Sultanate of Oman

Ministry of Health

Directorate General of Khoula Hospital

Plastic Surgery Department

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Document Title: Facial Palsy Management Protocol

Approval Process

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Acronyms:

DGKH	Directorate General Khoula Hospital
FNP	Facial nerve palsy
UMNL	Upper motor neuron lesion
LMNL	Lower motor nerve lesion
CFNG	Cross facial nerve grafting
NCS	Nerve conduction study
EMG	Electro myography
AFFP	Acute flaccid facial paralysis
LFFP	Longstanding flaccid facial paralysis
PPFP	Post-paralytic facial palsy
FFMT	Free functioning muscle transfer

Facial Palsy Management Protocol

1. Introduction

Facial expression is an essential part of social and emotional communication, and a mode of interaction with fellow humans. Facial palsy can be congenital or acquired and causes alteration in the normal facial expressions with severe psychological and functional problems in the affected patient's daily life. The management of facial palsy require the input of multidisciplinary team. Various steps from diagnosis of facial palsy to final treatment options available need to be standardized and charted out to provide the best possible care to all the patients. The management must be standardized and done in a timely manner to avoid long lasting complications. All patients with facial palsy can be categorized based on standardized classification such as the House-Brackmann classification of facial palsy (Appendix 9.3) and prioritized for the reconstruction according to the severity, time lapse since injury and age.

2. Scope:

This protocol applies to all health care professionals dealing with children and adults with congenital and acquired facial palsy.

3. Purpose:

The purposes of this protocol are:

3.1 To standardize the management for adults and children with congenital and acquired Facial Palsy.

4. Definitions:

4.1 UMN facial palsy: Upper motor neuron facial palsy characterized by hemiparesis or hemiparalysis of contralateral muscles of face with sparing of forehead muscle (incomplete facial palsy).

4.2 LMN facial palsy: Lower motor neuron facial palsy is characterized by unilateral paralysis of all muscles of facial expression (complete facial palsy) for both voluntary and emotional responses.

4.3 Babysitting procedure: Using ipsilateral cranial nerves to innervate the denervated facial muscles to maintain its bulk while cross facial nerve graft is being done.

4.4 Reanimation: Procedure to recreate the facial movements +/- spontaneity.

4.5 Acute flaccid facial paralysis (AFFP): Sudden onset of facial palsy with presence of viable facial mimetic muscles.

4.6 Longstanding flaccid facial paralysis (LFFP): Congenital and acquired causes of facial palsy persisting more than 12 months, with absence of viable facial mimetic muscles.

4.7 Post-paralytic facial palsy (PPFP): Incomplete or poor recovery of the facial nerve after peripheral facial palsy, it is associated with synkinesis (the development of unwanted facial movements), hypertonia (persistent tightness of the facial muscles), and hyperkinesis (exaggerated movements).

4.8 Synkinesis: The development of unwanted facial movements during voluntary facial muscle contraction.

5. Protocol:

5.1 The management of referred cases as follows:

5.1.1 All accepted referrals (from Pediatrics, ophthalmology, neurology, otolaryngology, neurosurgery) will be seen in Facial Palsy Clinic, Plastic Surgery department.

5.1.2 The Referral Form should be filled and completed by referring doctors (see Appendix 2) as incomplete referral forms may be rejected.

5.1.3 Congenital cases of facial Nerve Palsy should be referred to the facial palsy clinic during the first few months of life after the initial assessment by the local pediatrician/ophthalmologist for ocular protection. (See appendix 1).

5.1.4 In Pediatrics cases, where Bell's palsy is less likely to be a cause of facial weakness, urgent assessment by to pediatrics is mandatory.

5.1.5 Acute traumatic cases Facial Palsy to be referred to the Plastic Surgery on-call team at DGKH.

5.1.6 Non-traumatic cases of Facial Palsy (LFFP or PPFP stage like post Bells' palsy) can be referred to the Facial Palsy clinic if no improvement with the medical treatment after 6 months from onset of the palsy.

5.1.7 Patients with head and neck tumors with expected involvements of the facial nerve during surgery to be referred to the Facial Palsy clinic for pre-operative Planning of facial nerve reconstruction by the facial Plastic team during surgery.

5.1.8 All patients with facial palsy should have a detailed history of onset, progression, relevant personal or family history of facial paralysis, if any recovery is observed, extent of recovery and prior treatment options if any (see Appendix 2).

5.2 The management in facial palsy clinic:

5.2.1 All referral cases should be evaluated with complete history, physical examination, and the severity of the palsy is assessed by using facial nerve palsy grading system such as House Brackman [Appendix 3].

5.2.2 Depending on etiology and severity of FNP management plan is formulated and customized for individual patients.

5.2.3 Congenital facial nerve palsy reconstruction in general is aimed between 3- 5 years of age.

5.2.4 Early reconstruction for acute injuries and the optimal repair is within 3-4 weeks, this include direct nerve repair, nerve grafting, nerve transfer (babysitting procedure until the facial nerve graft is ready for coaptation).

5.2.5 Delayed reconstruction for most idiopathic or viral induced facial nerve palsy is planned if no spontaneous recovery is observed after 12-18 months from the onset.

5.2.6 Ocular protection is a priority, there are static and dynamic procedure to restore the facial function which is customized for individual patients.

5.2.7 ENT assessment and Electroneuronography (ENoG) should be requested after 24 hours of the injury especially in cases of grade VI facial palsy.

5.3 The **management after evaluation and assessment in facial palsy clinic**:

5.3.1 A customized approach used for each patient after evaluation and assessment the clinic include the following:

A. Forehead and eye brow: procedures include use Botulinum toxin to the normal side direct resection, and brow lift.

B. Eye: Early pre-operative assessment by ophthalmology, upper eyelid weight loading procedure, lateral tarsorrhaphy, lateral canthopexy, canthoplasty, temporalis transfer.

C. Nose: Static sling surgery, septorhinoplasty surgery.

D. Cheek and upper lips: Use Botulinum toxin to the normal side, dynamic muscle transfer for lower lip reanimation, digastric muscle transfer, rhytidectomy.

E. For Mouth and reconstruction of smile:

i. Static procedures (slings)

ii. Dynamic procedures for smile reanimation: regional or free muscle transfer free muscle transfer for smile reanimation.

iii Cross facial nerve grafting (CFNG) either two stage procedure or single stage procedure

iv. Ipsilateral trigeminal motor nerve transfer to masseter.

F. Lower lip: Botulinum toxin to the normal side, dynamic muscle transfer for lower lip reanimation (digastric muscle transfer).

5.4 Anesthesia care:

5.4.1 If patient undergoing for Facial re-animation with free gracilis muscle transfer the following should be considered:

A. Midline endotracheal intubation.

B. No long-acting muscle relaxant.

5.5 Nursing care:

5.5.1 The staff nurses in ward to ensure the following:

A. All cases of incomplete eyelid closure seen by ophthalmology consult.

B. Artificial tears (such as artificial Tears) every one or two hours during the day to prevent ulceration or dehydration of the cornea.

C. At night, keep the eye moist by using a thin strip of paraffin-based ointment (such as Tetracycline) and secure the upper eyelid in the closed position by applying of permeable synthetic tape / steristrip.

5.6 Rehabilitation Care:

5.6.1 The physiotherapists rule:

A. Conduct physiotherapy assessment, focusing on identifying the patterns of weakness.
B. Apply physiotherapy treatment such as facial neuromuscular retraining, some types of electrical stimulation, myofascial techniques, dry needling techniques, acupuncture, taping technique, and mirror therapy.
C. Botulinum toxin injections to reduce facial muscle contractures, synkinesis, and hemifacial spasm.
D. Provide patient education and home exercises program.

6. Responsibilities:

6.1 Directors of Anesthesia and ICU shall:

6.1.1 Ensure all anesthetists are aware and adhere to this protocol.

6.2 Director of nursing shall:

6.2.1 Ensure all nurses are aware and adhere to this protocol.

6.3. Ward In Charges/Shift In charges shall:

6.3.1 Ensure that all nurses adhere to this protocol.

6.3.2 Report incidences related to this protocol.

6.4 Staff Nurse shall:

6.4.1 Adhere to this protocol.

6.5. Head of rehabilitation Department shall:

6.5.1. Ensure all Physiotherapists are aware and adhere to this protocol.

7. Document History and Version Control:

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Version	**Description of Amendment**	**Author**	**Review Date**
01	Initial Release	Dr. Sheikhan Al Hashmi Dr. Sony P. Varghese	2022
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8. References:

Title of book/ journal/ articles/ Website	Author	Year of publication	Page
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Chang Gung Mayo Clinic Symposium in Reconstructive Surgery - Instructional Course for Facial Palsy Reconstruction.	Zuker RM, Coombs C, Borschel G, et al.	2011 Oct	25-26
Surgical Approaches to Facial Nerve Deficits	Craig Birgfeld, M.D., and Peter Neligan, M.D.	2011	177–184.
Arch Plast Surg - Smile Restoration for Permanent Facial Paralysis	Jonathan Leckenby and Adriaan Grobbelaar	2013 Sep	633–638.
Facial Palsy techniques For Reanimation Of The paralyzed Face	Tzou, Chieh-Han John, Rodríguez-Lorenzo, Andrés (Eds.)	2021	3-425

Appendix 1: The Causes of Facial Palsy

Number	Causes of facial palsy	Examples
1	Congenital cause	Neurosarcoidosis, otitis media, multiple sclerosis, moebius syndrome, melkersson rosenrhal syndrome, guillain barre syndrome, foville syndrome, eight and a half syndrome
2	Infective cause	Ramsay hunt syndrome (herpes zoster infection), lymes disease (Borrelia burgdorferi), herpes simplex
3	Traumatic cause	Temporal and mastoid bone fracture
4	Idiopathic cause	Bell's palsy
5	Benign/ Malignant causes	Acoustic neuroma, cholesteatoma, hemangioma, facial schwannoma, parotid gland tumor (benign and malignant – intra cranial and extra cranial)
6	Iatrogenic cause	Temporo mandibular joint replacement, mastoidectomy, parotidectomy

Appendix 2:

Directorate General of Khoula Hospital

Plastic Surgery Department -Facial Nerve Palsy Referral form

1.Patient Sticker	**2.Referring hospital details:** ▪ **Name of referring hospital:** ▪ **Day of 1st OPD visit:** ▪ **Referring doctor's name**:
3.Two Contact Phone Numbers of Patient:	
4.Brief History of Presentation:	
5.Date of Onset of Facial Paly:	
6.Pervious Facial/Eye Operations, Nerve Repairs:	

7.Please select other teams already involved:

- ☐ **Maxilla Facial**
- ☐ **Ophthalmic**
- ☐ **Oculoplastic**
- ☐ **ENT**
- ☐ **Otolaryngology**
- ☐ **Neuro/Skull Base Surgeons**
- ☐ **Plastic Surgeons**
- ☐ **Neurophysiologists Facial Rehabilitation Therapists**
- ☐ **Audiology**
- ☐ **Others –Please Specify:**

7. **Past medical history (including if the patient has pacemaker, internal hearing device, intracranial vessel clips, metallic implant, history of metal/foreign objects in eye or pregnant):**

8. **List of current medication:**

Notes: Please attach relevant examination findings including previous radiological investigations such as CT, MRI, NCS and surgical interventions with dates if any were performed CD of radiological investigations to be sent with patient for uploading.

Appendix 3: House-Brackmann facial paralysis scale:

House-Brackmann facial paralysis scale	
Grade	**Impairment**
I	Normal
II	Mild dysfunction (slight weakness, normal symmetry at rest)
III	Moderate dysfunction (obvious but not disfiguring weakness with synkinesis) -Normal symmetry at rest - Complete eye closure with maximal effort, good forehead movement
IV	Moderately severe dysfunction (obvious and disfiguring asymmetry) -Significant synkinesis - Incomplete eye closure**,** moderate forehead movement
V	Severe dysfunction (barely perceptible motion)
VI	Total paralysis (no movement)

Notes: This scale is used to evaluate facial paralysis at the nerve trunk, and is not a descriptive scale to describe injury to specific distal facial nerve branches.