Dysphagia: tips to make dental management easier to swallow

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SENIOR DENTAL SURGEON (SPECIAL NEEDS)
HSE LOUTH/MEATH

ISDH Annual Spring Lecture, DDUH
March 2014
Learning Outcomes

- Understand the relevance of dysphagia on oral health
- Overview the evidence-base relating to dysphagia and oral care
- Overview oral care products and evidence-based oral care protocols for patients with dysphagia
- Demonstrate dental management of patients with dysphagia, with case scenarios.
What is Dysphagia?

- Swallowing disorder, usually resulting from a neurological or physical impairment of the oral, pharyngeal or oesophageal mechanisms

- ‘Perception’ of an impediment to the normal passage of swallowed material

- Cluster of symptoms...as a result of an underlying disease or disorder (IASLT, 2012)

www.rcslt.org/speech_and_language_therapy/commissioning/dysphagia
# Common causes of Dysphagia

<table>
<thead>
<tr>
<th>IASLT</th>
<th>Neurological</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Stroke, CP, Brain injury, Parkinsons, MND, MS, Huntingtons, Ms Dystrophy</td>
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<tr>
<td></td>
<td>Anatomical/Structural: Congenital, acquired</td>
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<tr>
<td></td>
<td>Systemic: CF, COPD, Ventilated, Cardiac, GORD, H+N cancer, Chemo/Radio, HIV/AIDS</td>
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<td>Psychological</td>
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- Standards of Practice for Speech and Language Therapists on the Management of Feeding, Eating, Drinking and Swallowing Disorders (Dysphagia) 2012
Incidence of Dysphagia in UK

- Often under-diagnosed
- RCSLT (2009) report dysphagia incidence:
  - 68% with dementia in nursing homes
  - ~78% immediately post-stroke: 76% remain with moderate-severe dysphagia, 15% profound
  - 10% of acutely hospitalised elderly
- 11.4% ‘healthy’ 69-98 year olds, community study (Holland G. et al 2011.)
Incidence of Dysphagia in Ireland

- Stroke: 10000/yr: 15-41%
- Parkinsons: 41% chewing/swallowing problems
- Multiple sclerosis: 33% chewing/swallowing problems
- Intellectual disability with dysphagia:
  - 5.3% community-based
  - 36% hospital-based
Why are we concerned about dysphagia?

- Asphyxiation/ choking episode
- Aspiration incidents
- Dehydration
- Poor nutritional status
- Extended hospital stays
- Reduced quality-of-life
- Anxiety and distress
Recognising signs of dysphagia

- Inability to control saliva: drooling
- Difficulty initiating a swallow
- Coughing
- Choking
- Gurgly/wet voice after swallowing
- Nasal regurgitation
- History of frequent episodes of pneumonia
- Unexplained weight loss
Our role in diagnosing...

To **ASK** those:

- 60+ years +/-
- Neurologic disease +/-
- History head and neck damage

If yes and located:
**REFER** to gastroenterology for multidisciplinary team (MDT) management

Management: Multidisciplinary team led by medical/surgical consultant

- Physiotherapy
- Dentist
- Radiology
- Occupational therapist
- Dietician
- Nurse
- GP
- SaLT
Speech and language therapist:

- Swallow assessments
  - Videofluoroscopic swallow study, fibreoptic endoscopic evaluation of swallowing (FEES)
- Manage positioning
- Swallowing exercises
- Surface electromyography, neuromuscular electrical stimulation
- Diet and liquid modifications
- Information on their oral health
Why should dysphagia worry the dental team?

- Poor oral clearance
- Increased accumulation of plaque/calculus
- Increased susceptibility to dry mouth
- Aspiration risk during dental treatment
- Nutritional supplements may increase caries risk
Oral health of older people with oropharyngeal dysphagia (OD)

- 50 patients OD v 15 patients non-OD (All 73+ years)
- Observational study – Eating Assessment Tool (severity of dysphagia) and videofluoroscopy
- OH assessed: Periodontal dis; caries; OH status; OH habits

Results:
- OD 40% edentate; versus 7% controls
- OD dentate 28/30 periodontitis v 13/14 controls
- OD >50% with caries v 21% controls
- 60% OD clean teeth/dentures once daily

Oral Hygiene Controls v OD (Ortega et al., 2014)

- Slightly poorer OH in OD patients
- Daily toothbrushing improved OH by 50%; reduce aspiration pneumonia
- Small study – needs further multi-centre research
Devising Oral Care Plan in Dysphagia

- Cause of dysphagia
- Identify aspiration risk – whether high-risk
Higher risk dysphagia patients

- With gastric or nasal tubes
- Nil-by-mouth
- On oxygen therapy
- On chemotherapy
- Neuromuscular impairment with swallowing difficulties
- Immunocompromised
Devising Oral Care Plan in Dysphagia

- Cause of dysphagia
- Identify aspiration risk – whether high-risk
- Liaise with healthcare professionals – SaLT and dietician
- Current oral hygiene measures
- Establish oral risk factors...
Higher oral risk factors in dysphagia

CONSIDER patients:

- **Oral nutritional supplementation:**
  - SIG (Wales) Oral Nutritional Supplementation and Oral Health (October 2009)
  - Water after sip feed. Use straw
  - Liaise with dietician

- **Drooling:**
  - If using hyoscine patches: dry mouth effects.

- **Medications with xerostomic effects.**
  - Artificial saliva/saliva stimulating products
Evidence-based oral care guidelines for dysphagia


Recommendations:
1. Oral care assessment on admission
2. Devise individual’s oral care plan
3. Identify individual’s oral health needs
Development of evidence-base

- SIG Wales – Dysphagia and oral health
- Specialist group of dental professionals in special care dentistry
- Due for publication 2014
- Final stages: focus group

- Subdivided:
  - Children
  - Adults
  - High-risk patients
- Mouthcare information
- Oral health risk assessment
- Appendices; algorithms
- Easy-read leaflets for carers
What’s the evidence base for oral care?

- Research predominately ventilated/hospitalised patients
Cochrane systematic review: Oral care in stroke patients

3 studies; N: 470 pts post-stroke

- Oral care not a priority. Few training/care policies in place
- Some nursing staff - strong dislike for oral care.

Recommendations:
- Multidisciplinary approach to supported oral care.
- Further high quality evidence: optimum oral care interventions.

Cochrane systematic review: Oral care for critically ill patients to prevent VAP

- 35 RCTs: 14% low risk of bias
- Trials included: CHX v placebo; toothbrushing v none; powered v manual (1 RCT); oral care solutions

Recommendations:
- Moderate evidence CHX m/w or gel reduce VAP but no evidence for children
- OHC with t/b or without t/b: no difference in VAP
- Weak evidence povidine iodide compared to saline

Toothbrushing for Critically Ill Mechanically Ventilated Patients: A Systematic Review and Meta-Analysis

- 6 RCTs (N= 1408)
- Trials included: toothbrushing v normal oral care; powered v manual toothbrushing

Recommendations:
- Toothbrushing v non-t/b lower VAP but
  - Mortality: 29% v 31%: not significant. No effect on ICU stay
- Electric v manual –
  - VAP 40% v 42% - not signif.
- ?CHX: study with low bias

All conclude - Training the staff.

In dependent patients:

- Facilitate oral hygiene (Caring for Smiles – guide for trainers (NHS Scotland))

- Appropriate oral hygiene: disturb the biofilm and reduce incidence of VAP. Needleman et al. (2011)

- Oral care protocols readily available on ward/ nursing home – though may not be followed Rello et al. (2007)
Oral hygiene provision – evidence-base

- Positioning
- Toothbrushing
- Oral soft tissues
- Lips/mucosa
- Denture cleaning
SLS-free toothpastes:
Not exhaustive list

**Biotene fresh mint; gentle mint preferred**

<table>
<thead>
<tr>
<th>SLS Free Toothpastes</th>
<th>Age group</th>
<th>Fluoride concentration</th>
</tr>
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<tbody>
<tr>
<td>Aquafresh Children Little Teeth</td>
<td>Over 3 years</td>
<td>1400ppm</td>
</tr>
<tr>
<td>Pronamel</td>
<td>Over 3 years</td>
<td>1450ppm</td>
</tr>
<tr>
<td>Sensodyne Gum Protection</td>
<td>Over 3 years</td>
<td>1450ppm</td>
</tr>
<tr>
<td>Bioxtra</td>
<td>Over 3 years</td>
<td>1450ppm</td>
</tr>
<tr>
<td>OraNurse Unflavoured</td>
<td>Over 3 years</td>
<td>1450ppm</td>
</tr>
<tr>
<td>Ultradex</td>
<td>Under 3 years</td>
<td>1000ppm</td>
</tr>
<tr>
<td>Biotene</td>
<td>Under 3 years</td>
<td>1000pmm</td>
</tr>
<tr>
<td>Kin Gingival</td>
<td>Under 3 years</td>
<td>500pmm</td>
</tr>
</tbody>
</table>
Anti-calculus toothpastes:

- Tetrapotassium/tetrasodium pyrophosphate
- Sodium hexametaphosphate
- Zinc compounds
- Triclosan, copolymers

Not exhaustive list

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<tr>
<th>Anti-tartar toothpastes</th>
<th>Anti-calculus agent</th>
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<tr>
<td>Aquafresh tartar-control whitening</td>
<td>Tetrapotassium/tetrasodium pyrophosphate</td>
</tr>
<tr>
<td>Sensodyne Tartar-control plus whitening</td>
<td>Tetrapotassium/tetrasodium pyrophosphate</td>
</tr>
<tr>
<td>Oral B Pro-expert Whitening/All-round protection</td>
<td>Sodium hexametaphosphate</td>
</tr>
<tr>
<td>Oral B Proexpert Sensitive toothpaste</td>
<td>Sodium hexametaphosphate</td>
</tr>
<tr>
<td>Sensodyne Total Care</td>
<td>Zinc compounds</td>
</tr>
<tr>
<td>Colgate Total</td>
<td>Triclosan, copolymers</td>
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Patients with dysphagia:
Aspirating toothbrush
Non-foaming fluoride toothpaste

Caries-risk: High fluoride toothpaste: 1.1%/0.619%.
(Both contain SLS - 1.1% contains less)

Chlorhexidine gluconate gel 1%/spray 0.2%

NOT mouthwash
# Dental adjuncts

## Toothbrushes for patients with limited cooperation
- Dr Barman’s superbrush
- Dr Barman’s duo-power sonic toothbrush
- Collis-Curve toothbrush

## Finger protection
- Dental shield
- Open wide disposable mouth rest
Aspirating toothbrushes:
Kimberly-Clark Kim Vent: Ready care oral care

OroCare 2

Sage: Suction toothbrush: 100 case quantity

Plaq-Vac: online ordering.
Critical care

Three systems:

Kim Vent Oral care kit: Q2 (two-hourly) or Q4 (four-hourly) and Ready Care Oral care.

Coloured coded plan:

Purple: suction toothbrush

Green: suction swab H₂O₂

Blue: suction swab with alcohol-free mouthwash.

SINGLE-USE.
Sourcing suction toothbrushes

- Kimberly-Clark Kim Vent: Ready care oral care:
  Distributor: TECHNOPATH, Fort Henry Business Park, Ballina, Co Tipperary
  Tel: 061-335844
  Email: info@techno-path.com

- OroCare 2/OroCare Aspire suction tooth brush (no irritation)/OroCare
  Sensitive oral suction wand
  Distributor: IntraVeno T/A Aquilant Medical, Aquilant House, 21 Fonthill Business Park, Fonthill Road, Clondalkin, Dublin 22
  Tel: 01 404 8307
  Email: Miriam.Boltt@aquilantservices.com


Dysphagia and dental treatment

General:

- Risk assess - ? High-risk
  - Specialist referral
  - Specific prescription for DCPs
- Upright position
- Chin-tuck position, if safe
- Rests/breaks
- Discuss patient control techniques
- Regular communication
Intraoral:

- Protect airway – rubber dam
- High volume suction
- Salivary ejector throughout treatment
- Reduce water flow to fast handpiece
- Increased use of slow handpiece, carisolv, ART
- Fast-setting dental materials
- Avoid excess material
- Avoid overfill impression trays
- Hand scaling rather than ultrasonic scalers
Dysphagic-specific dental risk assessment

Dysphagia dental risk assessment form

- Part of SIG-Wales guideline appendices
- Further development with SaLT colleagues
- Due for piloting and publication in 2014
Evidence-based recommendation

Special Needs:

- Regular dental checks
- High fluoride toothpaste: Sodium fluoride 1.1% twice daily
- 3 monthly fluoride varnish application

Department of Health –

Dental Health Foundation –
No specific guidance for oral care in dysphagia
Case Examples
Advanced Huntingtons

Dysphagia - high risk of aspiration

Peg-fed

Prescription 3/12 handscaling with hygienist

Calculus – to leave or not?

Oral hygiene demo to support staff – using Biotene and Corsodyl gel

Oral Suction 2 hourly

• Dental management – www.huntingtons.ie
Advanced Huntingtons

Dysphagia - high risk of aspiration
Peg-fed
Prescription 3/12 handscaling with hygienist
Calculus – to leave or not?
Oral hygiene demo to support staff – using Biotene and 1% CHX gel
Oral Suction 2 hourly

Positioning

Aspirator – suction (Storage + daily disposal)

Aspirating toothbrush – SLS-free toothpaste

Oral moisturising-water-based lubricant
Advanced Parkinsons

Dysphagia - low risk

Upright for treatment – chin tuck position

Moderate gag reflex – nitrous oxide

Toothbrushing assistance – electric t/brush

Rubber dam – composites

Handscaling

Care with impressions - overfill

• Dental management – www.parkinsons.ie

Parkinson Disease: Systemic and Orofacial Manifestations, Medical and Dental Management
Arthur H. Friedlander, Michael Mahler, Keith M. Norman and Ronald L. Ettinger
JADA 2009;140(6):658-669
Advanced Parkinson's

Dysphagia - low risk

Upright for treatment – chin tuck position

Moderate gag reflex – nitrous oxide

Toothbrushing assistance – electric toothbrush

Rubber dam – composites

Hand scaling

Care with impressions - overfill

Positioning -

Chlorhexidine gel (1%) for oral tissues

Electric toothbrush – NaF 1.1% toothpaste

Denture cleaning
Role of dental team (Logemann et al., 2013)

- Maintaining functional units
- Manage chewing issues
  - Mucositis
  - Xerostomia (sensory changes)
  - Dental/oral tissue disease
- Maintaining oral health:
  - Good information on assessing not delivering
- Education MDT team
  - Expert opinion:
    Poor oral care $\rightarrow$ aspire oral bacteria $\rightarrow$ aspiration pneumonia
  - Optimal ways for caregivers in homes/healthcare settings to maintain optimal oral health
Conclusions

- Importance of developing nationally recognised evidence-based dysphagia oral care protocol, involving MDT.

- Further multi-centre research on oral care best practices for patients with dysphagia

- Establish the dental team within the MDT dysphagia care pathway in Ireland


19th and 20th June, 2014

ISDH
Irish Society for Disability & Oral Health

ISDH Summer Conference, Limerick