

## **A Safety-Based Comparison of Pure LigaSure Use and LigaSure-Tie Technique in Total Thyroidectomy**

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### **Abstract**

*Background and Aim:* Sutureless total thyroidectomy by using vessel sealing devices has been shown to be safe in some recent clinical studies. However, some surgeons are still concerned about the use of these energy devices in the vicinity of the recurrent laryngeal nerve and parathyroid glands. The objective of this study was to investigate the effects of the use of pure LigaSure on postoperative complications and to discuss the pertinent literature.

*Methods:* A total of 456 patients having undergone a total thyroidectomy operation between June 2009 and March 2011 were included in the study. Data were prospectively collected and retrospectively evaluated. Patients were separated into 2 groups. Group L comprised of 182 patients where only LigaSure was used, and group LT consisted of 274 patients where ligation was used in the vicinity of the recurrent laryngeal nerve and parathyroid glands, and LigaSure was used in all other parts of the surgery. Patient's blood calcium values were checked preoperatively and at postoperative 24, 48, and 72 hours. Groups were assessed in terms of demographic properties, thyroid pathology, duration of operation, and postoperative complications.

*Results:* Groups were similar in respect of demographic properties, operation duration, thyroid gland pathology. No mortality rate was recorded. Laboratory hypocalcemia rate was higher in group L ( $P < 0.003$ ), but no significant difference was identified between groups in terms of symptomatic hypocalcemia. No permanent hypocalcemia or recurrent laryngeal nerve injury developed in any of the patients in the two groups.

*Conclusions:* Pure LigaSure for total thyroidectomy may increase laboratory hypocalcemia rate, but not symptomatic hypocalcemia. Hemorrhage related complications were similar and low in the two groups. Ligations in the places close to delicate anatomic structures did not cause longer operative times and may be a safer option in total thyroidectomy.

**Key words:** hypocalcemia, LigaSure, ligation, thermal injury, recurrent laryngeal nerve, thyroidectomy

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