ENDORAMA
“SECONDARY THYROID MASSES”
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• Learning objectives:
  – Epidemiology and etiology of secondary thyroid masses
  – Clinical features and diagnosis of secondary thyroid masses; pitfalls of FNA
  – Role of surgery in secondary thyroid masses
HISTORY

• 77 y/o M who presented to Endo surgery clinic for evaluation of bilateral thyroid nodules

• **Med & Surg Hx**
  - DM, Afib (on apixaban), HTN, CHF (EF 25%)
  - Left renal cell carcinoma s/p L nephrectomy 2005 and then
  - R nephrectomy in 2010 (for suspicious renal cyst).
  - HD and placed on Renal transplant list
  - Noted to have multiple bilateral thyroid nodule in July 2013 (on screening CT for transplant. This was followed with Thyroid US.)
Right dominant nodule: 2.3 x 2.4 x 2.2 cm

July 2013
July 2013
Left dominant nodule: 1.2x1.3x1.2 cm
Asymptomatic:
- no neck pain, pressure, Normal voice/phonation
- No toxic symptoms.

- No hx of exposure to radiation
- No family history of thyroid cancer/problems
- TSH 0.12, Free T4: 1.04, T3: 95
**JULY 2013 – APRIL 2016**

- FNA of dominant rt nodules on 7/29/13 → benign colloid nodule

- Thyroid US Dec 2014 → No interval change

- Kidney transplant in Jan 2015.

- F/U Thyroid April 2016:
  - ↑ size of dominant left lobe nodule
  - new vascular polypoid component
  - no other interval change
July 2013
Left nodule: 1.2x1.3x1.2cm

April 2016
Left nodule: 3.0x2.3x2.1cm
APRIL 2016 – DEC 2017

• Repeat US Sept 2016:
  - ↓ size of left nodule itself
  - ↑ size of vascular polypoid mass (1.1 x 1 x 1.1cm from 0.75 x 0.75 x 0.8cm in April 2016)

• FNA of dominant left nodules on Oct 2016 & repeated Dec 2016 ➔ inconclusive/non diagnostic

• Thyroid US June 2017
  - Stable size of left thyroid nodule.
  - ↑ size of the solid component but less vascular
  - Final read: Favors Benign
• Pathologic fracture of right scapula July 2017
• PET CT: mets to right scapular and left lung.
• Partial right scapulectomy Sep 2017.
Thyroid US Dec 2017
- Stable size of left thyroid nodule.
- ↑size of solid component but less vascular
- Final read: Favors Benign
Sept 2019 Thyr US:
- ↑ size of solid component 4.5x3.5x2.8cm.
Previously:
- 2.4x2.2x1.8cm Dec 2017
- 1.3 x 1.8 x 1.7cm Jun 2017
- 1 x 1 x 1.1 cm Sept 2016
Next step?
• Seen in Endo Surgery clinic on 10/24/19

• Physical Exam:
  – Trachea normal, normal range of motion,
  – Phonation normal.
  – Neck supple. No neck tenderness present.
  – No tracheal deviation, no edema
  – Normal range of motion present.
  – No thyroid mass palpable and no thyromegaly

Consented for a total thyroidectomy
• OR for total thyroidectomy on 11/8/19

• Large left thyroid mass infiltrating and completing encasing the left RLN

• Left RLN subsequently freed from tumor but lost signal.

• Completed a left thyroidectomy and FS of specimen returned as very suspicious for PTC

• Total thyroidectomy was aborted; Left RLN injury
FINAL PATHOLOGIC DIAGNOSIS
Left thyroid lobe; lobectomy (22.2 g):
- Metastatic renal cell carcinoma (4 cm, left mid-lower pole),
- Margins focally involved by carcinoma.
SECONDARY THYROID MASSES

Epidemiology

- Incidence of 0.3-3% of all thyroid malignancy, clinically \(^1\),\(^2\)
  - *upto 24% in autopsy series \(^3\)

- 7\(^{\text{th}}\) – 8\(^{\text{th}}\) decade, M:F 1:4-5.

- Large majority are metachronous; as far as 21 years post diagnosis of primary \(^4\),\(^9\)

- Time to event of Sec Thyroid mass
  - More aggressive cancer (e.g. lungs ca) have shorter interval.
  - Less aggressive cancers (e.g. RCC and Breast) have longer interval \(^3\),\(^4\)

- RCC is the commonest origin, but lung cancer is the commonest in autopsy series \(^3\),\(^4\),\(^5\)
SECONDARY THYROID MASSES

Clinical presentation & diagnosis
- 78% present with palpable neck mass, other incidental on imaging
- 35-80% will present with metastasis elsewhere.
- Abnormal LFT are relatively uncommon; late in disease if present.
- Late stage disease present with symptoms of advanced thyroid cancer; dysphonia, dysphagia etc.
- To increase the likelihood of a preoperative diagnosis, core or open biopsy have been considered.
  *Pitfalls
    - FNA: bloody aspirate
    - CNB: Traumatic

Treatment & Survival
- Surgery and/or extent of surgery depends on the nature of primary tumor and surgical risks.
- Resection increases OS and CSS especially when RCC is tumor of origin
- Median survival 6-14 months without resection vs 27 – 40.8 months after resection
- Local resection; thyroid lobectomy vs total thyroidectomy.
- Margin is important; ↑recurrence after TL vs TT (5 vs 13%, p < 0.005)
- Secondary thyroid mets itself is not a poor prognostic marker
- No role for radioactive/radiation
Local treatments for metastases of renal cell carcinoma: a systematic review

Saeed Dabestani, MD • Lorenzo Marconi, MD • Fabian Hofmann, MD • Fiona Stewart, MSc • Thomas B L Lam, MD • Steven E Canfield, MD • Michael Staehler, MD • Prof Thomas Powles, MD • Prof Boje Ljungberg, Md •

Dr Axel Bex, MD • DOI: https://doi.org/10.1016/S1470-2045(14)70338-9

Published: November, 2014

Median survival 14 months without resection vs 40.8 months after resection
Recommendation

- Local resection of all RCC mets when medically feasible *except bone and brain
- Radiation therapy for bone and brain
4. Zhang, Liyang ; Liu, Yuewu ; Xiaoyi ; et al. Metastases to the thyroid gland. Medicine: September 2017 - Volume 96 - Issue 36 - p e7927