

Sentinel lymph node biopsy in medullary thyroid carcinoma - a pilot study -

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INTRODUCTION

Serum calcitonin levels (sCT) in medullary thyroid carcinoma (MTC) correlate with the tumor size and disease progression [1]. Lymph node (LN) metastases can be verified even in sCT lower than 100pg/ml [2]. The extent of LN dissection has not yet been standardized [3,4].

The aim of this pilot study was to show our experience with sentinel lymph node (SLN) biopsy of jugulo-carotid chain (JCC) in selection of patients with MTC for modified radical neck dissection (MRND).

MATERIALS AND METHODS

Following protocols of our institution, all patients with confirmed thyroid carcinoma on intraoperative frozen section analysis undergo total thyroidectomy, central neck dissection and SLN biopsy of JCC. SLN biopsy is performed after peritumoral injection of 1%-methylene blue dye (0.2-0.5ml), and frozen section examination follows, in order to make decision on further MRND. For this study, we have selected 13 patients treated surgically from year 2007 to 2015 due to suspect MTC with increase of sCT, clinically and ultrasonically verified thyroid tumor and "clear" regional lymph nodes. Inclusion criteria for this pilot study were sCT lower than 1000pg/ml and subcentimeter tumor size. All patients had uni- or bilateral SLN biopsy of supraomohyoid region (II-III). Besides these blue stained SLNs, we have removed surrounding LNs of II and III region in order to obtain more precise definite pathological evaluation of LNs.

RESULTS

In dissected central LNs, metastases were not verified. All SLNs were identified as benign, both on frozen section and definite pathological analysis, thus there were no false negative results. Besides SLNs, all LNs extirpated from II and III region were benign on definite pathology reports.

On postoperative check-ups, all sCT were in the normal range, patients suffered no complications of thyroid surgery and none have disease relapses. The SLN biopsy method's accuracy is 100%.

CONCLUSION

This pilot study is the first reported experience with SLN biopsy of JCC in MTC using methylene blue dye. SLN biopsy can be precisely used for intraoperative assessment of lateral neck compartment. It enables adequate surgery for patients with subcentimeter MTC and sCT under 1000pg/ml, avoiding unnecessary prophylactic MRND.



Figure: Blue-stained sentinel lymph node identified in the right jugulo-carotid region

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Thyroid cancer