lit                   |
| ATPO                   | 15.8                          |
| Thyroid Autoantibodies | 14.4                          |
| CBC                    | Normal                        |

Table 1

From these investigations, it was confirmed that the patient was suffering from either of the following conditions: Graves Disease, or Toxic Nodular Goiter, or Thyroiditis (DeQuervain VS Hashimoto?)

To settle the claim once and for all, the patient's thyroid ultrasound was ordered. It showed the following reports:

- Enlarged Heterogeneous and Hypoechoic with normal color flow
- Right Lobe Volume 12 ml
- Left Lobe Volume 4 ml
- Thyroid Scan: Decreased uptake

### Diagnosis

All of the above-mentioned findings were consistent with the symptoms and clinical presentation of subacute thyroiditis and so, the patient was diagnosed to be suffering from this condition.

### Management Plan

When the patient presented to the clinic, he was already taking Carbimazole for his condition. But since there was no tachycardia or thyrotoxicosis - related symptom associated with his condition, he was advised to stop taking it.

Luckily, his investigations came out the same day. He was started on steroids, i.e., Prednisolone with

gradual tapering off of the dose. Initially, the dose was started at 20 mg daily for 14 days, then 10 mg for another 14 days, and then finally to 5 mg for 14 days.

After this course that lasted for 3 weeks, the patient was advised to come up for a follow-up. It was tenderness associated with the goitre had gone while the

observed that all his symptoms had subsided; the goitre itself had shrunk considerably in size.

It was at this stage that his thyroid profile was again ordered. The final lab results showed the following results:

| <b>Test Name</b> | <b>Values</b> |
|------------------|---------------|
| TSH              | 3.3milli IU/L |
| FT4              | 16mIU/L       |
| FT3              | 05mIU/L       |
| ESR              | 12 mm/hr      |
| CRP              | 1.34 mg/lit   |

**Table 2**

Meanwhile, the thyroid scan showed the followed results:

- Heterogeneous (persistent), hypoechoic but had returned to normal size
- Right lobe volume 5 ml (earlier it was 12)
- Left lobe volume 5 ml.

Thus, it was evident that the treatment proved to be successful in this patient.

**+ DISCUSSION +**

**Background**

In normal conditions, the thyroid gland is non-

palpable. SAT or subacute granulomatous thyroiditis or De Quervain's thyroiditis is the most common cause of a painful thyroid.

It is in this condition that the thyroid gland becomes extremely painful, enlarged, smooth, and firm yet palpable on investigations. The exact cause behind this condition is unknown, although a couple of viruses are thought to give rise to it. The common viruses associated with this condition include Hepatitis B and C, Cytomegalovirus, Coxsackievirus types A and B, Enterovirus, Mumps virus, etc.<sup>3</sup>

## **Epidemiology**

Subacute thyroiditis was found to occur most commonly following an upper respiratory tract infection.

Moreover, statistics revealed that the prevalence of this disease ranges from 12/100,000 patients in a year. It was found to occur with a greater incidence in females than in males. Also, females in their adulthood (between 25-35 years) were found to be affected the most by this disease. Increasing age decreases the frequency of this disease.<sup>4</sup>

## **Clinical Features**

The typical presentation of a patient suffering from subacute thyroiditis begins with painful swelling of the thyroid gland. This pain may also radiate to the jaw or the ears. At times, a low-to-high grade fever may also be present. The thyroid gland is also tender and firm on palpation.

Malaise, myalgia, arthralgia, and fatigue are common to occur along with the disease. The disease reaches its peak within 3-4 weeks and sometimes may even take a week to resolve. At other times, it continues for several weeks before getting slowly resolved.

## **Diagnosis**

Often, the condition is diagnosed clinically. At other times, when symptoms overlap, lab investigations are needed. Also, a final diagnosis could only be made under influence of these investigations.

In the case of subacute thyroiditis, a thyroid profile is ordered. It reveals decreased TSH levels but increased T3 and T4 levels. The T3:T4 ratio is always found to be less than 20, whereas ESR, CRP, and WBC levels are all found to be elevated.

Thyroid antibodies may either be absent. If present, then they are always present in low titers.

Radioactive iodine uptake either shows a decrease in uptake and poor visualization of the thyroid.

A thyroid ultrasound may show a heterogeneously hypoechoic pattern along with a suppressed vascular pattern.

## **Management**

In many patients, there is no need for any treatment. In patients who present only with pain, OTC medications or just NSAIDs could be given to relieve the patient of his pain.

However, the final treatment of choice is Prednisone. The starting dose ranges from 20-40 mg, depending on the underlying condition of the patient and their presenting symptoms. The dose is recommended to be tapered off gradually over a few weeks.

In about 90% of patients, there is a complete recovery of the condition along with return of the normal thyroid function.<sup>5</sup>

## **Conclusion**

Subacute thyroiditis is a very painful inflammation of the thyroid gland that presents with swelling of the thyroid gland, along with other painful symptoms on the body. The patient is febrile and it sometimes alters with his vocal cords too.

However, the condition is easily manageable once diagnosed and people can return to their normal lives once they have finished their treatment.

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