In this unique volume, leading international experts share their experiences in the management of head and neck tumors, providing a guidebook for all surgeons dealing with head and neck neoplasms.

Each chapter offers a concise description of useful ‘pearls’ and dangerous ‘pitfalls’ which must be avoided. Contributions cover topics from thyroid glands, neck metastases, and oral tumors to laryngeal, pharyngeal, and nasopharyngeal tumors, as well as salivary gland tumors, skull base tumors, and reconstruction surgery. In addition to frequent diseases which are encountered in everyday practice, some new therapeutic topics such as video-assisted thyroidectomy, robotic surgery, and management of the neck after organ preservation treatment are discussed.

The 2nd edition has been extended by topical chapters of major practical interest including the latest findings and techniques. The new chapters are clearly indicated and can be recognized easily.

Head and neck surgeons, otolaryngologists, neurosurgeons, maxillofacial surgeons, plastic surgeons, radiation and clinical oncologists, and general surgeons, as well as students and residents interested in the management of head and neck tumors, will find this publication an indispensable manual.
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**Minimally Invasive Video-Assisted Thyroidectomy**

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**Introduction**

MIVAT is characterized by a single central incision of 1.5-2 cm above the sternal notch. The operative space is maintained through an external retraction for gas insufflation is extended subcutaneously and platysma are carefully dissected to avoid any minimum bleeding. The midline is divided longitudinally as much as possible (1-2 cm). A 30° 5-mm endoscope is inserted through the skin incision. Under endoscopic vision, the dissection of the thyroidal glands is completed by using small instruments: atraumatic scissors, atraumatic suction tip, one-pass throat loops, and scissors. Hemostasis is achieved by ultrasonic shears (Harmonic) and small (1 mm) vascular clips, otherwise conventional or absorbable.

A careful selection of the patients is essential for a low incidence of complications and a good outcome. An important factor is the volume both of the nodule and of the gland, similarly, the presence of athalasie, fiber in reoperation, can make the dissection extremely difficult. Thyroidectomy can no longer be considered a contraindication (1). General indications might be summarized as follows: (1) Thyroid nodule less than 30 mm in their largest diameter, (2) thyroid gland volume less than 25 ml, and (3) no previous neck surgery or irradiation. MIVAT is indicated for benign nodules and low and intermediate risk differentiated thyroid cancer [1, 2].

Possible complications of MIVAT are roughly the same as in open surgery [3-4].

**Practical Tips**

MIVAT steps reproduce the conventional operation. Operative space is maintained by endoscopic retraction on the sterno-clavicular joints. The gland is approached from a central and anterior cervicomedial wound. During MIVAT, the magnification of the endoscope allows a better visualization of the structures and orientation of spatulas and other atraumatic tools makes a less traumatic dissection.

The external branch of the superior laryngeal nerve can be easily identified during most of the procedures after the superior thyroid pedicle has been dissected.

The internal laryngeal nerve also can be easily identified during MIVAT, due to the magnification of the endoscope. It is important to emphasize that during the phase of the operation, the endoscope must be held in an orthogonal position with the thyroid lobe and mediastinal trunk, with the 30° objective downward.

The incorrect use of the Harmonic shears can jeopardize the nerve. During the arterial stage, the surgeon should always remember to keep the inactive blade of the instrument orientated away injuring the nerve, which always lies posterior to it and is very sensitive to heat transmission. There are some concerns about stretching the parathyroid glands and the internal laryngeal nerve during the extraction phase. The complete dissection of the nerves during the endoscopic phase and traction on the larynx during the extraction process worsens parathyroid injury. The parathyroid glands are easily visualized by the endoscope magnification and their manipulation by spatulas is easier than in open surgery.

Major bleeding can occur by injury of the superior polar pedicle and of tumor vessels. MIVAT is indicated for benign nodules and low and intermediate risk well-differentiated thyroid cancer [1, 2].

**Conclusion**

In this chapter, indications and potential complications of MIVAT are discussed, and practical tips to avoid or at least limit the complications are highlighted. As long as the inclusion criteria are carefully respected, the MIVAT complication rate is similar to the conventional technique. Magnifications during the endoscopic phase of the operation allows careful dissection of superior and inferior laryngeal nerves, easy identification and preservation of parathyroid glands, and safe sections of the major and minor vessels under direct vision. Usually, better postoperative course and superior better cosmetic outcome are achieved, but only about 15% of patients fit the inclusion criteria, particularly in endemic goiter areas. This fact probably limits the diffusion of this technique, except in certain centers [3-4].

**References**


