1. Introduction and Who Guideline applies to

This guideline is intended for use by Medical and Nursing staff working with Children presenting with facial palsy within the UHL Children’s Hospital and Children’s Emergency Department.

The facial or seventh cranial nerve (CN VII) is a predominantly motor nerve that innervates the muscles of facial expression and the muscles of the scalp and ear.

The term facial palsy generally refers to weakness of the facial muscles, mainly resulting from temporary or permanent damage to the facial nerve. It can affect any part of the face, one, or both sides. Facial nerve palsy occurs in around 25 children per 100,000 per year.

Key points:

This guideline is for unilateral lower motor neurone facial palsy. Any child presenting with bilateral, or incomplete facial palsy needs urgent investigations and referral to Paediatrics.

2. Child presents with Unilateral Facial Palsy

- Is the child unwell? Is the onset gradual? Is this an upper motor neurone (UMN) weakness? (Forehead Spared)
  - Yes:
    - Resuscitate and seek Senior support (ST4+)
    - Further investigations e.g. FBC, serology, urgent neuro-imaging
  - No:
    - Urgent CT Head
    - Liaise with QMC Neurosurgery and/or UHL ENT as required

- Is there a history of trauma?
  - Yes:
    - Senior Review re: urgent Neuro-imaging (CT or MRI)
    - Refer to General Paediatrics for further investigation
  - No:
    - Refer to ENT for further investigation and management advice
    - Consider Aciclovir (See guidance)

- Evidence of Otitis media, mastoiditis or blisters in ear canal?
  - Yes:
    - Take blood for Lyme Serology
    - Consider empirical treatment (See guidance)
    - see NICE 2018
      https://www.nice.org.uk/guidance/ng95
  - No:
    - Refer to ENT for further investigation and management advice
    - Consider Aciclovir (See guidance)

- Evidence of Lyme Disease or travel to endemic area?
  - Yes:
    - Refer to Children's Hospital Guideline / EMEESY Guidance
  - No:
    - Refer to ENT for further investigation and management advice
    - Consider Aciclovir (See guidance)

- Evidence of Hypertension?
  - Yes:
    - Refer to Children's Hospital Guideline / EMEESY Guidance
  - No:
    - Refer to Children's Hospital Guideline / EMEESY Guidance

- Suspicion of Haematological Malignancy?
  - Yes:
    - Take blood for further investigations
  - No:
    - Provide patient leaflet
    - Complete Discharge checklist
    - Advice about eye care and red flags
    - Refer to GP or Paediatric OPD follow up

- Likely Bell's Palsy? (Idiopathic)
  - Yes:
    - Commence Prednisolone
    - FBC recommended before commencing steroids (See guideline)
  - No:
    - Further investigations e.g. FBC, serology, urgent neuro-imaging
2.1 Aetiology

Facial paresis or weakness, unilateral or bilateral, has varied aetiology in children. In most cases a cause is not identified and it tends to resolve spontaneously.

It is important to identify whether the patient has an upper motor neurone (UMN) or lower motor neurone (LMN) lesion to assist in identifying cause.

Bell’s palsy, or idiopathic facial paralysis, is defined as a lower motor neuron facial palsy of acute onset, without any evidence of an aural, neurological, or local cause. It accounts for the majority of reported cases (40% to 70%) of facial paralysis and is a self-limiting idiopathic rapid onset facial palsy that is non-life-threatening and has a generally favourable prognosis.

Differential Diagnosis of Facial Nerve Paralysis in Children

- Infective: Herpes Virus (type 1), Herpes Zoster (Ramsay-Hunt syndrome), Otitis media or Cholesteatoma
- Mononeuropathy - eg due to diabetes mellitus, sarcoidosis
- Neoplastic: Leukemias, lymphomas, Posterior fossa tumours
- Hypertension
- Syndromes: Melkersson's syndrome (recurrent facial palsy, chronic facial oedema of the face and lips, and hypertrophy/fissuring of the tongue)

<table>
<thead>
<tr>
<th>Upper motor neurone facial palsy</th>
<th>Lower motor neurone facial palsy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Head Trauma</td>
<td>1. Bell's Palsy / Idiopathic</td>
</tr>
<tr>
<td>2. Stroke</td>
<td>(diagnosis of exclusion)</td>
</tr>
<tr>
<td>3. Intracranial space occupying lesion</td>
<td>2. Birth trauma (eg forceps delivery)</td>
</tr>
<tr>
<td>4. VII cranial nerve demyelination</td>
<td>3. Guillain-Barré syndrome,</td>
</tr>
<tr>
<td>5. Multiple Sclerosis</td>
<td>4. Ramsay Hunt syndrome</td>
</tr>
<tr>
<td></td>
<td>5. Lyme disease</td>
</tr>
<tr>
<td></td>
<td>6. Facial nerve tumour</td>
</tr>
<tr>
<td></td>
<td>7. Moebius syndrome (congenital)</td>
</tr>
<tr>
<td></td>
<td>8. Other ENT causes (eg Parotid gland trauma, Cholesteatoma)</td>
</tr>
</tbody>
</table>

2.2 Assessment

History

Thorough history to include duration and rapidity of progression, preceding history of viral illness, trauma or associated systemic symptoms.

Specifically ask about mild pain in or behind ear, facial numbness, hearing impairment or hyperacusis, disturbed taste, dry eyes, clumsiness, falls and visual disturbance or change in behaviour or academic performance.
2.3 Examination

**General examination:** Check BP. Skin and joints should be examined for bruising and rashes (erythema migrans) or tick bites to assess for Lyme’s disease.

**ENT examination:** Inspection of the oropharynx and tonsils for asymmetry, palpation of the parotid gland to exclude a mass, and check for cervical, inguinal and axillary lymphadenopathy. Otoscopic examination must be done to rule out any local aural pathology, including skin blebs and blisters.

**Neurological examination:** Document that facial nerve is involved diffusely (flaccid weakness - both upper and lower face, smooth face on affected side, absence of wrinkles on forehead, sagging of inferior lid, flat nasolabial fold and drooping of angle of mouth). Perform a full cranial nerves examination, and examine for ataxia, nystagmus and cerebellar signs.

### Red Flags

- Forehead sparing (i.e. UMN lesion) or other abnormal neurology. Look for signs of intracranial lesion.
- Middle ear infection, effusion, hearing loss, vertigo, ear discharge. Look for vesicles – Ramsey-Hunt syndrome Consider more serious ENT pathology such as cholesteatoma - discuss with ENT
- Parotid mass
- Bilateral palsy - Guillain Barre or multiple sclerosis
- Severe pain- consider Ramsay Hunt syndrome and herpes zoster infection. Vesicles not always present but pain is a feature.
- Bruising, pallor or organomegaly- consider oncological diagnoses
- Hypertension can cause facial palsy and has been a presenting feature of coarctation of the aorta in case reports.

### Indications for specialist referral in patients with apparent Bell’s Palsy

- Any abnormality on otoscopic examination
- Hearing loss
- Associated neurological abnormality
- Single branch of facial nerve involved
- Progression of paralysis beyond 3 weeks
- Recurrent facial nerve palsy
- Antecedent trauma
- Hypertension
- Lymphadenopathy, bleeding manifestations
- Parotid mass
2.4 Investigations

Please see flow chart on page 2.

Generally, if the patient’s presentation is typical and a thorough clinical examination and BP does not reveal any obvious cause, no routine tests are needed to diagnose Bell’s palsy.

Serologic testing for Lyme disease is recommended for all children with acute onset facial palsy when there is the possibility of exposure. Appropriate investigation is recommended wherever malignancy is felt to be a possibility. When trauma or space occupying lesion is suspected, urgent neuro-imaging is recommended.

In patients with Bell’s palsy persisting for more than 3 months, recurrent facial palsy or single facial nerve segment involvement an MRI may be indicated.

If commencing corticosteroids, it is local consensus recommendation to check an FBC beforehand.

2.5 Management

Main principles
The treatment of facial nerve palsy in children is guided by the underlying cause and the severity of the condition. Symptomatic treatment is usually all that is required along with reassurance to the family and patient that the majority of cases resolve spontaneously.

Eye Care
Protect the eye from drying and abrasions with lubricating eye drops (Hypromellose eye drops) plus eye ointment (Lacri-lube eye ointment) and eye patching at night.

Facial Massage
Facial massage and exercises may help prevent permanent contractures (shrinkage or shortening of muscles) of the paralyzed muscles before recovery takes place. Moist heat applied to the affected side of the face may help reduce pain.

Corticosteroids in Bell’s Palsy
Evidence for corticosteroid treatment in children is extrapolated from adult studies.

Treatment should preferably begin within 3 days of symptom onset.

It is recommended to give Prednisolone 2 mg/kg daily (up to 60mg) for five days, followed by a five-day taper.

Herpes
If Herpes virus is a clearly identifiable source (eg. blisters in the ear canal or on the eardrum AKA Ramsay-Hunt syndrome) liaise with ENT, and consider Aciclovir orally in usual doses with Prednisolone as recommended above.
2.6 Discharge advice:

Advise patients/carers to seek medical advice if any of the following develop:

- Red/painful eye
- Progression of weakness after 48 hours
- Different or new symptoms:
- Headache
- Vomiting
- Fever
- Disturbed vision
- Weakness
- Abnormal sensation in another area of the body, head or neck
- No improvement after 2 weeks for GP review

2.7 Follow up:

Local consensus is to refer for General Practitioner review if no improvement in condition after 4-6 weeks.

2.8 Prognosis

The prognosis is based on the aetiology. The prognosis for patients with Bell’s palsy is generally excellent. Nearly all patients demonstrate signs of recovery between 3 weeks to 3 months. 85% recover within 6 weeks and a further 10% recover over a period of months. <5% have permanent palsy and this percentage is not improved by steroid treatment.

**Poor prognostic features:**

- Complete palsy or severe degeneration (on electrophysiology)
- No signs of recovery by three weeks
- Severe pain
- Ramsay Hunt syndrome (herpes zoster virus)
- Associated with either hypertension or diabetes

3. Education and Training

None required to implement this guideline.
4. Monitoring Compliance

<table>
<thead>
<tr>
<th>What will be measured to monitor compliance</th>
<th>How will compliance be monitored</th>
<th>Monitoring Lead</th>
<th>Frequency</th>
<th>Reporting arrangements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use of Steroids</td>
<td>Audit</td>
<td>H Mekki</td>
<td>Annually</td>
<td>Q&amp;S meeting</td>
</tr>
<tr>
<td>Follow Up arrangements</td>
<td>Audit</td>
<td>H Mekki</td>
<td>Annually</td>
<td>Q&amp;S meeting</td>
</tr>
</tbody>
</table>

5. Supporting References


6. Key Words

Facial palsy, Bell’s palsy

CONTACT AND REVIEW DETAILS

<table>
<thead>
<tr>
<th>Guideline Lead (Name and Title)</th>
<th>Executive Lead</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr Gareth Lewis</td>
<td>Mr Andrew Furlong</td>
</tr>
</tbody>
</table>

Details of Changes made during review:
New guideline