

Parathyroid Function Saving Total Thyroidectomy Using Autofluorescence and Quantified Indocyanine Green Angiography

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Abstract

Introduction: Postoperative hypoparathyroidism is one of the most common complications after total thyroidectomy. In recent years, several techniques have been employed, trying to save parathyroid

glands during thyroid surgery, such as autofluorescence and indocyanine green (ICG) angiography. In this study, we present a systematic approach to a parathyroid function saving total thyroidectomy using autofluorescence and quantified ICG angiography.

Materials and Methods: Step-by-step video demonstration of a total thyroidectomy for thyroid cancer utilizing parathyroid autofluorescence and ICG angiography.

Results: A systematic step-wise approach to a total thyroidectomy using autofluorescence and quantified ICG angiography is demonstrated. The set moments of deployment, settings of the camera, and a standardized workflow model for parathyroid autofluorescence and ICG angiography are noted.

Conclusion: A systematic approach to parathyroid autofluorescence and quantified ICG angiography during total thyroidectomy may eventually guide the surgeon in early identification of the parathyroid glands and the need for parathyroid autotransplantation, thereby predicting and preventing postoperative hypoparathyroidism.

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Keywords: parathyroid, ICG angiography, hypoparathyroidism, autofluorescence, total thyroidectomy

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