# Case Report On Steroid- Responsive Encephalopathy In A Case Of Hashimoto's Thyroiditis

**Abstract:**

**Introduction:** Thyroiditis caused by Hashimoto's common, Thyroid gland enlargement that is painless and diffuse that affects mostly women in their forties and fifties. While most patients are euthyroid, hypothyroidism may grow. In addition, several patients have thyroid antigen-specific cell-mediated immunity, which can be demonstrated using a variety of strategies. The annual number of cases per 10,000 people prevalence of at least 2% among women. Thyroiditis causes the thyroid gland to become extinct capacity to keep iodine in a safe place, generate together with secrete circulating iodoproteins in the blood, and produce inefficient hormone. As a result, the thyroid gland is overstimulated, and the patient has a high rate of Iodine in the thyroid turnover. **Clinical finding:** enlargement of thyroid gland. Difficulty in swallowing, and breathing difficulty, unexplained weight gain. Cconstipation, slow heart ratebeat, fatigue, swelling in extremities, dryness**. Medical history**: In 2010 she was suffering from same problems. Hashimoto thyroiditis cured for medical intervention in Nagpur medical college, after that treatment of Hashimoto thyroiditis she took the treatment in A.V.B. R. Hospital. for management of Hashimoto thyroiditis. Now she is admitted in peadiatrics ward for further management of Hashimoto thyroiditis. **The diagnosis and therapeutic intervention:** After physical examination and investigation, this case was diagnosed as Hashimoto thyroiditis. Thyroid hormone replacement therapy was used to treat the condition. This normally entails taking levothyroxine. (leoxyl **Leoxyl check:** After six to eight weeks of treatment, the TSH level should be normal with dose 12.5-25 mcg. Absorption of levothyroxin may be affected by some drugs, supplements, and diets taken 4 hours. Triiodothyronine 5 to 10 mcg received in twice in day. **Nursing perspectives:** Assessement of d an anterior or posterior location of the thyroid IV Fluid was provided. Check blood pressure and vital signs per hourly. Monitor the Pulse oximetry, ABG, and respiratory rate, and pattern are all factors to consider. **Conclusion:** Comprehensive systemic review of autoimmune disease, our best estimate of incidence rates for hypothyroidism in female and male treatment and management improves the outcomes of Hashimoto thyroiditis.

**Keywords:** Hashimoto thyroiditis, autoimmune, iodoproteins, levothyroxine, hypothyroidism.

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## INTRODUCTION:

Hakaru Hashimoto, a physician from Japan,first identified Hashimoto thyroiditis in 1912. (1881-1934) Hashimoto thyroiditis, also called chronic lymphocytic thyroiditis, is an autoimmune condition in which the immune system attacks the thyroid gland. cells and antibodies[1] Hashimoto's disease is a condition that affects people in the United States is the leading cause of hypothyroidism[2].

Long-term Hashimoto Thyroiditis (HT) induces thyroid shrinkage and atrophy, as well as diffuse enlargement and/or nodule development. These globules are known as nodules must be Unlike papillary thyroid carcinoma (PTC) and primary thyroidal non-Hodgkin lymphoma (PTL), which are also cancers of the thyroid gland, papillary thyroid carcinoma (PTC) and

primary thyroidal non-Hodgkin lymphoma (PTL) are cancers both potential HT difficulties that include pre-surgical diagnoses and care.

Thyroiditis, also known as Hashimoto's thyroiditis, is a condition that affects the thyroid gland's activity of the thyroid produces hormones that aid in the regulation of a number of vital body function. Thyroid hormones help in the regulation of a number of vital body functions .Thyroid hormones, as an example, have an effect on growth and development, as well as Menstrual cycles, body temperature, and weight are all factors to consider. Hashimoto's disease is a chronic inflammatory condition that affects the thyroid gland and reduces its hormone-producing capability. A goitre is a thyroid enlargement that is one of the symptoms of Hashimoto thyroiditis. The enlarged can make the neck appear bloated and can make breathing and swallowing difficult depending on its size. The thyroid gland may shrink over time as a result of damage to the thyroid, and the goitre may gradually disappear. Hashimoto Thyroiditis usually appears in mid- Adulthood. Over the course of months or years, its signs and symptoms appear to change. the development will take place gradually. A variety of factors, including cytokines, are released in situ by the lymphoid infiltrate in HT, increasing the production of reactive oxygen species within the cell (ROS). Reactive oxygen species (ROS), which have major cellular and tissue effects, are the cause of senescence, cancer, and other age-related diseases [3.]

The aim of this research is to look into FNC's function in clinical surveillance and pre-surgical diagnosis of HT in elderly people with diffuse and nodular gland enlargement.

**Incidence:** Hashimoto is a Japanese word that translates to " In the United States, 1 to 2% of the population suffers from thyroiditis. It affects more women than men. Is it The global prevalence of Hashimoto Thyroiditis is estimated to be between 0.3 and 1.5 per 1000 people per year. In a landmark study in 6283 school girls in india,7.5 % evidence of autoimmune thyroiditis on FNAC. In **Nagpur**, 4 per 1000 women and 1 per 1000 men. In **Acharya Vinoba Bhave Rural Hospital, Sawangi (M), Wardha,** 75% clinical hypothyroidism and 71% subclinical hypothyroidism. 21-50year age groups which is 65% this means that major burden of thyroid disorders is an reproductive age groups.

**Patient information:**

Patient specific information: A ~~16~~ 16-year~~s~~ female was admitted in AVBRH on ~~date~~ 01/02/2021 with chief complaint of enlargement of thyroid gland, difficulty in swallowing, breathing ~~difficulty,~~and unexplained weight gain. Constipation, slow heartbeat, fatigue, swelling in extremities, and dryness. After physical examination and investigation, there is abnormal physical examination is diffuse enlargement, single dose, multinodular Goitre. doctor diagnosed this case as Hashimoto thyroiditis.

**Primary concerns and symptoms of the patient**: present case visited AVBRH hospital at peadiatric OPD 1/2/2021 with chief complaint of difficulty in swallowing, breathing ~~difficulty~~, slow heartbeat rate, ~~and~~ fatigue and swelling extremities. Blood pressure was 130/70 mm/hg at the time reporting.

**Medical, family and psycho-social history**: The present case had no history of any medical problems. She belonged to nuclear family, though ~~and~~ her father had medical history of hypertension and mother had diabetes. She was mentally stable, conscious and oriented to date, time and place. She had maintained good relationship with doctors and nurses as well as other patients ~~also~~.

**Relevant past interventions with outcomes:**

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In 2010 she was suffering from the same problems, when physical examination was done. Hashimoto thyroiditis cured for medical intervention in Nagpur medical college. In 2013 she was again suffered from Hashimoto thyroiditis, with some clinical findings such as enlargement of extremities, sore throat etc. After that treatment, of Hashimoto thyroiditis she took the another treatment in A.V.B. R. Hospital. for management of Hashimoto thyroiditis. Now she is admitted in paediatrics ward for further management of Hashimoto thyroiditis.

**Clinical findings:**

The patient was conscious and well oriented to date, time and place. Her body built was moderate and she had maintained good personal hygiene. Signs and symptoms are mostly those of a thyroid gland that is underactive, fatigue together with sluggishness, enlargement of the tongue, unexplained weight gain, constipation, dry skin, enlargement of thyroid glands, slow heartbeat rate, breathing difficulty, and nodules present in thyroid.

On the **physical examination**: Patients with Hashimoto Thyroiditis usually appear fatigued and have myxoedema, bradycardia, bradypnea, presence of goitre, and coarse hair.

**Timelines:** In 2010 she was suffering from same problems, physical examination was done.

Hashimoto thyroiditis cured for medical intervention in Nagpur medical college. In 2013 she was again suffered from Hashimoto thyroiditis, some clinical findings such as enlargement of extremities, sore throat etc. After that treatment of Hashimoto thyroiditis she took the treatment in A.V.B. R. Hospital. for management of Hashimoto thyroiditis. Now she is admitted in paediatrics ward for further management of Hashimoto thyroiditis.

**Diagnostic assessment:** physical assessment based on the patient's medical history, thyroid palpation even inspected and USG, Other investigation.

Thyroid nodules are commonly diagnosed using fine-needle cytology (FNC). When a proper FNC diagnosis is made, it can save time and money by avoiding unnecessary diagnostic surgery or, if surgery is required, it can lead to the proper surgical care.

Anti-thyroid antibodies (ATA) tests, such as the microsomal antibody test (also known as thyroid antibody test), are used to detect anti-thyroid antibodies are available. Antibodies to anti-thyroglobulin are widely used to diagnose Hashimoto thyroiditis.

A blood test is used to confirm a diagnosis of subacute thyroiditis. The levels of certain hormones in the blood will be checked with this examination.

The thyroid-stimulating hormone (TSH) test TSH (thyroid-stimulating hormone test) is a blood test for hypothyroidism diagnosis. The most common cause in hypothyroidism is Hashimoto thyroiditis.

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Free T-4, also known as thyroxine, is an active hormone in the blood that can be used to confirm the presence of Hashimoto's thyroiditis.

Thyroid ultrasound is a form of imaging that the thyroid gland in the neck is pictured using sound. It is commonly used to evaluate lumps or nodules found during a routine physical examination or other imaging test, and it does not use ionising radiation.

No challenges experienced during diagnostic evaluation.

Diagnosis: Hashimoto thyroiditis

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Prognosis: In blood test, increasing hormone in bloodstream. Thyroid- stimulating hormone, T-3 And T-4 level increasing. Free T-4, increasing level of T-4.

**Therapeutic intervention:**

In case report 2 types of therapeutic intervention: medical intervention and nursing intervention.

The patient case took the medical management Thyroid hormone replacement therapy This normally entails taking levothyroxine, a synthetic thyroid hormone, on a regular basis. (leoxyl etc. check after six to eight weeks of therapy, TSH level with dose12.5-25 mcg. Absorption of levothyroxine may be affected by some drugs, supplements, and diets. take 4 hours. Iron supplement, multivitamin 1 tab also received twice in day. Triiodothyronine 5 to 10 mcg received in twice in day. tab. Sucralfate, 1 g take once a days empty stomach.

Changes in therapeutic intervention: there is no change in therapeutic intervention.

**Nursing perspectives:**

Assess From either an anterior or posterior angle, the thyroid is examined. IV Fluid was provided to maintain the fluid and electrolyte. Encourage increased fluid consumption when adhering to the fluid restriction recommendations. Check blood pressure and vital signs per hourly. monitor patient body temperature. Advice the patient to take high fiber in food. Monitor the Pulse oximetry, ABG, and respiratory depth, rate, and pattern Deep breathing, coughing, and motivation spirometry are all good things to do.

**Follow- Up and Outcomes:**

Clinician and patient assessed outcomes: outcomes of patient is reduce swelling of thyroid gland, reduce weight gain of patient, heart rate is normal i.e.72b/m. The breathing pattern is normal i.e. 22 breath/min. patient feel energetic.

Important follow up diagnostic and other test results: The important follow care should be include clinical evaluation. Weight, pulse, and blood pressure readings, as well as a thyroid test if nodules are present.T3 level are normal i.e. 150 nanograms, T4 level is 5.0micrograms per deciliter and free T-4 level is 1.5 nanograms per deciliter of blood.

Intervention adherence and tolerability: Diagnosis of Hashimoto thyroiditis is based on a physical exam and medical history, sign and symptoms and result of blood test. Adherence to recommended treatment regimens is critical to achieving high-quality healthcare results. Patient co-operative in treatment of doctors and nurses. Patient is willing do all the physical examination, diagnostic evaluation and some test. Although no single intervention approach can increase all patients' adherence, there are a few main factors that can help.

Adverse and unanticipated events: no

**Discussion:**

Present case was admitted in hospital with chief compliant was breathing difficulty, enlargement of thyroid gland, slow heart rate, fatigue, enlarge extremities sluggishness, enlargement of the tongue, unexplained weight gain, constipation, dry skin. After physical examination , investigation and diagnostic evaluation doctor diagnosed this case Hashimoto

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thyroiditis. She took treatment Levothyroxine, a synthetic thyroid hormone, is used on a regular basis. Leoxyl After six to eight weeks of treatment, recheck your TSH level with dose12.5-25 mcg. Absorption of levothyroxine may be affected by some drugs, supplements, and diets take 4 hours. Iron supplement, multivitamin 1 tab also received twice in day. Triiodothyronine 5 to 10 mcg received in twice in day. tab. Sucralfate, 1 g take once a days on an empty stomach. Patient condition was stable, blood pressure was controlled i.e. 120/80 mm of hg.

The most effective treatment for Hashimoto's thyroiditis is a debilitating condition (pHT) is unknown. There was a 91.4 percent female predominance as well as 39.00 years is the median age (interquartile range, 32.50-49.75 years). Hashimoto thyroiditis, Graves' disease, and seronegative thyroiditis are all examples of thyroid disease goitres was found in 50.8 percent of confirmed cases, and Antithyroid peroxidase antibodies were found in 83.3 percent of the participants. The majority of the patients have no prior Symptoms of the leukocytosis or upper respiratory tract. Hashimoto thyroiditis was confirmed by ultrasound. Thyroid function

Hypothyroidism (35.9%), euthyroidism (28.1%), or thyrotoxicism (28.1%) at the time of initial presentation (35.9 percent ). After medical attention, the cases developed hypothyroidism (55.3%) and euthyroidism (44.7%), but none developed hyperthyroidism. The thyroid volume gland normally decreases following medical attention. Corticosteroids, levothyroxine, and nonsteroidal anti-inflammatory medications were used to treat certain cases of subacute thyroiditis. However, no treatment offered long-term pain relief. Better results were achieved with low-dose oral prednisone (25 mg/d) and intrathyroidal corticosteroid injection in subgroup study. The total thyroidectomy resulted in pain relief that lasted for years. Following medical treatment, there was evidence of Hashimoto thyroiditis and persistent thyroid pain. was used to diagnose PHT. Diagnostic pathology is the gold standard. Painful Hashimoto thyroiditis (pHT) is a relatively uncommon type of Hashimoto thyroiditis (HT) that mostly affects women. Acute HT exacerbation or autoimmune thyroiditis that is painful. When a painful thyroid is present Thyroid antibodies (antithyroperoxidase [TPO] or antithyroglobulin [Tg]) are normally elevated in the blood, along with HT goitre [4], pHT is diagnosed. Capsular stretching, which causes rapid thyroid enlargement and pain, was once thought to be the cause of pHT [5]. However, since different thyroid gland sizes have been discovered in the recorded cases[6], this theory could not be completely confirmed.

The review of study by Dana L. Mincer; Ishwarlal Jialal: Hashimoto's disease is a form of autoimmune disease that affects the body's immune system the result of an inflammatory response, fibrosis and lymphocyte invasion being common symptoms. Medical signs and TSH is elevated when thyroxine levels are moderate to low are used to make the current diagnosis. However, there is no proof that antithyroid peroxidase in the human body, it plays a part. Anti-TPO antibodies play a role in the development of thyroid autoimmune disorder (AITD). Anti-TPO antibodies have been shown to bind to thyrocytes and destroy them in vitro. However, no correlation between the severity of disease and the amount of anti-TPO antibody has been discovered in human studies in the blood. Positive the concentration of anti-TPO antibodies in the blood is, however, linked to the active stage of the process disease[7]. Additional hypotheses blamed thyroid damage on thyroid-directed antibody-containing immune complexes

The review of study by Takashi Akamizu: A symmetrical goitre, with a prominent pyramidal lobe, is common. Hashimoto's thyroiditis affects tissue that is it has a rubbery firmness and is pinkish-tan or yellowish in colour. The lobulated surface of the capsular surface and does not

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conform to the mechanisms of the peri-thyroid. Epithelial cell death is caused by a complex mechanism, cellular lymphoid invasion, as well as fibrosis can be seen under the microscope. Thyroid cells have an acidophilic staining and are slightly larger characteristic; Hurthle or Askanazy cells are tightly packed with mitochondria and are known as Hurthle or Askanazy cells. Colloid is absent or sparse, and follicular spaces diminish. Fibrosis may be completely absent or present in varying degrees from moderate to severe extreme, as Riedel's thyroiditis is a form of subacute thyroiditis. In comparison to subacute thyroiditis, Hashimoto's thyroiditis does not have granuloma or alien body giant cells. Oxyphilia and fibrosis are less common in infants, but epithelial cell hyperplasia can be noticeable[8].

Follicular cell hyperplasia, lymphoid cell accumulation Symmetrical or nodular gland enlargement can be caused by a variety of factors, including germinal centre structures and fibrosis. Hypothyroidism, as well as PTC and PTL, are more uncommon. are complications of long-term HT. Despite its rarity, the connection Thyroid lymphoma and HT have been linked investigated [9]. In this regard, FNC is important in the care of elderly patients, who are less tolerant of surgical procedures and face additional challenges than younger patients [10]. Few of the related studies were reported by Talwar et. al [11], Somani et. al [12], Dixit et. al. [13]. Kolli et. al. reported on correlation of thyroid disorders with abnormal uterine bleeding[14]. Acharya et. al. reported on "Hashimoto's Encephalopathy and early manifestation of impending thyroid storm"[15].

**Conclusion:**

From this comprehensive systemic review of autoimmune disease, our best estimate of incidence rates for hypothyroidism in female and male.

Rates were generally higher female than male. Complication occurs in a Hashimoto thyroiditis but timely treatment and management improves the outcomes of Hashimoto thyroiditis. To determine which aspect of assisted Hashimoto thyroiditis, most risk and how this risk can be minimized, further research required.

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