Management of Neck Metastases

Neck Dissection

Pr Sébastien VERGEZ MD PhD
Ho Chi Minh City, 2019-11-27
Introduction: neck assessment / treatment

Classification of neck levels & neck dissections terminology

Main indications of neck dissection

Neck dissection: operative technique & videos (on-site version)

CUP syndrome: diagnostic strategy (with clinical cases, on-site version)
Neck assessment

Clinical exam
- Bilateral neck palpation
- N+ mobility evaluation
- Mucosal examination, nasofibroscopy
- Assessment X, XI, XII

Radiological exams
- CT Scan with contrast +++
- Ultra-sound (in experienced hands)
- PET-CT (low specificity)
Neck treatment

**Surgery**
- Neck dissection
- Post-op radiotherapy if pN+
- Post-op RTCT if pN+ECE+

**Radiation therapy**
- +/- concomitant chemo
- Unresectable N &/or T
- Rhinopharyngeal UNCT
- Monomodal treatment of small stages HNSCC

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Neck dissection

Objectives

Removal of neck lymph nodes

→ Diagnostic and therapeutic aim

Excision

Lympho-adipose tissues of the neck

Monobloc

+- anatomic structures

- Muscles

- Nerves

- Blood vessels
Internationaly recognized precise nomenclature


**Standardization tool**

- **to perform** reproducible procedures
- **to describe & to report** comparable procedures
Neck levels

Lallemant B et al, Ann Otolaryngol 2003
Level Ia Submental group
Level Ib Submandibular group

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Level II Upper jugular group IIa/IIb

Level III Middle jugular group

Lallemand B et al,
Ann Otolaryngol 2003
Level IV Lower jugular group

Lallemant B et al, Ann Otolaryngol 2003

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Level V Posterior triangle lymph node group
Va/Vb


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Lallemand B et al,
Ann Otolaryngol 2003

Level VI

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Neck dissection terminology

Therapeutic ND (N+) / Elective ND (N0)

1- Radical ND
2- Radical extended ND
3- Modified radical ND
4- Selective ND → Elective ND
• Level I to V

• Sacrifice
  - Internal jugular vein
  - Sternocleidomastoid muscle
  - Spinal accessory nerve (XI)

**Radical neck dissection**
• Level I to V
• Extended to the parotid gland, skin, external carotid artery,.....

• Preservation
  +/- internal jugular vein
  +/- SCM
  +/- Spinal accessory nerve (XI)

**Extended radical neck dissection**

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• Level I to V

• Preservation
  +/- internal jugular vein
  +/- Sternocleidomastoid muscle
  +/- Spinal accessory nerve (XI)

Modified radical neck dissection
• 3 Levels at least

• **Preservation**
  +/- internal jugular vein
  +/- Sternocleid muscle
  +/- Spinal nerve (XI)

I-III
II-IV
II-V
....

**Selective neck dissection**

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Japanese ND terminology

<table>
<thead>
<tr>
<th>Proposal by JNDSG</th>
<th>Type of neck dissection in accordance with AAO-HNS classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>ND (SJP/VNM)</td>
<td>Radical neck dissection</td>
</tr>
<tr>
<td>ND (SJP/VM)</td>
<td>Modified radical neck dissection with preservation of the spinal accessory nerve</td>
</tr>
<tr>
<td>ND (SJP/V)</td>
<td>Modified radical neck dissection with preservation of the spinal accessory nerve and the sternocleidomastoid muscle</td>
</tr>
<tr>
<td>ND (SJP/M)</td>
<td>Modified radical neck dissection with preservation of the spinal accessory nerve and the internal jugular vein</td>
</tr>
<tr>
<td>ND (SJP)</td>
<td>Modified radical neck dissection with preservation of the spinal accessory nerve, the internal jugular vein and the sternocleidomastoid muscle</td>
</tr>
<tr>
<td>ND (J) or ND (J1-3)</td>
<td>Selective neck dissection (II–IV)</td>
</tr>
<tr>
<td>ND (SJ1-2)</td>
<td>Selective neck dissection (I–III)</td>
</tr>
<tr>
<td>ND (J, pt)</td>
<td>Selective neck dissection (II–IV, VI)</td>
</tr>
<tr>
<td>ND (pt, sm)</td>
<td>Selective neck dissection (VI, VII)</td>
</tr>
<tr>
<td>ND (JP, pt)</td>
<td>Selective neck dissection (II–VI)</td>
</tr>
<tr>
<td>ND (JP, rp/VNM, vn)</td>
<td>Selective neck dissection (II–V with retropharyngeal node dissection, with resection of internal jugular vein, spinal accessory nerve, sternocleidomastoid muscle and vagal nerve)</td>
</tr>
</tbody>
</table>

Hasugawa et al, Jpn J Head Neck Cancer 2005
Neck dissection is usually done at the time of the tumor removal.

Routinely associated to a tumoral excision, excepted when:

- The neck has already been treated (reccurrence, 2\textsuperscript{nd} locations)
- A surgery (endoscopic or not) \textbf{T1 vocal fold} is planned
- A \textbf{sentinel node biopsy} is scheduled (T1T2N0 oral cavity)
- You manage a low grade and low stage of salivary cancers
Which LND?

It depends:

- Status N+/N0
Which LND?

N3 resectable: RADICAL neck dissection (option discussed in multidisciplinary board)
Which LND?

N1, N2: Modified radical ND or Selective ND

Level invaded +/- level close to levels invaded

The evolving role of selective neck dissection for head and neck squamous cell carcinoma

K. Thomas Robbins · Alfio Ferlito · Jatin P. Shah · Marc Hamoir · Robert P. Takes · Primož Strojan · Avi Khalil · Carl E. Silver · Alessandra Rinaldo · Jesus E. Medina

- Indication of selective ND even for selected N+
Which LND?

It depends:

- Status N+/N0
- N0: Theoretical drainage
# Theoretical lymphatic drainage

<table>
<thead>
<tr>
<th>Class</th>
<th>Lymphatic Drainage</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Inferior lip, floor of the mouth, oral cavity</td>
</tr>
<tr>
<td>IB</td>
<td>Floor of the mouth, oral cavity, sinus</td>
</tr>
<tr>
<td>IIA</td>
<td>Larynx, pharynx, oral cavity, thyroid</td>
</tr>
<tr>
<td>IIB</td>
<td>Rhinopharynx, parotid</td>
</tr>
<tr>
<td>III</td>
<td>Larynx, pharynx, oral cavity, thyroid</td>
</tr>
<tr>
<td>IV</td>
<td>Larynx, pharynx, thyroid</td>
</tr>
<tr>
<td>V</td>
<td>Larynx, pharynx, thyroid, parotid</td>
</tr>
<tr>
<td>VI</td>
<td>Larynx, hypopharynx, thyroid, oesophagus</td>
</tr>
</tbody>
</table>
Which LND?

- N0, Selective ND
  - Oral cavity: I-III (or SNB /T1T2N0)
  - Oropharynx: II-IV
  - Hypopharynx, Larynx: II-IV +/- VI

Bilateral? if median or bilateral lesion

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Operative technique
Lymph node dissection

Operative position

Head rotated the opposite side

Ipsilateral arm stretched down
Instrumentation
Skin incisions

Zanaret et al, Encyclopédie Médico-Chirurgicale

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Landmarks

**Muscles**
- Platysma
- Sterno-cleido-mastoid
- Digastric (posterior belly)
- Omo-hyoid

**Nerves & vessels**
- XI
- X
- XII
- Marginal branch VII
- Branches cervical plexus

*Facial / superior thyroid / cervical transverse pedicles*

cited in the operative report

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Platysmal dissection & Facial marginal branch dissection

Landmarks dissections

Levels II-III-IV

Sentinel node biopsy (T1N0 oral cavity)

Videos
On-site version
Ho Chi Minh City
2019-11-27
Oriented specimen / path analysis
Post-op :

- Drains
- PHYSIOTHERAPY +++
Conclusion

Neck dissection: keypoint in the neck treatment of HNSCC

- Objective evaluation of N status

- To optimize Oncological and Functional Outcomes

- Increasing indications of Selective neck dissections, sentinel node biopsies

Early physiotherapy

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