



## The Management of Post-thyroidectomy Pain by Preoperative Superficial Cervical Plexus Blockage Under Ultrasound Guidance

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Postoperative pain is one of the most important morbidities in the recovery process after thyroidectomy. Since pain is a common and unpleasant complication after thyroidectomy, therefore postoperative pain management is a moral and professional duty of the therapist especially for patients and anaesthesiologists. Postoperative pain control has a proven role in improving the prognosis of surgery and preventing unwanted complications such as cardiovascular problems, blood clotting, elevated blood sugar and coagulation disorders [1,2]. In many cases after thyroidectomy, patients complain of chronic pain in the lateral areas of the neck on the same side of the surgery and at site of skin incision, requiring medical interventions [3]. According to previous studies, blocking of superficial cervical plexus can reduce post-thyroidectomy pain [2,3]. Kalmovich, *et al.* performed a study about post-thyroidectomy pain. They studied 53 patients and showed that postoperative pain intensity is moderate to severe in the postoperative period [4]. Andrieu, *et al.* studied the analgesic effect of bilateral superficial cervical plexus block after thyroidectomy on 87 patients and reported that the use of this block reduced pain after surgery and reduced the use of analgesic for control of postoperative pain [5]. A study published by Karthikeyan, *et al.* examined the analgesic effect of superficial cervical block by adding clonidine to the anaesthetic after thyroidectomy. They reported that in addition to reducing pain during and after surgery, the amount of analgesics use during and after surgery also decreased [6]. Wattier, *et al.* identified that failure to control acute pain after thyroidectomy can lead to postoperative chronic pain if left untreated [3]. They showed that of 304 patients who underwent thyroidectomy, 12 (9%) developed

chronic neuropathic pain during 3 to 6 months after surgery. Moreover, they showed that the patients who underwent superficial cervical nerve plexus were less likely to experience chronic postoperative pain after thyroidectomy [3,7-9]. We performed a prospective double-blind clinical trial and evaluated the effect of superficial cervical plexus blockage with ultrasound guidance on pain after thyroidectomy. The treatment group underwent superficial cervical plexus with sonography guidance bilaterally by injection of 10 ml of ropivacaine 0.2% (n = 50) and control group by injection of 10 ml normal saline (n = 50). After performing the superficial cervical plexus blockage, patients in both groups underwent general anaesthesia and thyroidectomy. After the operation, the severity of pain, the incidence of nausea and vomiting and the amount of analgesic administration up to 24 hours were recorded. We found that the severity of pain in the treatment group at the time of discharge from recovery, 2, 6, 12, 24 hours after surgery was 1.36, 1.76, 1.46, 1.24 and 0.44 based on numerical ratio scale (NRS), and in the control group were 3.12, 3.30, 3.82, 2.96 and 2.02, respectively (p < 0.001). The incidence of postoperative nausea and vomiting was lower in the treatment group compared to control group (p < 0.001). The need for analgesic during the 24 hours after surgery was lower in the treatment group compared to control group (p < 0.001). In conclusion, superficial cervical plexus block under ultrasound guidance is an effective, safe and accessible method that reduce acute and chronic postoperative pain after thyroidectomy and reduce the need to use analgesics in the postoperative period and decrease the unpleasant side effects during and after thyroidectomy.

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