



# A Case of Postoperative Neuropathic Pain Management after Thyroidectomy

Masae Iwasaki\*, Norihito Suzuki, Yoko Hori, Yuki Genda, Hiroaki Kishikawa and Atsuhiro Sakamoto

Department of Anaesthesiology, Nippon Medical School, Japan

## Abstract

**Rationale:** We experienced report a case of the persistent neuropathic pain and allodynia after thyroidectomy.

**Case Report:** An 84-year-old woman presented with chronic neck pain one year after thyroidectomy. Her symptoms were a hypoesthesia around the right neck scar, and a continuous and spiking pain with allodynia in the right neck and arm. NSAIDs and duloxetine was not effective for these symptoms. The combination with of nortriptyline 10 mg per day and pregabalin 25 mg per day improved the neuropathic pain and allodynia gradually after two weeks of intake. With nortriptyline 25 mg and pregabalin 100 mg, the patient only experienced discomfort around the neck was remained at two years after surgery.

**Discussion:** The mediation Treatment with nortriptyline and pregabalin improved the neuropathic pain and allodynia significantly even one year after the surgery, without causing any severe side effects.

**Keywords:** Neuropathic pain; Nortriptyline; Pregabalin; Thyroidectomy

## Introduction

A number of patients could have may experience chronic neuropathic pain due to surgical procedures, cancer microinvasion, and chemotherapy at in the postoperative phase. However, chronic neuropathic pain is often difficult to treat, and not many patients receive effective medication. It is considered that the pathology of neuropathic pain is often complicated; thus, there are which results in a lack of established evidence about the effects of pharmacotherapy effects in such patients. We report a case of the persistent neuropathic pain and allodynia after thyroidectomy, who improved symptoms that showed improvement after treatment with nortriptyline and pregabalin.

## Case Report

An 84-year-old woman presented with right neck pain, which was diagnosed as a low-grade thyroid cancer. The patient underwent thyroidectomy and lymph node dissection was undertaken. The tumor was 34 mm × 26 mm in the right lobe of the thyroid (Figure 1). Pathological assessments showed positive findings for lymph node invasion was pathological positive in the right deep lymph nodes, but no nerve invasion was observed during the surgery. Her pain lasted persisted after the surgery despite the medication with NSAIDs. She presented with a worsened and wider neck pain in her right neck, one year after the surgery. She was also diagnosed as a with a nephrosis syndrome under observation, and received brotizolam edicated for insomnia with brotizolam. She presented with several symptoms; a hypoesthesia around the scar, a continuous and spiking pain with allodynia in her right neck and arm, and a difficulty in raising her right arm due to pain (Figure 2). The Numeral Rating Scale (NRS) score was 8-10/10 with NSAIDs mediation (Figure 3). These symptoms were diagnosed as chronic neuropathic pain with allodynia. The medication the patient started with receiving duloxetine 20 mg per day at first. Diarrhea and dizziness was presented after two days intake, and were considered adverse effects of duloxetine. The medication was changed to nortriptyline 10 mg per day for two weeks. However, the NRS score was worsened to 10/10, and the numbness spread to her right hand. Pregabalin 25 mg per day was added for these symptoms. After two weeks of medication treatment with nortriptyline 10 mg and pregabalin 25 mg per day, the NRS score down reduced to 8/10 without severe adverse effects. The dose of pregabalin dose was increased up to 100 mg per day over two months with no side effects. With nortriptyline 10 mg and pregabalin 100 mg per day, the NRS score improved to 5/10 with less spiking pain. The

## OPEN ACCESS

### \*Correspondence:

Masae Iwasaki, Department of Anaesthesiology, Nippon Medical School, 1-15, Sendagi, Bunkyo Tokyo, 113-8603, Japan, Tel: 81(0)3 38222131; Fax: 81(0)3 38222131; E-mail: maseae-a@nms.ac.jp

Received Date: 19 Jan 2018

Accepted Date: 16 Apr 2018

Published Date: 23 Apr 2018

### Citation:

Iwasaki M, Suzuki N, Hori Y, Genda Y, Kishikawa H, Sakamoto A. A Case of Postoperative Neuropathic Pain Management after Thyroidectomy. *Annals Pain Med.* 2018; 1(1): 1004.

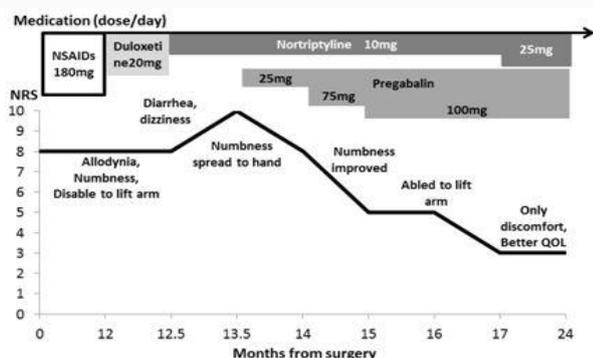
**Copyright** © 2018 Masae Iwasaki. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.



**Figure 1:** Preoperative neck CT image. The low-density tumour (34 mm × 26 mm) was pointed out identified in the right lobe of thyroid. The trachea was shifted slightly to the left by the tumour.



**Figure 2:** The neck scar on the first visit. The neck scar was located from the middle neck to the edge of the right sternocleidomastoid muscle. The patient presented with hypoesthesia around the scar, a continuous and spiking pain with allodynia in her right neck and arm, and a difficulty in raising her right arm due to pain.



**Figure 3:** The medication and symptom course. The schema shows the medication and symptom course of the patient. The first medication with duloxetine caused diarrhea and dizziness. Nortriptyline 10 mg per day was chosen as the second medication. The combination with pregabalin and nortriptyline improved neuropathic pain and allodynia gradually after two weeks of intake. With nortriptyline 10 mg and pregabalin 100 mg, only discomfort around the neck was remained.

numbness became better improved and she was able to raise her right arm. After the dose of nortriptyline was increased to 25 mg per day for three months, she had no spiking pain, less continuous pain (NRS 3/10), and could raise her right arm. The only remaining symptom was discomfort in her right neck with good QOL.

**Discussion**

We experienced report a case of the persistent neuropathic pain

and allodynia after thyroidectomy. The Medication with nortriptyline and pregabalin improved the neuropathic pain and allodynia significantly even one year later after the surgery. This patient presented with neuropathic pain that was possibly caused by surgical procedure and cancer invasion, and allodynia around the neck and right arm. The scar on her neck and these symptoms indicated that the damage of to the transverse cervical nerve and supraclavicular nerve could be the main cause. This hypothesis led to the medication for neuropathic pain, which improved her symptoms.

According to the pain management guideline in Japan, Serotonin-Noradrenaline Reuptake Inhibitors (SNRI), Tricyclic Antidepressants (TCA), and a channel ligands are listed as first-choice medications for neuropathic pain [1]. About for postoperative pain, duloxetine could has been shown to reduce subacute pain after total hip arthroplasty and total knee arthroplasty [2,3]. There were some clinical studies about the effects of nortriptyline effects on chronic pain. Three studies showed that nortriptyline could reduce chronic pain compared with placebo [4-6]. Five studies with the maximum tolerated dose showed that nortriptyline had comparable effect with chlorimipramine [6], gabapentin [7], and amitriptyline [8]. About With regard to pregabalin’s effects on chronic postoperative pain, persistent intake of pregabalin for 2 weeks to 1 year after surgery improved VAS and ODI faster than gabapentin [9,10] and fentanyl [11]. The chronic postoperative pain is often difficult to be noticed, and challenging for to manage with effective pharmacotherapy. This case indicated that the combined medication from based on published evidence could improve the chronic pain even after long over a long postoperative period.

**Conclusions**

This case indicated that chronic postoperative neuropathic pain could be improved by combined medication despite even over along postoperative period.

**References**

1. Japanese society of pain clinicians. Guidelines for pharmacologic management of neuropathic pain, 2<sup>nd</sup> edn. Tokyo: Shinkyokoeki Ltd. 2016.
2. Blikman T, Rienstra W, van Raaij TM, ten Hagen AJ, Dijkstra B, Zijlstra WP, et al. Duloxetine in OsteoArthritis (DOA) study: study protocol of a pragmatic open-label randomised controlled trial assessing the effect of preoperative pain treatment on postoperative outcome after total hip or knee arthroplasty. *BMJ Open*. 2015;6(3):e010343.
3. YaDeau JT, Brummett CM, Mayman DJ, Lin Y, Goytizolo EA, Padgett DE, et al. Duloxetine and Subacute Pain after Knee Arthroplasty when Added to a Multimodal Analgesic Regimen: A Randomized, Placebo-controlled, Triple-blinded Trial. *Anesthesiology*. 2016;125(3):561-72.
4. Hammack JE, Michalak JC, Loprinzi CL, Sloan JA, Novotny PJ, Soori GS, et al. Phase III evaluation of nortriptyline for alleviation of symptoms of cis-platinum-induced peripheral neuropathy. *Pain*. 2002;98(1-2):195-203.
5. Khoromi S, Cui L, Nackers L, Max MB. Morphine, Nortriptyline and their Combination vs. Placebo in Patients with Chronic Lumbar Root pain. *Pain*. 2007;130(1-2):66-75.
6. Panerai AE, Monza G, Movilia P, Bianchi M, Francucci BM, Tiengo M. A randomized, within-patient, cross-over, placebo-controlled trial on the efficacy and tolerability of the tricyclic antidepressants chlorimipramine and nortriptyline in central pain. *Acta Neurol Scand*. 1990;82(1):34-8.
7. Chandra K, Shafiq N, Pandhi P, Gupta S, Malhotra S. Gabapentin versus nortriptyline in post-herpetic neuralgia patients: a randomized, double-blind clinical trial--the GONIP Trial. *Int J Clin Pharmacol Ther*. 2006;44(8):358-63.

8. Watson CP, Vernich L, Chipman M, Reed K. Nortriptyline versus amitriptyline in postherpetic neuralgia: a randomized trial. *Neurology*. 1998;51(4):1166-71.
9. Dolgun H, Turkoglu E, Kertmen H, Gurer B, Yilmaz ER, Comoglu SS, et al. Gabapentin versus pregabalin in relieving early post-surgical neuropathic pain in patients after lumbar disc herniation surgery: a prospective clinical trial. *Neurol Res*. 2014;36(12):1080-5.
10. Athanasakis K, Petrakis I, Karampli E, Vitsou E, Lyras L, Kyriopoulos J. Pregabalin versus gabapentin in the management of peripheral neuropathic pain associated with post-herpetic neuralgia and diabetic neuropathy: a cost effectiveness analysis for the Greek healthcare setting. *BMC Neurol*. 2013;13:56.
11. Raptis E, Vadalouca A, Stavropoulou E, Argyra E, Melemeni A, Siafaka I. Pregabalin vs. opioids for the treatment of neuropathic cancer pain: a prospective, head-to-head, randomized, open-label study. *Pain Pract*. 2014;14(1):32-42.