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Review Article

Initial Application of Ligasure in Head and Neck Surgery in Department of Otolaryngology, Hue University of Medicine and Pharmacy Hospital

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Abstract

The application of Ligasure vessel sealing system in head and neck surgery has been currently published in many studies. The results published were reported to be reliable and safe. Since 2018, the Department of Otolaryngology - Head and Neck Surgery in Hue University of Medicine and Pharmacy Hospital performed applications of Ligasure in head and neck surgery for the first time and may have shown several advantages and benefits. In this presentation, we give a brief overview of first patients who underwent operation with the use of Ligasure. In our department, Ligasure is used for selective or modified radical neck dissection, thyroidectomy, superficial parotidectomy.

Keywords: Ligasure; Neck Dissection; Parotidectomy; Thyroidectomy

Role and effects of ligasure in neck head surgery

Neck Head surgery is a relatively complicated surgery because it involves a lot of important anatomical milestones of the body including nerve and large blood vessels. The hemostasis in the process of dissection of nerve preservation and large vascular preservation is also one of the goals of the surgical head of the neck area.

Use of Ligasure ultrasonic cutting cutters in the neck head surgery has been reported in many works, giving reliable and safe results. The effect includes good hemostasis, reduced surgical time, postoperative pain relief and rapid recovery after surgery [2]. Use of ligasure has advantages over other Classical Methods [3]. This is a device that can be used for integration consisting of coagulation clamps, stapling, ultrasonic clotting allowing the column to force the blood vessels and bundle tissue, held. The generator of this ultrasonic knife is designed to create high current (4A), low voltage (200V), precise use of pressure and energy to convert collagen and elastin in the vascular form to create a permanent freezing in blood vessels of up to a few millimeters in size [1]. When the ultrasonic knife clamps into the active tissue, it produces intracellular friction in the tissue, disrupting the hydrogen bond, causing the protein to be transformed and establishing a sticky freezing block. Although the heat level between the two branches of the knife is high, it minimizes the heat damage to the two below 1 mm, as well as less smoke and less causes the organizational stickiness, so less damage to the surrounding organization. According to the study of Colella G., the Ligasure knife can cut and bleed at the same time the blood vessel is up to 7 mm in size, whereas the normal bipolar knife is only reliable when burning blood vessels smaller than 2 mm [1].

Department of Otolaryngology Hospital Hue University of Medicine and Pharmacy has initially made use of Ligasure ultrasonic combustion cutter in surgical head-neck from 2018 and for good results. Ligasure has been used in our faculty in surgery such as selective neck dredging, lobe agriculture surgery, carrying ear preservation cord, thyroid cancer surgery or benign thyroid adenoma. The result shows that the Ligasure knife has a good burning and hemostasis effect, minimizing surgery time as well as limiting postoperative complications. This is truly a safe and reliable device. Following, we describe the summary of some cases that have been performed at our faculty that use ultrasonic Ligasure-cutting cutters.

Some cases are performed surgical use of Ligasure knife

Case 1: Dredging neck ganglia

Female patients 64 years old are hospitalized because of swallowing difficulties with the right neck tumors for 2 months, slowly progressing. Patients without a history of smoking, drinking alcohol. Through clinical visits detection of the right tonsils tumor, the measured size on the MRI of the neck-facial area is 13.8 x 28.8 mm (Figure 1A). In addition, the patient has a group II and III cervical ganglion, the largest measured lymph node size is 16.0 x 22.7 mm (Figure 1B). The patient is pressed the right tonsils tumor biopsy for the results carcinoma the tonsils epithelial cells (Figure 2). Under the TNM phase classification system of the 8th edition, the patient is rated T2N2bMo, corresponding to the IVA stage. Based on the US NCCN treatment table 2018 for throat cancer, for patients with a N2a or N2b classification, the surgical removal of a spontaneous pharyngeal tumor with the dredge of the neck throat of the lateral ganglia or both sides is necessary. Therefore, this patient

has been surgically in Aug. 2018, including: Widely excision of a large tumor of the right tonsils area, with the same neck dredge in group II, III, IV, V, VI and the preservation of the ornamental veins in General and Subnerve arteries (Figure 3 and 4). The duration of the surgical dredging < 1 hours. Postoperative post-operative < 20 ml. The patient is drained by Hemovac on the second day after the procedure with a < 5 ml flow of conductivity. Dry, non-infectious surgical pit. The patient is discharge on the 7th day after the operation. The re-examination of oncology in combination with simultaneous treatment.

Figure 1: Drug size and reheating of the tonsils and right neck ganglia.
(A) Tumor size 13.8 x 28.8 mm.
(B) Largest size lymphadenopathy is right group II-III 16.0 x 22.7 mm.

Figure 2: Anatomical carcinoma epithelial cells.

Figure 3: Anatomical milestones recorded during the surgery.
(A) Road dredging Line Group II, III, IV, V, VI on right.
(B) II-III neck ganglion stick to landscape veins.
(C) The preservation of a POKER nerve.
(D) Preserving diaphragm nerves.

Figure 4: Surgical pit after dredging the whole group of selective ganglia, using Ligasure knife.
(A) Dredging selective ganglia, preservation of ornamental arteries, venous landscape, X-wires, SYRINGES and diaphragmatic nerves.
(B) En bloc dredge gangs.

Case 2: Otolaryngotropic surgery, nerve preservation VII

Patients aged 58 years old, with a history of smoking 20 packets. Five, in the institute because the tumor of the left jaw area was 2 years, the progress grew. Visits show that large tumor size 30 mm, soft, portable, pressing painless. Laparoscopic examination of the nasopharyngeal arch has not seen unusual. Ultrasound software of the cervical region (13.02.2019) noted: The gland carrying the ears of the ear, under the lateral jaws have not yet detected abnormalities. Suspicion of abnormal ganglia of the left jaw. Small needle cell biopsy FNA for the result: cytoplasm in accordance with carcinoma metamechanical lymphadenopathy. CT Scan The neck has a contrast vaccine that noted lateral angulation of the two sides of the bank and its limitations, with no access to invasive signs (Figure 5). Based on the recorded near-clinical findings, we are oriented to the diagnosis:

1. Unclear cancer of the primary site-CUPS (Carcinoma unknown primary sites), metagenic neck lymph.
2. Metagenic Cervical Cancer.

Patients with surgical removal of the neck tumor as an immediate tissue biopsy for the result U Warthin. At the same time, patients were surgical excision of the otolaryngoplasty glands with preserved facial nerve (Figure 6). The result of postoperative tumor biopsy: organization of hypertrophic saliva glands with excessive reproduction of reactive lymphocytes, not found malignant tissue. Post-operative recording: non-paralyzed, dry surgical pit, withdrawal of Hemovac-conductor on the second day after surgery with a < 5 ml discharge Here, we recognize that some of the near-clinical flaws that slow the course of treatment include:

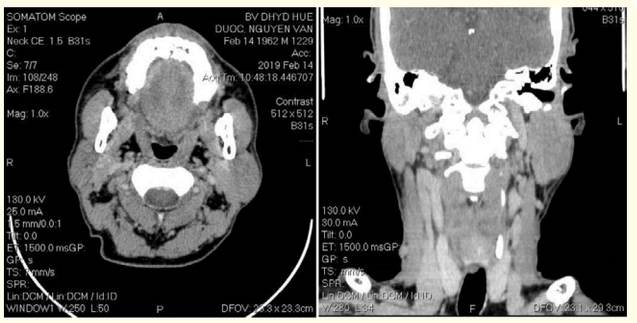

Figure 5: CT scan of the face has the right side of the shore and the upper limit of two slices of axial and coronal cuts.

Figure 6: (A), (B) the body and branches of THE VII nerves are revealed (C) Postoperative on the first day did not detect facial paralysis in the patient.

- The role of diagnostic imaging (ultrasound of the cervical and CT Scan with contrast medicine) only records the maxillary.
- The role of small needle biopsy cells when noted carcinoma cervical ganglia.
- Clinical signs by experience, when there is a lymphadenopathy of the horizontal jaw of group II to suspect nasopharyngeal cancer.

Case 3: Thyroid surgery, reverse nerve preservation and parathyroid glands

Female patients 53 years old, in the hospital for unpleasant feeling of neck area caused slight breathing difficulties with entangled. Ultrasound of the cervical region suggests that the thyroid gland has a large size follicle of 50 x 90 mm. Quantitative fT3, fT4, TSH within normal limits. The patient is carried out surgery (day 06.11.2019) of the left lobe of the thyroid gland, reverse nerve preservation and parathyroid glands using the Ligasure knife (Figure 7). The surgical period is less than 30 minutes. Postoperative preliminary Assessment: Non-hoarseness, non-hematoma, mild postoperative pain and good post-operative rehabilitation.

The patient is 37 years old in the hospital because of a right thyroid tumor in size of 15 x 11 x 18 mm (TiRADS IVb). Quantitative T3, fT4, TSH and thyroglobulin in normal limits. Ultrasound and CT Scan of the cervical region do not have migratory lymph nodes. Patients with adenomyosis must be thyroid with an thyroid gland (Figure 8). The result of a well-documented anatomical cancer. Postoperative assessment: No-hoarseness, no hematoma, no postoperative pain.

Figure 7: Anatomical milestones noted during thyroid benign tumor surgery using Ligasure knife limiting bleeding condition in caesarean.
(A) Incision and palpation tumors are
(B) Preservation of the left and lower thyroid gland
(C) conserving the left backwards nerve
(D) Thyroid benign tumors after surgery, size 55x 85 mm.

Figure 8: Anatomical milestones preserved in thyroid cancer surgery.
(A) Conservation of reverse nerve to the right and parathyroid glands.
(B) Lobe and waist of the right thyroid is cut off.

Above, we would like to share some cases when the first surgical procedure has used Ligasure ultrasonic combustion cutters at our faculty from 2018 years. Because the price of ultrasonic knives is very high, it is not yet available in the coverage insurance, so the number of patients used is limited. Post-surgical assessment is that

on each patient or surgical case that uses an ultrasound knife, the sample size is not yet represented to be able to generalize the statistics.

Conclusion

Through the cases of the disease Summary above in the initial application of the ultrasonic combustion cutter ligasure in the neck head surgery, we noted that the use of ligasure knife for safety results and has many benefits. This is a progressive in the field of surgical area of the neck head of the ear nose throat needs to be applied widely.

Cases of the disease are carried out at Otolaryngology, Hue University of Medicine and Pharmacy hospital Implementation time: From the beginning of 2018.

Funding

Personal Self-sufficient.

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