Incidence and Prediction of Hypoparathyroidism after Total Thyroidectomy

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INTRODUCTION: Hypocalcemia caused by hypoparathyroidism is the most common postoperative complication after total thyroidectomy. The aim of this study is to determine the incidence of hypoparathyroidism and the time course of recovery from hypoparathyroidism.

MATERIALS and METHODS: 105 patients who underwent total thyroidectomy with central compartment dissection from Jan 2011 to June 2012 in Jeju national university hospital were reviewed retrospectively. Serum PTH and calcium levels tested before and after surgery were analyzed.

RESULTS: Transient hypoparathyroidism was found in fifty-one patients (48.6%) at second postoperative days. But most of them recovered with the course of time (15.2% in 8 weeks, 6.7% in 5 months, 2.9% in 9 months after surgery), and persistent hypoparathyroidism was remained in only one patient at one years after surgery. Preoperative PTH level showed a significant positive correlation with the PTH levels at POD#2 (Pearson r=0.277; p<0.004), but it was not a good predictor for the postoperative hypoparathyroidism in ROC curve analysis (AUC=0.507).

CONCLUSIONS: About half of patients undergoing total thyroidectomy developed hypoparathyroidism, but most of them recovered within several months. The preoperative PTH was correlated with postoperative hypoparathyroidism significantly, but it was not appropriate to predict postoperative hypoparathyroidism. (J Med Life Sci 2014:10(3):229–232)

Key Words: Hypoparathyroidism, Total Thyroidectomy, Parathyroid Hormone, Hypocalcemia

Introduction

Hypocalcemia is the most common postoperative complication after total thyroidectomy⁴. Surgical hypoparathyroidism can occur after thyroid, parathyroid or radical neck surgery for head and neck cancer. It may be transient, with recovery in days, weeks or months; permanent. Transient hypoparathyroidism occurs up to 20 percent of patients after surgery for thyroid cancer and permanent hypoparathyroidism occurs in 0.8 to 3.0 percent of patients after total thyroidectomy⁵. The aim of this study is to determine the incidence of hypoparathyroidism and the time course to resolution of hypoparathyroidism after total thyroidectomy.

Materials and Methods

The subject of the present study included 105 patients who underwent total thyroidectomy with central neck node dissection by a single surgeon in Jeju national university hospital between Jan 2011 and June 2012.

We retrospectively reviewed the medical records of these 105 patients' operation records, laboratory results of PTH, serum and ionized calcium levels before and after 2nd day, 2nd, 5th, 9th and 12th months of surgery.

