Transoral Neck Surgery

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No disclosures

Outline

- Otolaryngology – Head & Neck Surgery
- Transoral Neck Surgery (TONS)
  - What?
  - Why?
  - How?
- Challenges with TONS

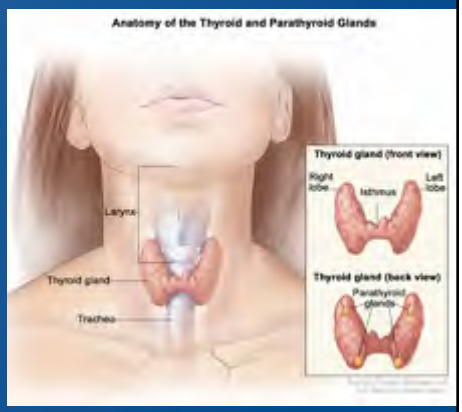
Otolaryngology – Head & Neck Surgery

- "Ear, Nose,
- Pediatric Ot
- Neurotology
- Rhinology/A ergy & Immunology
- Head & Nec
  - Endocrine

- Facial Plastics & Reconstructive Surgery
- Laryngology/Professional Voice/ Airway Surgery

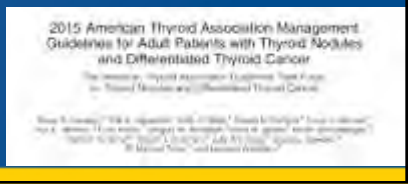
Endocrine Surgery

- Thyroid:
  - Helps regulate metabolism
  - Pathology range from benign to malignant
    - Benign nodule
    - Goiter
    - Papillary Thyroid Cancer
    - Medullary Thyroid Cancer
    - Anaplastic Thyroid Cancer
- Parathyroid
  - Regulate Calcium
  - Pathology range from benign to malignant
    - Adenoma
    - Carcinoma



Thyroidectomy- Why?

- Nodule:
  - Palpable thyroid nodules in 5% of women, 1% of men
  - Benign or Malignant?
  - Ultrasound/Fine needle aspiration (FNA)
  - 7-15% of these will be cancer; 63,000 cases/year in the US
  - Predicted to become the 3rd most common cancer in women by 2019


2015 American Thyroid Association Management Guidelines for Adult Patients with Thyroid Nodules and Differentiated Thyroid Cancer

Parathyroidectomy- Why?

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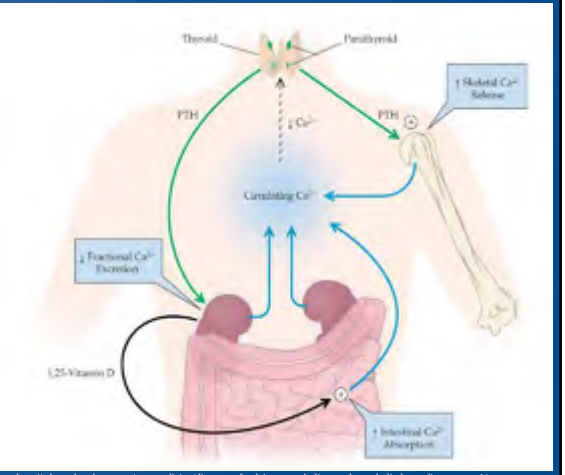
- Hypercalcemia
  - "Bones, groans, psychiatric overtones"
  - Pain; abdominal, extremity/muscular
  - Constipation
  - Confusion
- PTH elevated
  - Imaging identifies parathyroid adenoma



http://what-when-how.com/acp-medicine/diseases-of-calcium-metabolism-and-metabolic-bone-disease-part-1/

Thyroidectomy/Parathyroidectomy- How?

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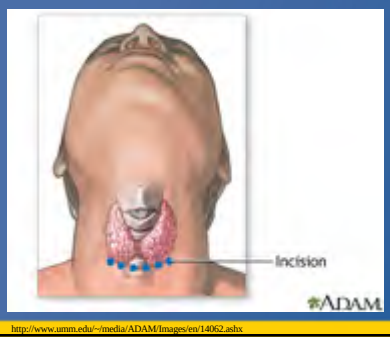
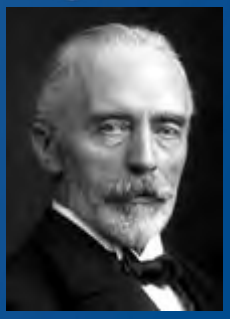
- Transcervical
  - First described by Theodor Kocher in 1880s
- Direct route, technique perfected
- Can lead to unsightly neck scarring



http://www.umm.edu/~/media/ADAM/Images/en/14062.ashx

http://people.com/celebrity/brooke-burke-charvet-reveals-surgery-scar/



https://www.nobelprize.org/nobel_prizes/medicine/laureates/1909/kocher-bio.htm

Impact of Postthyroidectomy Scar on the Quality of Life of Thyroid Cancer Patients

Yuri Choi, Ji Hye Lee, Yeon Hee Kim, Yong Sang Lee, Hang-Seok Chang, Cheong Soo Park, Mi Ryung Roh

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"The QoL does not seem to be associated with the severity or type of the scar, but rather with the presence of the scar itself....
Thus, all patients with postthyroidectomy scars may be affected by decreased QoL regardless of the characteristics of the scar or their own status….

Our finding suggest that the QoL of patients with postthyroidectomy scars is impaired after traditional thyroidectomy as much as that of patients with other chronic skin diseases, such as psoriasis, vitiligo, and severe atopic dermatitis."

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Ann Dermatol Vol. 26, No. 6, 2014

What you may

An Epidemic of Thyroid Cancer?

The New

Debate Over Early

More researchers suggest 'active

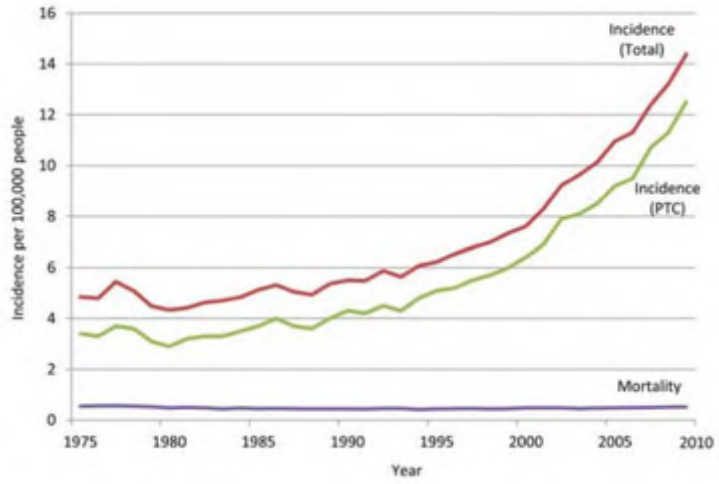
Study P

Op-Ed We sh

Los

Overdiagnosis in Th
Observation

Figure 1



Screening for Thyroid Cancer

st Should Be Left Alone.

Overdiagnosing Thyroid Cancer

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American Thyroid Association Statement on Remote-Access Thyroid Surgery

Eren Berber,[1] Victor Bernet,[2] Thomas J. Fahey III,[3] Electron Kebebew,[4] Ashok Shaha,[5] Brendan C. Stack, Jr.,[6] Michael Stang,[7] David L. Steward,[8] and David J. Terris[9] for the American Thyroid Association Surgical Affairs Committee

FIG. 1. Illustration showing the bilateral axillary breast approach.

FIG. 2. Illustration showing the setup and instrumentation for a transaxillary thyroidectomy.

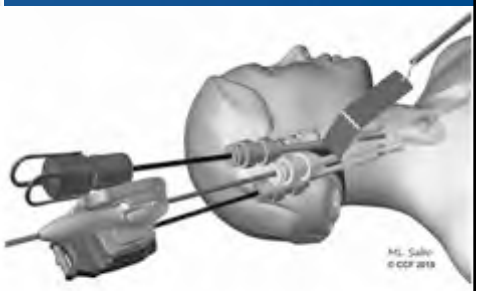
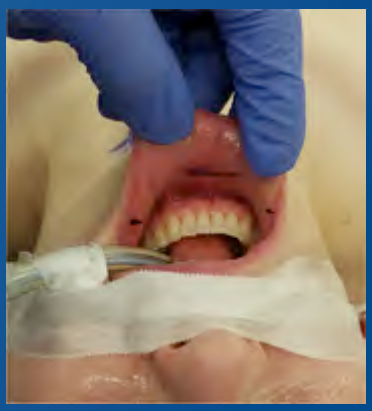


FIG. 3. Illustration demonstrating the technique for the facelift approach for thyroidectomy.

TONS

- Transoral Neck Surgery
  - Thyroidectomy
  - Parathyroidectomy
  - Central Neck Dissection
- Robotically or Endoscopically



TONS – Robotic

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Table 2 Surgical outcomes of transoral robotic thyroidectomy and comparison during period A (initial 12 cases) and period B (latter 12 cases)

Variables	Total ($n = 24$)	Period A ($n = 12$)	Period B ($n = 12$)	P value*
Age, years	39.6 ± 11.6	38.3 ± 11.0	41.0 ± 12.5	0.684
Body mass index (kg/m^2)	22.4 ± 2.6	22.0 ± 3.0	22.7 ± 2.1	0.684
Operation time (min)	232 ± 41	234 ± 54	230 ± 24	0.100
Hospital stay (days)	3.3 ± 0.8	3.2 ± 0.4	3.5 ± 1.0	0.640
No. of retrieved CLN in PTC patients	4.7 ± 3.2	5.0 ± 3.2	4.5 ± 3.6	0.370
Vocal cord palsy				
Transient	0 (0)	0 (0)	0 (0	n.a
Permanent	0 (0)	0 (0)	0 (0)	
Mental nerve injury		9 (75.0)	0 (0)	<0.001
Transient/permanent†		6/3	0/0	
Bruise over zygomatic region	2 (8.3)	0 (0)	2 (16.7)	0.478
Perforation of chin flap	1 (4.2)	0 (0)	1 (8.3)	1.000
Tearing of commissure of lips	1 (4.2)	0 (0)	1 (8.3)	1.000
Median follow-up (range) (months)	24.2 (6, 52)	46.3 (39, 52)	7.9 (6, 9)	

Transoral robotic thyroidectomy: lessons learned from an initial consecutive series of 24 patients

Hoon Yub Kim[1] · Young Jun Chai[2] · Gianlorenzo Dionigi[3] · Angkoon Anuwong[4] · Jeremy D. Richmon[5]

Complications	Number (rate)
Hypoparathyroidism	
Temporary	3 (5 %)
Permanent	0
Recurrent laryngeal injury	
Temporary	2 (3.33 %)
Permanent	0
Mental nerve injury	0
Hematoma	1 (1.67 %)
Infection	0
Subcutaneous emphysema	0
Pneumomediastinum	0
Tracheal injury	0
Esophageal injury	0

CrossMark

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Table 2 Operative details

Details	Value
Operation ($n = 60$)	
Hemithyroidectomy	34 (56.67 %)
Bilateral thyroidectomy	26 (43.33 %)
Operative time (median, mins)	115.5 (75–300)
Hemithyroidectomy	90 (75–180)
Bilateral thyroidectomy	135.5 (105–300)
Blood loss (median, mL)	30 (8–130)
Drainage volume (average, mL)	74.76 (33–250)
Drainage removal (average, days)	3 (2–4)
Hospital stay after surgery (mean, days)	3.6 (2–7)

Johns Hopkins Experience 7-2017

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Operative details	
Operation (N = 32 procedures on 30 patients*)	
Lobectomy	23
Total Thyroidectomy	3
Sistrunk	1
Parathyroidectomy	5
Robotic	6
Endoscopic	25
BMI (Median, Range)	28 (19.9-44)
Operative time (Median, Range, mins)	260 (117-480)
Estimated Blood Loss (median, range)	10 (5-500mL)
Drains	3
Hospital Stay After Surgery (mean, days)	0.9

*One patient converted from robotic to endoscopic, one patient had parathyroidectomy and lobectomy, and one patient had lobectomy and Sistrunk procedure

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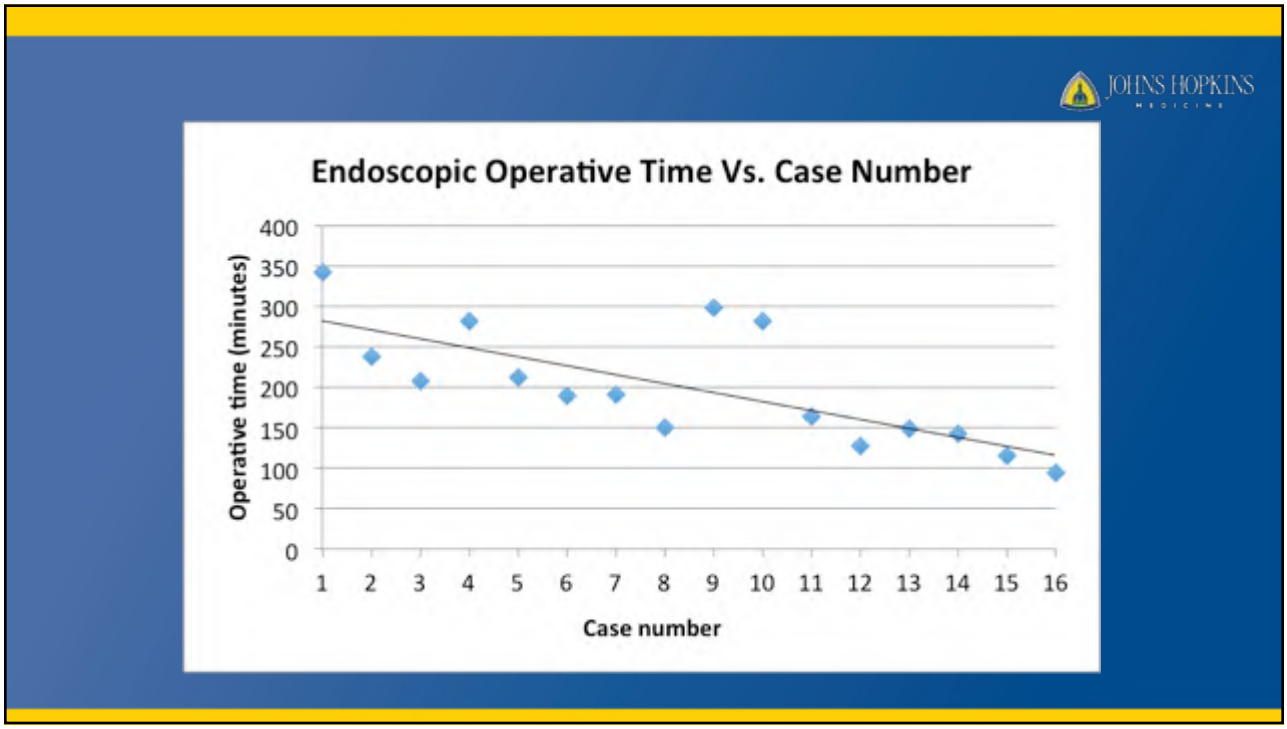
Complications	N (%)
Hypoparathyroidism	
Temporary	0
Permanent	0
Recurrent Laryngeal Nerve Injury	
Temporary	1 (3.3%)
Permanent	0
Mental Nerve Injury	0
Skin Burn	2 (6.7%)
Syncope	2(6.7%)
Hematoma	0
Infection	0
Esophageal Injury	0
Pneumomediastinum	0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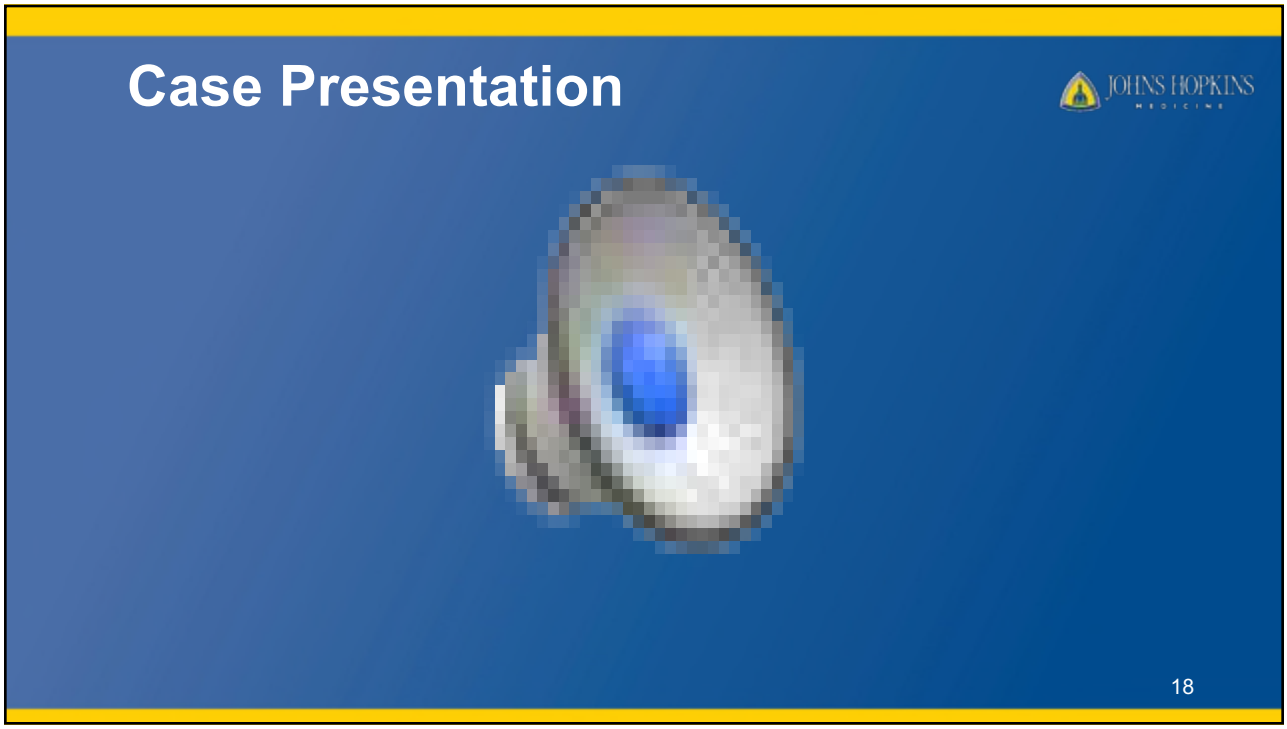
MEDICINE
Endoscopic Operative Time Vs. Case Number
Operative time (minutes)
400
350
300
250
200
150
100
50
0
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Case number


Case Presentation
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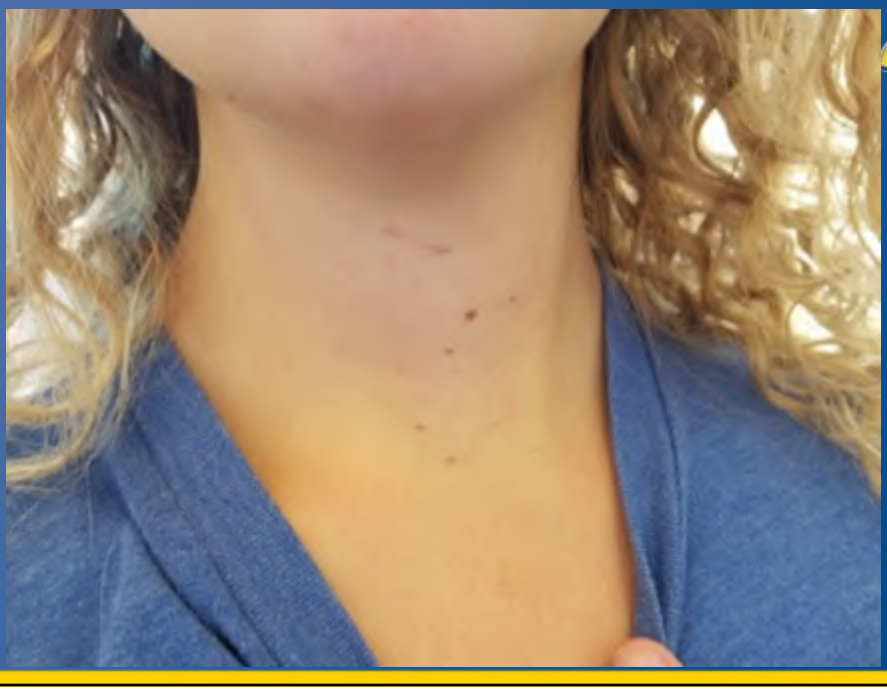

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TONS – Challenges

1. Robotic – arm positioning, instrumentation
2. Endoscopic – camera operator, instrumentation
   Limited DOF, nerve dissection
3. Developing the operative field/pocket
4. Maintaining a view – insufflation/camera debris
5. Blind port placement

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Questions ?

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