Draft only-not final!

Surgery for Medullary Thyroid Cancer

The Israeli Forum of Endocrine Surgery Guidelines

Recommendation 1-General:
Patients with MTC should be evaluated and surgically treated at centers with high volume and experience in the treatment of thyroid cancer (over 30 thyroidectomies a year).

Recommendation 2-Genetic testing:
All patients with sporadic MTC should undergo genetic counseling and testing.
Patients with MEN2A should be evaluated for *RET* mutation (exons 8, 10, 11, 13-16).
Patients with MEN2B should be evaluated for *RET* mutation codon M918T (exon 16), if negative exon 15, if negative entire *RET* region.

Recommendation 3-*RET* mutation risk stratification:
Patients should be stratified by their *RET* mutation
M918T – highest risk
C634 – high risk
All others – moderate risk

Recommendation 4-FNAB:
Thyroid nodules over 1cm in size should be evaluated by FNAB.
If cytology is inconclusive or suggestive of MTC Ctn levels in the aspirate can assist in diagnosis.

Recommendation 5-Evaluation:
Patients with proven MTC should be evaluated by history and physical examination, serum Ctn and CEA, genetic testing for *RET* germline mutation, if hereditary - exclude Pheochromocytoma and hyperparathyroidism, neck ultrasound, and CT (neck, chest, liver) if extended disease or distant metastases symptoms.

Recommendation 6-Surgical management:
Surgery for MTC should include total thyroidectomy and bilateral central lymph node dissection.
Compartmental lateral lymph node dissection should be added if lateral lymph node involvement is demonstrated.
Prophylactic bilateral lateral lymph node dissection should be considered in patients with Ctn>200 pg/ml.
Less aggressive surgery (total thyroidectomy) is warranted In the presence of extensive or metastatic disease.
Completion thyroidectomy following lobectomy with MTC is indicated for patients with RET mutation, elevated postoperative Ctn, or imaging of residual disease.
Completion central neck dissection should be performed if less than 5 lymph nodes were removed or if preoperative Ctn was less than 1000 pg/ml.

Recommendation 7-Immunohistochemistry:
MTC specimens should be stained for Ctn, chromogranin, and CEA.

Recommendation 8-Resected parathyroid glands:
Inadvertently resected parathyroid glands should be autotransplanted.
In patients with *RET* mutation that is not associated with HPTH transplantation should be performed in the SCM muscle.
In patients with *RET* mutation that is associated with HPTH transplantation should be performed in the arm.

Recommendation 9-Prophylactic thyroidectomy:
Prophylactic thyroidectomy for *RET* mutation carriers should be performed at high volume centers and by highly experienced surgeons only.
Patients with highest risk *RET* mutation (M918T) should offered surgery during the first year of life.
Patients with high-risk *RET* mutation (C634) should offered surgery by age 5y or
if Ctn is above 40 pg/ml.
Patients with moderate risk *RET* mutation should be evaluated by neck ultrasound
and Ctn levels at 5y and offered surgery when Ctn levels are elevated.

Recommendation 10-Pheochromocytoma and MTC:
Pheochromocytoma should be excluded for all patients with MTC prior to surgery.
Remove pheochromocytoma prior to surgery for MTC.
Screening for pheochromocytoma should be performed at 11y for patients with high-highest risk *RET* mutations (M918T, C634) and at 16y for all other *RET* mutations.

Recommendation 11-Hyperparathyroidism and MTC:
Patients with MTC and hyperparathyroidism (HPTH) should have their parathyroid glands evaluated during surgery for MTC.
Only enlarged parathyroid glands should be removed during surgery.
Screening for HPTH should be performed at 11y for patients with high-highest risk *RET* mutations (M918T, C634) and at 16y for all other *RET* mutations.

Recommendation 12-Postoperative follow-up:
There is no indication for TSH suppression following surgery for MTC.
Ctn and CEA should be measured at 3m, 6m, 12m, and then annually.

Ctn < 150 – Neck US and follow up
Ctn, >150 – Neck US / chest CT/ MRI / liver/ bone
Detectable Ctn and CEA – measure every 6m to determine doubling time (prognostic)

Recommendation 13-Recurrent and metastatic disease:
Compartmental dissection should be performed for recurrent disease.
Limited resection of recurrent disease is indicated only for compartments that were previously dissected.

Recommendation 14:
Distant metastatic disease should be evaluated by multidisciplinary teams at high volume centers.
Management of metastatic disease may include EBRT and TKIs.
Resection of distant metastases should be performed when feasible.