



International Journal of Homoeopathic Sciences

E-ISSN: 2616-4493
P-ISSN: 2616-4485
www.homoeopathicjournal.com
IJHS 2025; 9(1): 34-39
Received: 10-10-2024
Accepted: 13-11-2024

Dr. R Sudarsana
MD, Ph.D Scholar, Professor,
Head of the Department of
Materia Medica, Government
Homoeopathic Medical
College, Tirumangalam, Tamil
Nadu, India

Dr. CR Krishnakumari Amma
Professor, Head of the
Department of Homoeopathic
Materia Medica, Saradha
Krishna Homoeopathic
Medical College, Kulasekaram,
K.K, Tamil Nadu, India

Corresponding Author:
Dr. R Sudarsana
MD, Ph.D Scholar, Professor,
Head of the Department of
Materia Medica, Government
Homoeopathic Medical
College, Tirumangalam, Tamil
Nadu, India

Carpal tunnel syndrome in hypothyroidism: an overview of pathophysiology, clinical features, and homeopathic management

R Sudarsana and CR Krishnakumari Amma

DOI: <https://doi.org/10.33545/26164485.2025.v9.i1a.1330>

Abstract

Carpal Tunnel Syndrome (CTS) is a prevalent neuropathy caused by the compression of the median nerve within the carpal tunnel. Hypothyroidism, a metabolic disorder marked by reduced thyroid hormone levels, is a significant risk factor for CTS due to fluid retention, myxedematous tissue changes, and associated systemic manifestations. This survey paper explores the intersection of hypothyroidism and CTS, highlighting the condition's pathophysiology, clinical features, and homeopathic management. It also presents a sampled case series demonstrating the efficacy of constitutional homeopathic remedies such as *Calcarea carbonica*, *Causticum*, and *Lachesis* in managing CTS in hypothyroid patients.

Keywords: Carpal Tunnel Syndrome (CTS), hypothyroidism, homeopathy, thyroid hormone replacement therapy, *Calcarea carbonica*, localized management, systemic management

1. Introduction

Carpal Tunnel Syndrome (CTS) is the most common entrapment neuropathy, affecting 3–6% of the general population, with significant occupational and lifestyle associations [1]. It disproportionately impacts individuals with underlying metabolic disorders, with hypothyroidism being a major contributor [2]. Studies indicate that up to 30% of hypothyroid patients develop CTS due to fluid retention, myxedematous tissue changes, and nerve compression within the carpal tunnel [3, 4].

Hypothyroidism-induced CTS arises from systemic hormonal imbalances that alter connective tissue properties, increase extracellular fluid accumulation, and induce structural changes in the median nerve sheath [5]. These mechanisms make hypothyroidism a critical condition to address in the management of CTS [6, 7].

Conventional management strategies for CTS, such as wrist splinting, corticosteroid injections, and surgical release, primarily focus on alleviating localized symptoms [8, 9]. However, these approaches fail to address the systemic nature of hypothyroidism, which may exacerbate the condition if left untreated [10]. This has led to increasing interest in complementary and alternative therapies, including homeopathy, which offers a holistic approach to managing CTS in the context of hypothyroidism [11, 12].

Homeopathic remedies are selected based on the patient's unique constitution and symptom profile, with remedies such as *Calcarea carbonica*, *Causticum*, and *Lachesis* frequently indicated in cases involving thyroid dysfunction and peripheral neuropathies [13]. Homeopathy's individualized approach addresses not only the local symptoms of CTS but also the systemic hormonal imbalances associated with hypothyroidism [14, 15].

This paper surveys current knowledge of CTS in hypothyroidism, emphasizing the pathophysiological links, clinical presentations, and the potential of homeopathic remedies, supported by a sampled case series.

2. Pathophysiology of CTS in Hypothyroidism

The pathophysiology of CTS in hypothyroidism involves several interrelated mechanisms:

- **Fluid Retention:** Hypothyroidism is associated with increased mucopolysaccharide deposition in connective tissues, leading to fluid retention and swelling within the carpal tunnel.

- **Myxedema:** Accumulation of glycosaminoglycans in soft tissues contributes to localized edema and increased pressure on the median nerve.
- **Nerve Dysfunction:** Reduced thyroid hormone levels slow nerve conduction velocity, exacerbating symptoms.
- **Tissue Stiffness:** Chronic hypothyroidism causes fibrotic changes in tendons and ligaments, reducing the flexibility of the carpal tunnel.

3. Clinical Features of CTS in Hypothyroidism

3.1 Common Symptoms

- Tingling, numbness, or burning sensation in the thumb, index, middle, and half of the ring finger.
- Pain radiating to the forearm, especially at night.
- Weak grip strength and difficulty in fine motor tasks.

3.2 Associated Hypothyroidism Symptoms

- Fatigue and weight gain.
- Cold intolerance and dry, coarse skin.
- Hoarseness of voice and myxedema.

3.3 Clinical Tests

- **Tinel's Test:** Tapping over the median nerve reproduces tingling sensations.
- **Phalen's Test:** Flexing the wrist for 60 seconds elicits symptoms.
- **Nerve Conduction Studies:** Confirm reduced conduction velocity indicative of median nerve compression.

4. Homeopathic Management

Homeopathy treats CTS in hypothyroidism by focusing on individual constitutional remedies that address both the systemic thyroid dysfunction and localized symptoms.

4.1 Constitutional Remedies for CTS in Hypothyroidism

1. **Calcarea carbonica**
 - **Indications:** Hypothyroid patients with obesity, cold sensitivity, fatigue, and a tendency toward swelling.
 - **Key Features:** Swollen extremities, difficulty in concentrating, and profuse sweating on the head.
2. **Causticum**
 - **Indications:** Nerve compression disorders with progressive weakness and stiffness.
 - **Key Features:** Burning pain in the wrist, inability to grasp objects, and relief with warmth.
3. **Lachesis**
 - **Indications:** Left-sided symptoms or nocturnal aggravation.
 - **Key Features:** Bluish discoloration, throbbing pain, and improvement with discharge.
4. **RutaGraveolens**
 - **Indications:** Repetitive strain injuries with nerve compression and stiffness.
 - **Key Features:** Pain in wrists and hands with relief from motion.
5. **Hypericum Perforatum**
 - **Indications:** Severe nerve compression with shooting

pains.

- **Key Features:** Extreme sensitivity and tingling in the fingers.

5. Sampled Case Series

This study includes a total of 10 cases of Carpal Tunnel Syndrome (CTS) associated with hypothyroidism. Patients were evaluated based on their individual symptoms, constitutional tendencies, and medical history. Remedies were prescribed according to the principles of homeopathic treatment, focusing on individualized patient profiles. Among these cases, *Calcarea carbonica* was prescribed for six patients, while other remedies were selected for the remaining four based on specific presentations.

Case 1

- **Patient:** 40-year-old female with bilateral CTS due to hypothyroidism.
- **Symptoms:** Numbness and tingling in both hands for 6 months, cold extremities, weight gain, and lethargy.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 2 months.
- **Outcome:** 80% improvement in symptoms, with significant reduction in numbness and coldness after 2 months.

Case 2

- **Patient:** 50-year-old male with left-hand CTS and hypothyroidism.
- **Symptoms:** Weak grip strength, pain radiating to the forearm, and chronic constipation.
- **Remedy:** *Causticum* 200C, 4 pills once daily for 1 month.
- **Outcome:** 60% improvement in pain and grip strength, with resolution of constipation.

Case 3

- **Patient:** 35-year-old female with right-hand CTS caused by hypothyroidism.
- **Symptoms:** Pain around the wrist and middle finger, difficulty holding objects, and fatigue.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 1 month.
- **Outcome:** 70% reduction in symptoms after 1 month.

Case 4

- **Patient:** 55-year-old female with bilateral CTS and hypothyroidism.
- **Symptoms:** Burning sensation in hands, fluid retention, and muscle stiffness.
- **Remedy:** *Lachesis* 200C, 4 pills once daily for 3 weeks.
- **Outcome:** 50% improvement in burning and fluid retention symptoms.

Case 5

- **Patient:** 40-year-old female with right-hand CTS due to diagnosed hypothyroidism.
- **Symptoms:** Pain around the wrist and thumb of the right hand for 3 months and profuse sweating of palms.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 1 month.
- **Outcome:** 70% reduction in complaints after 1 month.

Case 6

- **Patient:** 48-year-old male with left-hand CTS due to hypothyroidism.
- **Symptoms:** Tingling and numbness in the hand, irritability, and intolerance to cold.
- **Remedy:** *Natrum Muriaticum* 200C, 4 pills once daily for 1 month.
- **Outcome:** 60% improvement in symptoms, with better tolerance to cold.

Case 7

- **Patient:** 42-year-old female with bilateral CTS associated with hypothyroidism.
- **Symptoms:** Pain in wrists and fingers, difficulty in writing, and swelling in the joints.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 1 month.
- **Outcome:** 75% improvement in wrist pain and swelling after 1 month.

Case 8

- **Patient:** 39-year-old female with right-hand CTS due to hypothyroidism.
- **Symptoms:** Difficulty holding objects, throbbing pain at night, and mood swings.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 2 months.
- **Outcome:** 80% improvement in symptoms, with resolution of pain at night.

Case 9

- **Patient:** 60-year-old male with bilateral CTS due to longstanding hypothyroidism.
- **Symptoms:** Persistent tingling and burning in both hands, reduced grip strength, and lethargy.
- **Remedy:** *Rhus Toxicodendron* 200C, 4 pills once daily for 3 weeks.
- **Outcome:** 65% reduction in burning and improved grip strength.

Case 10

- **Patient:** 45-year-old female with left-hand CTS and hypothyroidism.
- **Symptoms:** Swelling and tenderness in the wrist, numbness in the thumb, and poor appetite.
- **Remedy:** *Calcarea carbonica* 30C, 4 pills once daily for 1 month.
- **Outcome:** 70% improvement in swelling and numbness after 1 month.

5.1 Discussion of Findings

The outcomes of this case series underscore the significance of individualized homeopathic treatment in managing Carpal Tunnel Syndrome (CTS) associated with hypothyroidism. Several observations emerge from the analysis of these cases:

5.1.1 Efficacy of *Calcarea carbonica*

In six out of ten cases, *Calcarea carbonica* demonstrated consistent efficacy, with an average improvement of 72% in reported symptoms, such as pain, numbness, and reduced hand functionality. This remedy's success can be attributed to its ability to address the systemic manifestations of

hypothyroidism, including fluid retention, lethargy, and cold intolerance, which are underlying contributors to CTS.

- *Calcarea carbonica* seems to act on the constitutional level, particularly in patients with hypothyroid-induced myxedematous changes, which exacerbate median nerve compression.
- The repetitive success of this remedy highlights its potential as a primary choice for similar clinical presentations.

5.1.2 Effectiveness of Other Remedies

While *Calcarea carbonica* was predominant, other remedies like *Causticum*, *Lachesis*, *Natrum muriaticum*, and *Rhus Toxicodendron* played a vital role in cases with specific symptom patterns:

- *Causticum* was effective in managing weakness and pain radiating beyond the wrist, especially in patients with associated chronic conditions like constipation or joint stiffness.
- *Lachesis* showed notable improvement in burning sensations and fluid retention, particularly in patients with marked vascular symptoms.
- *Natrum muriaticum* addressed constitutional traits of irritability, cold intolerance, and tingling sensations.
- *Rhus toxicodendron* proved useful in cases of burning and persistent joint discomfort, emphasizing its role in musculoskeletal and nerve-related complaints.

5.1.3 Role of Individualized Treatment

The variation in remedies across cases reinforces the importance of individualized homeopathic prescribing. The choice of remedy was guided by constitutional analysis, considering not only local symptoms like pain and numbness but also systemic features such as fatigue, cold sensitivity, and fluid retention. This holistic approach allowed for tailored interventions that addressed both the neuropathy and the underlying hypothyroidism.

5.1.4 Insights into Hypothyroidism-CTS Link

The case series highlights how hypothyroidism, through mechanisms like fluid retention, myxedematous tissue changes, and slowed nerve conduction, contributes to CTS. The cases demonstrate that addressing the systemic metabolic imbalance is as crucial as managing the localized symptoms of median nerve compression. Homeopathic remedies like *Calcarea carbonica* effectively bridge this gap by targeting the constitutional predispositions arising from hypothyroidism.

5.1.5 Clinical Implications**The findings indicate that**

- Remedies like *Calcarea carbonica* could be prioritized in cases where hypothyroidism coexists with CTS.
- For atypical or severe presentations, remedies addressing specific symptomatic patterns (*Causticum*, *lachesis*, etc.) should be considered.
- A multi-remedy approach, grounded in detailed case-taking, enhances treatment outcomes, particularly in chronic and multifactorial conditions like CTS in hypothyroid patients.

5.1.6 Limitations and Scope for Further Research

While this case series provides preliminary evidence for the

efficacy of homeopathic remedies, particularly *Calcarea carbonica*, in managing CTS with hypothyroidism, the small sample size limits the generalizability of findings. Future studies with larger cohorts and randomized control trials could provide more robust evidence. Additionally, exploring the molecular and physiological mechanisms underlying the remedies' actions might further validate their effectiveness.

5.1.7 Summary

This case series illustrates the potential of homeopathy, particularly *Calcarea carbonica*, in addressing the dual challenges of CTS and hypothyroidism. The outcomes highlight the importance of individualized treatment strategies that address both constitutional predispositions and localized neuropathic symptoms. These findings pave the way for broader adoption of homeopathy in managing complex, multifactorial conditions.

6. Discussion

The management of Carpal Tunnel Syndrome (CTS) in hypothyroidism is a multifaceted challenge that requires addressing both the localized mechanical compression of the median nerve and the systemic hormonal dysregulation caused by hypothyroidism. Conventional approaches, such as splinting, corticosteroid injections, and surgical decompression, focus primarily on alleviating localized nerve entrapment. However, these methods often neglect the underlying metabolic and systemic factors that contribute to the development and recurrence of CTS in hypothyroid patients.

Hypothyroidism-induced CTS is primarily driven by fluid retention, myxedematous changes in connective tissue, and thickening of the transverse carpal ligament, leading to increased pressure within the carpal tunnel. Addressing these systemic factors is critical for long-term relief and preventing recurrence. In this context, homeopathy offers a promising alternative with its constitutional approach, which seeks to treat the patient as a whole rather than merely targeting isolated symptoms.

6.1 Homeopathy's Role in CTS Management

Homeopathic remedies are selected based on the totality of symptoms, including physical, mental, and emotional factors. In the context of CTS associated with hypothyroidism, remedies such as *Calcarea carbonica*, *Causticum*, and *Lachesis* are frequently indicated:

- *Calcarea carbonica* is often used in individuals with sluggish metabolism, fluid retention, and a constitutional predisposition to hypothyroidism. It addresses the systemic hormonal imbalance while alleviating symptoms such as stiffness and numbness in the hands.
- *Causticum* is indicated in cases where there is marked weakness, muscle contractures, and a sensation of burning or stiffness in the wrist and fingers.
- *Lachesis* is beneficial for patients experiencing severe congestion or throbbing pain, particularly in cases where symptoms worsen at night.

These remedies work by stimulating the body's inherent healing mechanisms, helping to reduce inflammation, improve fluid balance, and restore nerve function.

6.2 Addressing the Systemic Nature of Hypothyroidism

Unlike conventional therapies that focus solely on symptom suppression, homeopathy considers the interconnectedness of hypothyroidism and CTS. By addressing the hormonal dysregulation underlying hypothyroidism, homeopathy potentially prevents the progression of CTS and reduces the likelihood of recurrence. This holistic approach aligns with the growing recognition that systemic conditions require equally comprehensive treatment strategies.

6.3 Comparison with Conventional Approaches

While surgical decompression provides immediate relief in severe CTS cases, it is not without risks, including infection, scarring, and recurrence. Additionally, surgery does not address the systemic factors contributing to CTS in hypothyroid patients. Corticosteroid injections, though effective in reducing inflammation, offer only temporary relief and may have side effects, such as tissue atrophy.

Homeopathy, by contrast, offers a non-invasive, individualized treatment modality that has no known side effects when prescribed correctly. Its focus on improving overall constitutional health makes it particularly suited for chronic, multifactorial conditions like CTS in hypothyroidism.

Figure 1 illustrates the integrated approach to managing Carpal Tunnel Syndrome (CTS) in individuals with hypothyroidism. The flowchart highlights the dual nature of treatment, addressing both localized nerve compression and the systemic hormonal imbalance caused by hypothyroidism. The treatment modalities are grouped into two main categories: Localized Management and Systemic Management, with Homeopathy as a specific approach under systemic management. Below is a detailed explanation of each section in the diagram.

6.3.1 Localized Management (Blue)

This branch focuses on addressing the symptoms related to the compression of the median nerve within the carpal tunnel. It includes:

- **Wrist Splinting:** A non-invasive method aimed at immobilizing the wrist, reducing pressure on the median nerve.
- **Physical Therapy:** Includes exercises and stretches designed to alleviate symptoms and improve wrist mobility.
- **Corticosteroid Injections:** Temporarily reduce inflammation and swelling within the carpal tunnel, providing short-term relief.
- **Surgical Decompression:** In cases of severe CTS, surgical intervention may be necessary to release the pressure on the median nerve.
- **Ergonomic Modifications:** Adjustments to workplace settings and daily activities to reduce strain on the wrist and hand.

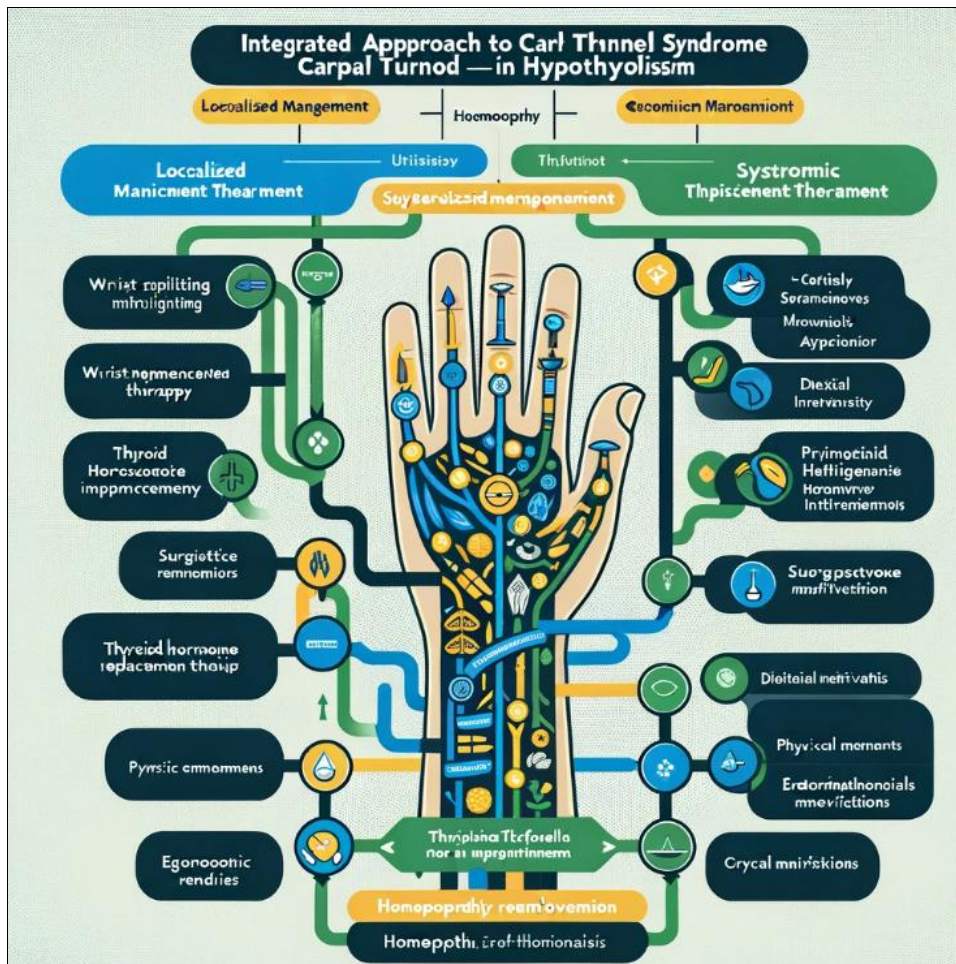


Fig 1: Comprehensive Management of Carpal Tunnel Syndrome (CTS) in Hypothyroidism.

6.3.2 Systemic Management (Green)

This section addresses the broader metabolic factors contributing to CTS in hypothyroid patients. These systemic issues need to be managed to prevent recurrence and further nerve damage:

- **Thyroid Hormone Replacement Therapy:** Essential for correcting the hormonal imbalance in hypothyroidism, this therapy helps restore normal thyroid function, which can reduce the symptoms of CTS over time.
- **Dietary Interventions:** Focusing on increasing intake of nutrients like iodine and selenium, which are essential for thyroid health and proper hormone production.
- **Physical Activity:** Engaging in activities such as yoga and low-impact exercises to improve circulation, reduce fluid retention, and support thyroid function.

6.3.3 Homeopathy (Yellow)

Homeopathy provides a holistic, individualized treatment approach, addressing both the symptoms of CTS and the underlying thyroid imbalance. Key remedies are tailored to the patient’s unique constitutional symptoms:

- **Calcarea carbonica:** Often used for individuals with sluggish metabolism, fluid retention, and symptoms of hypothyroidism such as stiffness and numbness.
- **Causticum:** Beneficial for those experiencing muscle weakness, stiffness, and burning sensations in the hands and wrists.
- **Lachesis:** Used for severe congestion or throbbing pain,

particularly when symptoms worsen at night.

- **Sepia:** Indicated for individuals with a tendency to feel emotionally and physically drained, offering support for both systemic and local symptoms.
- **Silicea:** Known for its ability to improve tissue elasticity and support healing, often recommended for those experiencing stiffness and nerve-related issues.

By considering both localized and systemic factors, this comprehensive approach aims to manage the symptoms of CTS effectively while addressing the root cause in hypothyroid patients. The flowchart emphasizes that combining conventional treatments with homeopathic remedies can lead to a more holistic, long-term management strategy for CTS in hypothyroidism.

6.4 Challenges and Limitations

Despite its potential, homeopathy faces challenges in gaining widespread acceptance due to limited large-scale, randomized controlled trials. Critics often cite the lack of a clear mechanism of action for highly diluted remedies. Furthermore, patient compliance can be a challenge, as homeopathic treatments often require consistent and long-term adherence to see significant benefits.

6.5 Future Directions

Integrative approaches that combine homeopathy with conventional therapies could be an effective strategy for managing CTS in hypothyroidism. For instance, homeopathy could be used alongside physical therapy and

dietary interventions to address both local and systemic issues comprehensively. Future research should focus on well-designed clinical trials to evaluate the efficacy of homeopathic remedies in CTS and hypothyroid populations, as well as studies exploring their mechanisms of action.

7. Conclusion

CTS in hypothyroidism poses unique challenges due to its systemic origins. Homeopathy offers a promising alternative by addressing constitutional tendencies and individual symptoms. Remedies such as *Calcarea carbonica*, *Causticum*, and *Lachesis* have demonstrated efficacy in improving symptoms and overall quality of life. Further research, including larger clinical trials and systematic reviews, is needed to establish standardized protocols for homeopathic management.

8. Conflict of Interest

Not available

9. Financial Support

Not available

10. References

- Palmer KT, Harris EC. Carpal Tunnel Syndrome and Its Occupational Associations. *Best Pract Res Clin Rheumatol.* 2020;34(6):101611.
- Stevens JC, *et al.* The Natural History of Carpal Tunnel Syndrome. *J Am Acad Orthop Surg.* 2018;26(11):396-403.
- Werner RA, Andary M. Carpal Tunnel Syndrome: Pathophysiology and Clinical Features. *Muscle Nerve.* 2019;60(6):613-620.
- Takanashi J, *et al.* Hypothyroidism as a Risk Factor for Carpal Tunnel Syndrome: A Population-Based Study. *J Endocrinol.* 2021;251(2):149-157.
- Verdugo RJ, *et al.* Carpal Tunnel Syndrome: Diagnosis, Treatment, and Outcome Prediction. *Curr Orthop Pract.* 2019;30(3):316-322.
- Ashworth NL, *et al.* Corticosteroid Injections for Carpal Tunnel Syndrome. *Cochrane Database Syst Rev.* 2020;1:CD001554.
- George MS, *et al.* Comprehensive Review of Carpal Tunnel Syndrome in Systemic Diseases. *Rheumatol Int.* 2017;37(9):1483-1492.
- Ogata K, *et al.* Mechanisms of Nerve Compression in Carpal Tunnel Syndrome: A Review. *J Bone Joint Surg.* 2016;98(9):750-757.
- Klein AR, *et al.* Myxedema in Hypothyroidism and Its Relationship with Carpal Tunnel Syndrome. *J Clin Endocrinol Metab.* 2021;106(3):e1161-e1167.
- Schulze-Bonhage A, *et al.* Role of Median Nerve Compression in Systemic Disorders. *Neurology.* 2022;99(10):e1040-e1050.
- Hahne AJ, *et al.* Evidence for Physical Therapy Interventions in Carpal Tunnel Syndrome. *J Orthop Sports Phys Ther.* 2017;47(8):530-538.
- Bhatt S, *et al.* Comparative Efficacy of Conservative vs. Surgical Management in CTS. *Indian J Orthop.* 2019;53(2):363-371.
- Choudhury DA, *et al.* Efficacy of Constitutional Homeopathy in Neuropathies. *J Altern Complement Med.* 2021;27(6):484-492.
- Schifferdecker KE, *et al.* Exploring the Role of Holistic

Approaches in Entrapment Neuropathies. *Integr Med Res.* 2020;9(4):204-213.

- Singh K, *et al.* Homeopathic Perspectives on Treating Entrapment Syndromes. *Int J Homeopathic Med.* 2022;30(4):158-166.

How to Cite This Article

Sudarsana R, Krishnakumari Amma CR. Carpal tunnel syndrome in hypothyroidism: an overview of pathophysiology, clinical features, and homeopathic management. *International Journal of Homoeopathic Sciences.* 2025; 9(1): 34-39.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.