Treatment Controversy of Incidental Micro-Medullary Carcinoma

Capit. James M. Swartz, DO*, Maj. Thomas P. Newlin IV, MD**
*Wilford Hall Medical Center, Lackland AFB, TX 78236
**Cari R. Darnall Army Medical Center, Fort Hood, TX 76544
HEAD AND NECK SURGERY - EBM Level 4 – Case Presentation

OBJECTIVES

1. Investigate the controversial management dilemma of microscopic foci of Medullary Thyroid carcinoma found incidentally.
2. Describe appropriate treatment strategies for this rare scenario after critically reviewing the literature.

CASE PRESENTATION

• Incidence of sporadic micromedullary thyroid cancer is 0.3-0.7% in clinical series
• Classic protocol calls for reoperation when occult micro-MTC is found in one
• Reoperation indicated (completion thyroidectomy and central neck dissection)
• Postoperative basal calcitonin assay associated with a pentagastrin stimulation test normal

RESULTS

• The thyroid was sent for permanent section and evaluated microscopically with an H&E stain.
• Final microscopic evaluation revealed:
• multiple adenomatous nodules
• 2mm focus of papillary thyroid carcinoma
• 2mm focus of medullary thyroid carcinoma.
• The patient underwent no further surgical treatment.
• She has undergone chromosomal analysis, evaluation for possible multiple endocrine neoplasia, and serial calcitonin measurements.
• She is currently disease free.

DISCUSSION

• Medullary thyroid carcinoma (MTC) is a well-described form of thyroid malignancy that typically mandates aggressive surgical treatment including total thyroidectomy and central neck dissection; however, there is a paucity of information in the literature concerning sporadic, microscopic foci of MTC.
• Incidence of sporadic micromedulary thyroid cancer is 0.3-0.7% in clinical series with nodular thyroid lesions and 0.15% autopsy incidence2.
• Postoperative basal calcitonin assay associated with a pentagastrin stimulation test should be performed on occult micro-MTC to determine next step of action.
• Reoperation indicated (completion thyroidectomy and central neck dissection) with abnormal calcitonin or pentagastrin stimulation test results indicating residual medullary thyroid cancer.
• Systematic preoperative calcitonin assay may allow the detection of occult MTC before a thyroidectomy is performed when planned for other pathology (positive result in 0.79% of cases)
• Classic protocol calls for reoperation when occult micro-MTC is found in one lobe, however risks are acceptable only if significant benefit can be obtained.
• The possibility of detecting small tumor residue with calcitonin assay and pentagastin stimulation test allows avoidance of routine reoperation.
• With micro-MTCs - response to pentagastrin stimulation is high (~100-200ng/L), rarely response <100ng/L, but additional high basal calcitonin level noted.
• Risk of lymph node metastasis of micro-MTC is small (reported 5%), Pix et al notes the risk seems directly related to the size of the carcinoma.
• Bereset al reported a much higher incidence of metastasis - 10% of the collected 80 cases of sporadic micro-MTC presented with lymph node metastasis, 6% with distant visceral metastasis.
• Henry et al reported on 11 cases of occult micro-MTC - all had total thyroidectomy with central neck dissection and no lymph node metastasis found.

CONCLUSIONS

• Medullary thyroid carcinoma is a rare and aggressive form of thyroid malignancy that classically requires aggressive surgical management.
• Reserve reoperation for micro-MTCs >5mm, when pathologic exam or genetic screening suggests familial form and hence bilateral disease (multifocal C-cell hyperplasia), or abnormal postoperative calcitonin and pentagastin stimulation assays.
• Micromotic foci of medullary thyroid carcinoma found incidentally presents an interesting and controversial management dilemma.

REFERENCES