

Minimally Invasive Thyroid Surgery

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Why minimally invasive?

- ◆ Traditional thyroid surgery is not a severely deforming operation but does leave a scar in an area that is visible on a daily basis, unlike chest or abdominal surgery
- ◆ Can we use smaller incisions without compromising cancer cure rates or increasing the rate of other complications ?

Minimally invasive thyroid surgery

- Goals
 - Reduction in length of the scar
 - Faster recovery
 - Reduced pain
 - Earlier discharge
 - No difference in rate of bleeding, injury to the nerves to the voice box, injury to parathyroid glands that regulate calcium

What is “minimally invasive thyroid surgery”

- ◆ Primarily defined by reduced incision length
- ◆ No formal definition
- ◆ Can be achieved by modifying traditional surgical techniques or by the use of endoscopes

How big is a normal thyroidectomy incision?

- ◆ Historical Context of thyroid surgery



- ◆ At the turn of the last century Kocher took a dangerous operation and made it safe
 - ◆ Before Kocher 40% thyroid surgery patients died
 - ◆ After Kocher less than 1% died
 - ◆ Only time Nobel Prize given for surgical innovation
- ◆ Incision length not a major concern

Thyroid Incision Length

- ◆ As the last century progressed thyroid goiter became less prevalent due to the addition of iodine to salt



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- ◆ thyroid nodules were detected at smaller sizes
- ◆ Surgical techniques were also refined during this period
- ◆ Thyroidectomy incisions could therefore start to decrease in size
- ◆ In 2000 at Pennsylvania Hospital our smallest thyroidectomy incision was 7 cm (2 3/4 inches)

Incision Size

- ◆ Thyroid incisions currently vary in size based on:
 - ◆ The size of the gland (goiters need larger incisions)
 - ◆ The presence of thyroiditis (inflammation makes the operation more difficult)
 - ◆ The body of the patient (obesity or short neck makes things challenging)

How do we reduce our incisions?

- ◆ Surgical technique
- ◆ Technology
 - ◆ Use of cautery or ultrasonic devices to control bleeding
 - ◆ Use of endoscopes
- ◆ In 2007 at Pennsylvania Hospital our smallest incision length is 3.5 cm (1 ¹/₂ inches)

Is everyone a candidate for minimally invasive thyroid surgery?

- ◆ Large thyroid goiters require standard incisions
- ◆ Patients with large thyroid cancers (greater than 2 cm) require standard incisions
- ◆ Patients with thyroiditis require standard incisions
- ◆ Patients with thyroid cancer that has spread to lymph nodes require standard incisions

Who is a candidate for minimally invasive surgery?

- ◆ Thyroid cancers less than 2 cm
- ◆ Thyroid nodules less than 3.5 cm
- ◆ Smaller goiters
- ◆ Glands free of thyroiditis

Minimally Invasive Video Assisted Thyroidectomy (MIVAT)

- ◆ Technique where a portion of the surgery is done with an endoscope through a 2 cm incision (about 3/4")
- ◆ Main advantage is a further reduction in incision length
- ◆ Group with the most experience (Italians) does only about 10-15% of their thyroid surgery this way
- ◆ Slowly being adopted in the US (in process of starting at Pennsylvania Hospital)

Take home message

- ◆ Minimally invasive techniques play a limited role in treating thyroid cancers
- ◆ They are appropriate for small cancers with no spread to the lymph nodes
- ◆ The principal advantage is a reduction in the size of the neck scar and a slight improvement in recovery time and pain
- ◆ Not wise to compromise your chance for cure - thyroid cancer is a very treatable malignancy and the traditional surgical approach does not cause much long term compromise of quality of life
- ◆ Talk to your surgeon to see if you are a candidate for a minimally invasive procedure but realize that at present only a minority of patients qualify

Thanks

