Abstract: Background. A novel remote access robotic thyroidectomy technique has been described that uses as its portal a postauricular and occipital hairline (facelift) incision. Experimental investigation and clinical validation have been completed. A detailed technical description is provided.

Methods and Materials. A young woman with a thyroid nodule was referred for surgery. Because of her concerns about a visible neck scar, she opted for remote access thyroidectomy.

Results. A left robotic facelift thyroidectomy was performed in less than 2 hours as a drainless, outpatient procedure. Videographic demonstration of the robotic resection is included.

Conclusions. A number of remote access thyroidectomy techniques have proliferated. We developed and described an intuitive approach that uses familiar dissection planes and avoids the need for breast incisions and crossing the clavicle.

INTRODUCTION

A number of remote access thyroidectomy techniques have been described1–3 and begun to be performed in the United States.4 We recently developed and reported on a robotic facelift thyroidectomy that uses as its access port a postauricular and occipital hairline incision.5,6 The area of dissection is reduced relative to a robotic axillary thyroidectomy,7 and the need for special positioning of the arm is eliminated because the clavicle is not traversed. A shorter distance of dissection allows for a drainless, outpatient procedure.

PATIENT INFORMATION

The patient is an otherwise healthy 27-year-old woman with an enlarging 1.8-cm thyroid nodule. It is cytologically benign, but the patient requested removal with remote access surgery. Her body mass index is 23.4. Institutional approval to analyze thyroidectomy outcomes retrospectively was granted (HAC 04-06-043).

SURGICAL TECHNIQUE

Patient positioning. The patient is placed in the supine position on the operating table. The head is turned slightly away from the side of the lobectomy, and a cushion is placed to avoid excessive rotation of the neck. The table is placed in slight reverse Trendelenburg and airplaned away from the surgeon.

Surgical pocket development. A modified facelift incision is made (no preauricular limb is used), and dissection is carried down to the sternocleidomastoid muscle. In sequential fashion, the greater auricular nerve and then the external jugular vein are identified (both are deflected dorsally). The anterior border of the sternocleidomastoid muscle (SCM) is fully mobilized, the omohyoid muscle is retracted ventrally, and the space between the SCM and strap muscles is developed. A Chung fixed retractor system with a modified blade is used to maintain the operative pocket. A Singer retractor (Augusta, GA) is used to retract the SCM muscle posteriorly.

Robot docking. The daVinci S Robotic System (Intuitive Surgical Inc, Sunnyvale, CA) is deployed, with a 30-degree down dual endoscope in the center, a Maryland forceps in the nondominant hand, and a Harmonic shears (ACE23; Ethicon Endosurgery, Cincinnati, OH) in the dominant hand. A field surgeon is seated at the patient's side, with a Terris atraumatic suction (Medtronic Inc, Jacksonville, FL).

Robotic resection. The console surgeon mobilizes and divides the upper pedicle with the Harmonic. The superior parathyroid gland is dissected posteriorly. The superior thyroid pole is reflected inferiorly,
exposing the inferior constrictor muscle, where the external branch of the superior laryngeal nerve may be seen. The recurrent laryngeal nerve is identified just before its entrance under the inferior constrictor muscle. The nerve is dissected for a short distance inferorly, and the ligament of Berry is divided above it. The lateral surface of the thyroid gland is fully mobilized, including ligation of the middle thyroid vein with the Harmonic device. The isthmus is divided with the Harmonic. The inferior pole is fully mobilized, and the inferior parathyroid gland is dissected away from the thyroid. The remaining attachments to the trachea are released, and the specimen is retrieved.

**Closure.** After irrigating the wound, a large sheet of Surgicel (Ethicon Inc., Somerville, NJ) is placed in the thyroid compartment. The robot is undocked, the retractors are removed, and the skin incision is closed with interrupted sutures of 4-0 Vicryl. The skin is sealed with glue and covered with [1/4]-inch Steri-strips.

The patient is extubated deep and taken to the recovery room. Once alert and capable of oral intake, the patient is transferred to the same-day surgery center and discharged to home.

**CONCLUSIONS**

A number of remote access thyroidectomy techniques with or without the assistance of robotic technology have proliferated. We have developed and described an intuitive approach that uses familiar dissection planes and avoids the need for breast incisions and crossing the clavicle.

**REFERENCES**


