Orofacial Physiotherapy

Who, when, what?

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Introduction

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River: ‘De Waal’
Presentation overview Orofacial Physiotherapy

- Facial palsies (mimethereapy)
- Head- & Neck oncology

- Which patients
- When
- What
Incidence of facial palsies in western countries:

40:100,000 (1:2,500)
Aetiology facial palsy (n=8509!!), Adults

1958-2001 Devriese, AMC

- Bell's palsy: 50%
- Diabetes/infection: 12%
- Rare causes: 12%
- Otitis media: 3%
- Trauma: 5%
- Herpes zoster: 12%
- Operative trauma: 12%
- Diabetes/infection: 12%
- Rare causes: 12%
Acute phase
Chronic phase
Facts about Bell’s palsy, recovery:

- 71% recover complete
- 29% sequels
- Ratio male to female is equal
- The recurrence rate is 8 to 10%
- Diabetic persons are 4.5 times more likely to suffer a Bell’s palsy
- Highest incidence between 15 and 45 year
- The frequency of Bell’s palsy during pregnancy is 3 times higher
- The left and right side of the face are equally affected
Facts about Bell’s palsy:

- In 50% post auricular pain
- 1/3 changed taste sensation
- 2/3 excessive tearing

- Movements within 4 weeks, good prognosis
- Movements after 1 month, prognosis ↓
- No movement within 3 –4 months, no Bell’s palsy
Treatment acute phase

• Corticosteroids 1mg/kg during 7 days within 72 hours
• (Valaciclovir 3 times a day 1gram)
• Rest
• Eye care:
  o Eye gel, drips, salve
  o Moisture chamber
• Consultation OPF
What are the sequels of longstanding facial palsy??

• Disturbed muscle tone (hypo or hyper) causing:
  - asymmetry at rest
  - asymmetry during movement
• Stiffness
• Synkinesis
• Pain
• Low/high tear secretion
• Decreased nasal passage
• Loss of emotional expression
Synkinesis: Involuntary movements in one part when another part is moved.
Synkinesis
Mimetherapy

- Intake
- Massage of face and neck
- Relaxation
- Basic / coordination exercises
- Exercises to reduce synkineses
- Word and letter exercises
- Expression
No electrical stimulation in facial retraining

- Research findings
- May interfere with neural regeneration
- Reinforces abnormal movement patterns
- More mass action
- Provides no functional training
- Not effective in treating facial paralysis
Patient intake and evaluation

- Medical history
- Examination
- Evaluation measurements
  - House-Brackmann Scale
  - Sunnybrook Scale
  - SAQ
  - FaCE
  - Video
  - Photographic
### Sunnybrook Facial Grading System

<table>
<thead>
<tr>
<th>Resting Symmetry</th>
<th>Symmetry of Voluntary Movement</th>
<th>Synkinesis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Compared to normal side</strong></td>
<td><strong>Degree of muscle EXCURSION compared to normal side</strong></td>
<td><strong>Rate the degree of INVOLUNTARY MUSCLE CONTRACTION associated with each expression</strong></td>
</tr>
<tr>
<td>Eye (choose one only)</td>
<td>Standard Expressions</td>
<td>NONE</td>
</tr>
<tr>
<td>normal</td>
<td>Forehead Wrinkle (FRO)</td>
<td>1</td>
</tr>
<tr>
<td>narrow</td>
<td>Gentle eye closure (OCS)</td>
<td>1</td>
</tr>
<tr>
<td>wide</td>
<td>Open mouth smile (ZYG/RIS)</td>
<td>1</td>
</tr>
<tr>
<td>eyelid surgery</td>
<td>Snarl (LLA/LLS)</td>
<td>1</td>
</tr>
<tr>
<td>Cheek (naso-labial fold)</td>
<td>Lip Pucker (OOS/OOG)</td>
<td>1</td>
</tr>
<tr>
<td>normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>absent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>less pronounced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>more pronounced</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>normal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>corner dropped</td>
<td></td>
<td></td>
</tr>
<tr>
<td>corner pulled up/out</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total**

**Resting symmetry score**

**Total × 5**

**Voluntary movement score:**

**Total × 4**

**Synkinesis score:**

**Total**

<table>
<thead>
<tr>
<th>Voimov’t score</th>
<th>Resting symmetry score</th>
<th>Synk score</th>
<th>Composite score</th>
</tr>
</thead>
</table>

Photos

Rest

Forehead wrinkle

Eye closure

Smile

Snarl

Pucker
Four treatment stages

- Flaccid paralysis
- Paresis
- Synkinesis / mass action
- Post-surgical reanimation/reconstruction
Stage 1: flaccid paralysis

No tone
No movement
No expression / facial emotions
Treatment for flaccid paralysis

Patient education
Patient treatment flaccid

- Approach
- Symmetry
- Eating/drinking
- Eye care
- Massage
- Stretching eye lid
Most patients with delayed recovery follow this sequence:

Flaccid paralysis → Paresis → Synkinesis
Stage 2: paresis

- Tone ↑
- Beginning movement
- Symmetry ↑
- No synkinesis (yet)
Patient treatment paresis

• Approach
  • Symmetrical
  • Isolated
  • Slow and small, no overflow
  • Beware of synkinesis
Flaccid paralysis vs. synkinesis
Stage 3: synkinesis

1. Increased muscle tone
2. Abnormal motor pattern
Stretching
Inhibition of synkinesis
Mimetherapy: results
Mimetherapy: results

Acoustic neuroma

Pre therapy

Post therapy
Summary

Non-surgical rehabilitation for facial paralysis, paresis and synkinesis

- Patient centered
- Continuity of care
- Multidisciplinary approach
- Cost effective
- Specific training
Head and neck oncology: introduction

• What is head and neck oncology?
• Oral Cavity
• Pharynx:
  • Nasopharynx
  • Oropharynx
  • Hypopharynx
• Larynx
• Nose, sinuses, salivary glands
Introduction

• Incidence
  • Worldwide 600,000 a year
  • Holland: 2900 a year

M/f 3 : 1
Introduction

• Risk factors
  • Smoking, alcohol
  • Humane papillomavirus
  • Nutrition: vitamine A en C deficiency
  • Chewing tobacco
  • Chronic irritation/inflammation

• Histology:
  • 90% squamous cell carcinoma. Other: adenocarcinoma, sarcoma, unspecified carcinoma.
Larynx carcinoma

T1 carcinoma
Medical treatment

“The main goal of the medical treatment is to maximize a patient's survival and prevent recurrence of the disease. It is important to preserve quality of life and function”
Physiotherapy treatment options:

- Preserve neck and shoulder function
- Breathing exercises to prevent pneumonia and relaxation
- Preserve daily independence
- Edema
- Trismus
- Scar treatment
- Facial paralysis
Surgical treatment: Levels
Neck dissection

- Therapeutic or elective
- Radical neck dissection
  - Level I t/m V
  - Resect sternocleidomastoidus, n XI, jugular vein
- Supraomohyoidal:
  - Levels I t/m III
- Selective: more limited

- Nerve damage: accessory, vagal, phrenic, ansa cervicalis
Neck dissection

n. XII

Gl. submandibularis

n. XI

Ansa cervicalis

VJI
trapezius muscle  accessory nerve
Physiotherapy after neck dissection

• Resection accessory nerve
  • Trapezius muscle
    • ↓ shoulder elevation and retraction
    • ↓ lateral movement, winging, scapula

• Resection sternocleidomastoid muscle
  • ↓ Rotation, flexio en lateroflexion neck

• Resection lymph nodes+ jugular vein
  • edema

• ↓ sensibility
Shoulder pain and loss of function

Radical neck dissection 50 - 100 procent
Modified neck dissection 31 - 60 procent
Selective neck dissection 29 - 39 procent

After a neck dissection 77 procent of the patients has trouble with restarting activities in relation to work or hobby’s.
Hoe ziet dat er uit in de kliniek?
The cervical spine, the neck

Posture

Mobility, function
Edema treatment

- Lymphatic massage
- Lymphatic taping
- Exercise for lymphatic drainage
Trismus

Limitation in mouth opening measured between the frontal teeth
How can you measure this without tools?

- Risk factors: radiotherapy, limited opening pre surgery, location tumour

- Mouth tumours: 40% trismus
Treatment options trismus

- Exercise
- Stretching
- Rubber plugs
- Spatulas

*Image of a person doing exercises and using rubber plugs and spatulas.*
Thank you for your attention

Questions???????????????