

Submission ID #: 68698

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Title: Modified Radical Neck Dissection for Cervical Metastasis

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Author Questionnaire

1. We have marked your project as author-provided footage, meaning you film the video yourself and provide JoVE with the footage to edit. JoVE will not send the videographer. Please confirm that this is correct.

✓ Correct

2. Microscopy: Does your protocol require the use of a dissecting or stereomicroscope for performing a complex dissection, microinjection technique, or something similar? **No**
If a dissection or stereo microscope i

3. Software: Does the part of your protocol being filmed include step-by-step descriptions of software usage? **No**

4. Proposed filming date: To help JoVE process and publish your video in a timely manner, please indicate the proposed date that your group will film here: **2025/12/10**

When you are ready to submit your video LAB MEDIAs, please contact our China Location Producer, [Yuan Yue](#).

Current Protocol Length

Number of Steps: 17

Number of Shots: 35

Introduction

NOTE to VO: Please record introductory and conclusion interview statements

INTRODUCTION:

~~What is the scope of your research? What questions are you trying to answer?~~

- 1.1. Hongxuan Wei: This research presents the standard procedure for modified cervical lymph node dissection, sharing surgical techniques and approaches through a video.
 - 1.1.1. [2.13.2](#)

~~What are the most recent developments in your field of research?~~

- 1.2. Hongxuan Wei: Some recent developments include refinements in modified cervical lymph node dissection techniques to reduce postoperative complications while ensuring complete lesion removal.
 - 1.2.1. [2.15.2](#)

CONCLUSION:

~~What research gap are you addressing with your protocol?~~

- 1.3. Hongxuan Wei: This study aims to address the lack of detailed instructional videos and standardized guidance for performing modified radical neck lymph node dissection surgery.
 - 1.3.1. [2.3.1](#)

~~What advantage does your protocol offer compared to other techniques?~~

- 1.4. Hongxuan Wei: The surgical procedures demonstrated here have clear boundaries, thorough structural and anatomical dissection, and are easy to learn.
 - 1.4.1. [2.5.1](#)

~~How will your findings advance research in your field?~~

- 1.5. Hongxuan Wei: This surgical approach is intended to encourage greater adoption among oral and maxillofacial surgeons.
 - 1.5.1. [2.1.2](#)

Ethics Title Card

This research has been approved by the Institutional Review Board (IRB) at the West China Hospital of Stomatology

Protocol

NOTE: Scripted from footage

2. Radical Neck Dissection for Lymph Node Removal in Head and Neck Cancer Surgery

Demonstrator: Chunjie Li

- 2.1. Make a transverse incision from the chin midline to 2 centimeters below the mandibular margin [1], then extend a longitudinal incision along the trapezius muscle's anterior edge to the middle or lower one-third junction [2].
 - 2.1.1. LAB MEDIA: 68698-1 4:23-04:30
 - 2.1.2. LAB MEDIA: 68698-1 4:31-04:39
- 2.2. Curve downward and forward over the clavicle midpoint, ending 3 centimeters below the clavicle [1]. Incise the platysma muscle with a scalpel or tissue scissors [2].
 - 2.2.1. LAB MEDIA: 68698-1 4:40-04:45
 - 2.2.2. LAB MEDIA: 68698-1 6:57-07:20
- 2.3. Elevate the rectangular flap sharply from the platysma's deep surface [1]. Then extend the submental incision 1 centimeter above the mandibular margin [2].
 - 2.3.1. LAB MEDIA: 68698-1 11:53-12:25
 - 2.3.2. LAB MEDIA: 68698-1 15:45-16:05
- 2.4. Now, separate the sternocleidomastoid muscle's clavicular insertion using curved hemostats [1]. Transect the clavicular and sternal heads 1–1.5 centimeters above the clavicle [2].
 - 2.4.1. LAB MEDIA: 68698-1 16:31-16:41
 - 2.4.2. LAB MEDIA: 68698-1 16:42-16:57, 30:11-30:20
- 2.5. Ligate cut ends and elevate the muscle [1]. Incise the carotid sheath and identify the internal jugular vein, common carotid artery, and vagus nerve [2].
 - 2.5.1. LAB MEDIA: 68698-1 31:08-31:19, 39:21-39:42
 - 2.5.2. LAB MEDIA: 68698-1 41:55-42:12
- 2.6. Next, make a longitudinal incision along the carotid sheath's medial side [1]. Ligate all branches draining into the vein. Mobilize the sheath superficially and laterally to ensure en bloc lymphoid removal [2].
 - 2.6.1. LAB MEDIA: 68698-1 32:42-33:03
 - 2.6.2. LAB MEDIA: 68698-1 41:29-41:55
- 2.7. Identify the accessory nerve at the trapezius muscle's mid-lower one-third junction [1].

Dissect proximally along the nerve, preserving it if uninvolved by tumor [2].

2.7.1. LAB MEDIA: 68698-1 47:42-57:30

2.7.2. LAB MEDIA: 68698-1 47:42-57:30

2.8. Now, identify the phrenic nerve beneath the prevertebral fascia [1]. Ligate the external jugular vein, suprascapular vessels, and transverse cervical vessels 1 centimeter above the clavicle [2].

2.8.1. LAB MEDIA: 68698-1 41:27-41:40

2.8.2. LAB MEDIA: 68698-1 41:55-42:01, 42:16-42:29

2.9. Transect the supraclavicular adipose tissue and omohyoid muscle [1]. Then incise the deep cervical fascia along the sternohyoid muscle [2].

2.9.1. LAB MEDIA: 68698-1 44:32-44:46, 46:54-47:05

2.9.2. LAB MEDIA: 68698-1 19:30-19:56

2.10. Retract the sternocleidomastoid muscle [1]. Transect the omohyoid at its hyoid attachment [2].

2.10.1. LAB MEDIA: 68698-1 30:32-30:40

2.10.2. LAB MEDIA: 68698-1 47:06-47:18

2.11. Dissect the trapezius's anterior margin upward to the mastoid [1]. Ligate adipose tissue and vascular branches, then preserve the accessory nerve [2].

2.11.1. LAB MEDIA: 68698-1 01:01:56-01:02:10

2.11.2. LAB MEDIA: 68698-1 47:42-48:00

2.12. Lift the tissue block and dissect along the prevertebral fascia toward the mastoid [1]. Ligate cervical plexus branches but avoid injuring the brachial plexus and phrenic nerve [2].

2.12.1. LAB MEDIA: 68698-1 01:02:50-01:03:00

2.12.2. LAB MEDIA: 68698-1 01:06:56-1:07:10

2.13. Transect the sternocleidomastoid muscle at the mastoid tip with electrocautery [1]. Then resect the parotid's lower pole and ligate the posterior facial vein and external jugular vein [2-TXT].

2.13.1. LAB MEDIA: 68698-1 01:11:13-01:11:30, 01:14:11-01:14:30

2.13.2. LAB MEDIA: 68698-1, 01:22:39-01:23:01

TXT: Preserve the mandibular nerve if feasible

2.14. For submandibular dissection, incise the deep fascia along the mandible. Preserve the marginal mandibular nerve, then ligate the facial artery and vein [1].

2.14.1. LAB MEDIA: 68698-1 01:37:42-01:38:20, 01:44:15-01:44:24

2.15. Dissect the submandibular gland and nodes [1]. Identify the hypoglossal and lingual nerves and ligate the submandibular duct near its orifice to spare the lingual nerve [2].

2.15.1. LAB MEDIA: 68698-1 01:45:19-01:45:34

2.15.2. LAB MEDIA: 68698-1 01:53:20-01:53:38

2.16. To close the wound, first irrigate the cavity with normal saline [1]. Apply diluted povidone-iodine solution [2]. Place a double-tube negative-pressure drain in the wound's lowest point [3].

2.16.1. LAB MEDIA: 68698-1 01:58:50-01:59:10

2.16.2. LAB MEDIA: 68698-1 01:58:32-01:58:42

2.16.3. LAB MEDIA: 68698-1 02:14:40-02:14:51

2.17. Suture the platysma, subcutaneous, and skin in sequence [1]. Secure the 60 milliliter drain with a 3-0 purse-string suture [2-TXT].

2.17.1. LAB MEDIA: 68698-1 02:17:03-02:17:20

2.17.2. LAB MEDIA: 68698-1 02:15:52-02:16:03.

TXT: Apply a light dressing

Results

3. Results

- 3.1. The entire cervical tissue specimen was successfully excised [1]. Key anatomical structures were exposed and preserved after meticulous dissection and hemostasis [2].
 - 3.1.1. LAB MEDIA: Figure 2.
 - 3.1.2. LAB MEDIA: Figure 3.
- 3.2. Thirty lymph nodes were isolated from the cervical tissue and are organized by level for pathological examination [1].
 - 3.2.1. LAB MEDIA: Figure 4. *Video editor: Highlight each row*
- 3.3. Pre- and post-operative comparison photographs showed that the patient demonstrated good recovery without visible complications [1].
 - 3.3.1. LAB MEDIA: Figure 5 and 6 . *Video editor: Show the images from left to right of both 5 and 6 sequentially*
- 3.4. Among 30 patients, the postoperative complication rate was under 5%, with a hospital stay of 6–7 days and no 30-day morbidity or mortality [1].
 - 3.4.1. LAB MEDIA: Table 1. *Video editor: Sequentially highlight the rows showing "<5%" complication rate, "6–7 days" hospital stay, and "0%" 30-day morbidity/mortality.*

1. Transverse
Pronunciation link: <https://www.merriam-webster.com/dictionary/transverse>
IPA: /'trænzˌvɜːs/, /trænz'vɜːs/
Phonetic Spelling: tranz·vurs; tranz·vurs
2. Mandibular
Pronunciation link: <https://www.merriam-webster.com/dictionary/mandibular>
IPA: /mæn'dɪb.jə.lə/
Phonetic Spelling: man·dib·yuh·ler
3. Longitudinal
Pronunciation link: <https://www.merriam-webster.com/dictionary/longitudinal>
IPA: /ˌlɑːn.dʒə'tuː.dən.əl/
Phonetic Spelling: lon·juh·too·duh·nuhl
4. Trapezius
Pronunciation link: <https://www.merriam-webster.com/dictionary/trapezius>
IPA: /trə'piː.zi.əs/
Phonetic Spelling: truh·pee·zee·uhs
5. Clavicle
Pronunciation link: <https://www.merriam-webster.com/dictionary/clavicle>
IPA: /'klæv.ɪ.kəl/
Phonetic Spelling: klav·ih·kuhl
6. Platysma
Pronunciation link: <https://www.merriam-webster.com/dictionary/platysma>
IPA: /plə'tɪz.mə/
Phonetic Spelling: pluh·tiz·muh
7. Scalpel
Pronunciation link: <https://www.merriam-webster.com/dictionary/scalpel>
IPA: /'skæl.pəl/
Phonetic Spelling: skal·puhl
8. Submental
Pronunciation link: <https://www.merriam-webster.com/dictionary/submental>
IPA: /sʌb'men.təl/
Phonetic Spelling: sub·men·tuhl
9. Sternocleidomastoid
Pronunciation link: <https://www.merriam-webster.com/dictionary/sternocleidomastoid>
IPA: /ˌstɜː.noʊ.klaɪ.doʊ'mæs.tɔɪd/
Phonetic Spelling: ster·noh·kly·doh·mas·toyd
10. Clavicular
Pronunciation link: <https://www.merriam-webster.com/dictionary/clavicular>
IPA: /klə'vɪk.jə.lə/
Phonetic Spelling: klə·vuh·vik·yuh·ler
11. Hemostats
Pronunciation link: <https://www.merriam-webster.com/dictionary/hemostat>
IPA: /'hiː.moʊ.stæt/
Phonetic Spelling: hee·moh·stat
12. Transect
Pronunciation link: <https://www.merriam-webster.com/dictionary/transect>

- IPA: /træn'sekt/
Phonetic Spelling: tran-sekt
13. Ligate
Pronunciation link: <https://www.merriam-webster.com/dictionary/ligate>
IPA: /'laɪ,geɪt/
Phonetic Spelling: ly-gayt
14. Carotid
Pronunciation link: <https://www.merriam-webster.com/dictionary/carotid>
IPA: /kə'rɑː.tɪd/
Phonetic Spelling: kuh-rah-tid
15. Jugular
Pronunciation link: <https://www.merriam-webster.com/dictionary/jugular>
IPA: /'dʒʌg.jə.lə/
Phonetic Spelling: jug-yuh-ler
16. Vagus
Pronunciation link: <https://www.merriam-webster.com/dictionary/vagus>
IPA: /'veɪ.gəs/
Phonetic Spelling: vay-guhs
17. Mobilize
Pronunciation link: <https://www.merriam-webster.com/dictionary/mobilize>
IPA: /'moʊ.bəˌlaɪz/
Phonetic Spelling: moh-buh-lyze
18. Lymphoid
Pronunciation link: <https://www.merriam-webster.com/dictionary/lymphoid>
IPA: /'lɪm.fɔɪd/
Phonetic Spelling: lim-foyd
19. Accessory
Pronunciation link: <https://www.merriam-webster.com/dictionary/accessory>
IPA: /æk'sek.sə.ri/
Phonetic Spelling: ak-sek-suh-ree
20. Phrenic
Pronunciation link: <https://www.merriam-webster.com/dictionary/phrenic>
IPA: /'fren.ɪk/
Phonetic Spelling: fren-ik
21. Prevertebral
Pronunciation link: <https://www.howtopronounce.com/prevertebral>
IPA: /,priː'vɜː.tə.brəl/
Phonetic Spelling: pree-vur-tuh-bruhl
22. Suprascapular
Pronunciation link: <https://www.howtopronounce.com/suprascapular>
IPA: /,suː.prə'skæp.jə.lə/
Phonetic Spelling: soo-pruh-skap-yuh-ler
23. Omohyoid
Pronunciation link: <https://www.merriam-webster.com/medical/omohyoid>
IPA: /,oʊ.moʊ'hɑɪ.ɔɪd/
Phonetic Spelling: oh-moh-hy-oyd

24. Mastoid
Pronunciation link: <https://www.merriam-webster.com/dictionary/mastoid>
IPA: /'mæs.tɔɪd/
Phonetic Spelling: mas-toyd
25. Electrocautery
Pronunciation link: <https://www.merriam-webster.com/medical/electrocautery>
IPA: /ɪ.lek.troʊ'kɔː.t̬ə.ri/
Phonetic Spelling: ih-lek-troh-kaw-tuh-ree
26. Parotid
Pronunciation link: <https://www.merriam-webster.com/dictionary/parotid>
IPA: /pə'rɔː.tɪd/
Phonetic Spelling: puh-rah-tid
27. Submandibular
Pronunciation link: <https://www.merriam-webster.com/dictionary/submandibular>
IPA: /ˌsʌb.mæn'dɪb.jə.lə/
Phonetic Spelling: sub-man-dib-yuh-ler
28. Hypoglossal
Pronunciation link: <https://www.merriam-webster.com/medical/hypoglossal>
IPA: /ˌhaɪ.poʊ'glɑː.səl/
Phonetic Spelling: hy-poh-glah-suhl
29. Irrigate
Pronunciation link: <https://www.merriam-webster.com/dictionary/irrigate>
IPA: /'ɪr.əˌgeɪt/
Phonetic Spelling: ir-uh-gayt
30. Povidone
Pronunciation link: <https://www.howtopronounce.com/povidone>
IPA: /'pɑː.vɪ.doʊn/
Phonetic Spelling: pah-vih-dohn
31. Subcutaneous
Pronunciation link: <https://www.merriam-webster.com/dictionary/subcutaneous>
IPA: /ˌsʌb.kjuː'teɪ.ni.əs/
Phonetic Spelling: sub-kyoo-tay-nee-uhs
32. Pathological
Pronunciation link: <https://www.merriam-webster.com/dictionary/pathological>
IPA: /ˌpæθ.ə'lɑː.dʒɪ.kəl/
Phonetic Spelling: path-uh-loj-ih-kuhl
33. Morbidity
Pronunciation link: <https://www.merriam-webster.com/dictionary/morbidity>
IPA: /mɔːr'brɪd.ə.t̬i/
Phonetic Spelling: mor-bid-uh-tee