The Impact of Advanced Primary Progressive Multiple Sclerosis for the Older Patient

Miss Jessie E Tebbutt

Specialty Trainee Registrar in Special Care Dentistry at Somerset NHS Foundation Trust and Chief Dental Officer's Clinical Fellow at Health Education England

Introduction

Multiple sclerosis (MS) is a complex chronic neurological condition. Affecting sensory and motor nerve transmission, symptoms and progression are unpredictable, varying between individuals and over time. MS affects over 130,000 people in the UK[1].

Primary progressive MS (PPMS) demonstrates continual worsening of an individual's condition. Advanced cases may be characterised by limb paralysis, reduced muscle tone and impaired cognitive function as well as several orofacial features[1]. This has significant implications for maintaining oral health and for dental management.

An increasingly multidisciplinary approach involving the patients, their primary care givers and any other involved healthcare professionals is required. Maintaining oral health is key, as it may impact on overall health and quality of life.

Case Report

Medical History

Primary Progressive MS – advanced

Depression

PEG-fed (Dysphagia)

Wheelchair user – unable to transfer

Allergy: penicillin

Medications:

Mirtazepine

DNAR

Social History

Never smoker

No alcohol

Lives with husband – registered carer and LPA Health & Welfare

Female 75

Dental History

Brushing weekly with ETB by husband

Fluoride toothpaste

No interproximal cleaning

Occasional Corsodyl mouthwash

Has food/tasters frequently – generally whatever husband is having e.g. meat, vegetables – small pieces

Previously regular attender at GDP – took care of teeth

Husband reports several years ago patient requested all amalgam restorations replaced due to concerns over effects on progression of MS.

New Patient Appointment

CO:
1. Concerned about cleaning wife's teeth
2. Gums look particularly red – infection?

HPC:
Husband reports his wife doesn't let him anywhere near her and repeatedly pulls away. Not sure how long this behaviour has been going on – not a recent change. Carers unable to brush teeth.

Limited verbal/non-verbal communication – husband tends to speak on her behalf as can read her best. Limited cooperation at initial examination; allowed examination for short periods.
Hunched position in chair with significant lean to the left side. Head repositioning and support required.

Extraoral:
TMJ, MoM, Lymph nodes, Lips: all NAD.

Intraoral:
Soft tissues: tongue, floor of mouth, buccal mucosa, palate: all NAD
Saliva: healthy quantity and quality
Gingivae: generalised marginal erythema esp. lower anterior, swollen/enlarged appearance lower anterior region with severe overcrowding. Haemorrhagic. BOP+++.
Nil swelling or sinuses present.
Oral Hygiene: poor - generalised debris/plaque deposits but nil significant calculus deposits noted
BPE: not recorded initially - allow time for improved OH as likely lots of false pocketing. To be recorded at next recall/review appointment.
Mobility: nil mobility
TTP: nil TTP or tenderness on palpating teeth (watching for reaction/sign for each tooth)

Tooth charting:

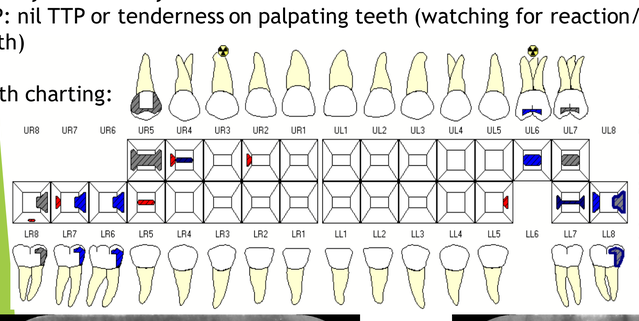

Figure 1: Tooth charting at initial assessment appointment. A number of mobile defective restorations were identified and well as severe overcrowding in the lower labial segment. A prominent wear facet was present on the occlusal surfaces of the UR4 and LR4.

Figure 2: Right bitewing. G1/Acceptable. Generalised horizontal bone loss with furcation bone loss/widening LR876. LR8 mesial deficiency, LR7d radiolucency/deficiency, LR6m deficiency. LR5do radiolucency – close proximity/superimposed on canal. UR5md radiolucency/deficiency. UR4do radiolucency.

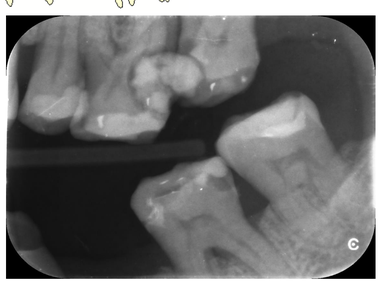

Figure 3: Left bitewing. G1/Acceptable. Generalised horizontal bone loss with furcation bone loss/widening LL7 and UL6. UL6/UL7 appears to be large interproximal restoration with peripheral radiolucency (clinically mobile). Close proximity to pulp chamber UL6. LL7d deficiency.

Diagnoses

1. Chronic generalised periodontal disease - stage III grade B. Unstable. Risk factors: suboptimal OH, genetic predisposition.
2. Localised tooth surface loss: UR4o LR4o – attrition?
3. Broken restorations: UL6, UL7, LL5, LL7, LR8, LR7, LR6, LR5.
4. Caries: UR2d – non-cavitated

Provisional Stabilisation Treatment Plan

1. Prevention:
Oral hygiene education and support with husband/carers.
Fluoride application: Duraphat varnish, prescribe Duraphat 5000ppm toothpaste.
Corsodyl 1.0% oral gel (to be used at a different time to brushing).
Diet advice.
2. Stabilisation:
Full mouth hand scale.
ART restorations to stabilise until improved oral hygiene/gum health and retain teeth until extraction indicated.
Decision to not XLA UL6 at this point after discussion – no signs of pain noted by husband and concern over anxiety and inability to tolerate as has been some time since last dental attendance. Challenging positioning/access. Agreed to try simpler tx first and re-visit this option.
Review UR2d – with improved oral hygiene likely to stabilise.
3. Recall:
3/12 review with Dental Therapist/Hygienist
6/12 review with Dentist – reattempt LCPAs of poor prognosis teeth and further discussion re: UL6.

Challenges to Providing Treatment

1. Access
Wheelchair user - hunched position, leaning to one side.
Difficulty with mouth opening and examining intraorally.
2. Communication
Extremely limited ('no' – informed this is a favourite word).
Limited verbal communication not related to current conversations.
No clearly identified mode of alternative communication - husband present at all times as he can 'read' her.
3. Capacity
Functional limitation and unable to demonstrate understanding, retaining, weighing up and communicating decisions.
4. Risk of dysphagia
PEG-fed - awaiting further SALT assessment/input.
Husband not aware of any current swallowing concerns.
5. Fatigue
Low tolerance of long appointments.
Need for frequent pauses.
6. Reliance on third party for personal care
Lack of confidence on delivering OH by primary care giver.
Lack of awareness around cleaning teeth/checking for food debris after tasters. Increased risk of both periodontal disease and caries – linked to reduced clearance of food debris.
7. Competing priorities
Other health and social care visits.
Primary care giver has health concerns of their own.
Living with a progressive neuromuscular condition, depression and increasing frailty.

Overcoming Challenges

1. Access
Specialist equipment including wheelchair tipper.
New reclining wheelchair planned which will assist positioning.
Additional cushion support and repositioning.
Mouth prop to assist in opening. Frequent gentle reminders to open.
Frequent pauses.

2. Alternative Communication
Thorough discussion with husband as to communication needs.
Husband can 'read' patient and 'just tell' if she is in agreement, getting tired or isn't happy.
After multiple visits, noted non-verbal cues hinting at responses. Ensured all conversations directed at patient with clear eye contact. Looked for non-verbal cues - checked interpreted responses with husband.
Reassured by husband at later visits she is happier attending and likes the team.

3. Capacity
Assessment and Best Interest Decisions made together with husband and patient.
Established attitudes towards dental health and retaining natural teeth (takes pride in her teeth/appearance).
Re-checking of consent with husband and patient at every visit – ensured continual patient involvement.

4. Dysphagia
Ensure semi-reclined for treatment.
Double suction/high volume suction used. Avoided USS.
Consider non-foaming toothpaste – although in this case high fluoride more of a priority.

5. Education and continuing support
Tell Show Do approach with husband of brushing techniques with ETB – demonstrations of positioning and head support. Consider aspirating TB?
Frequent checking-in and feedback from husband of how he feels he is managing and addressing any concerns.
OHE supported by dental hygienist & therapist.

6. Flexibility
Regular appointments.
Keeps appointments to late morning/early afternoon where possible.
Skill mix with dental hygienist & therapist.
Preventative focus each appointment. Advice in line with DBOH[2].
Empathic, caring and inclusive approach.

Appointments

New Patient Assessment
Limited initial examination in wheelchair – tipper not available.
Frequent pauses.
MTB showing positioning behind patient, supporting head and brushing technique.
Supported husband in practising brushing technique – patient visibly more relaxed and verbal by appointment end.
Prescription of Duraphat 5000ppm toothpaste and Corsodyl 1.0 % Oral Gel.

Appointment 2: Oral Hygiene Education with Hygienist
Hand scale and polish with suction.
Full mouth toothbrushing – review of partners technique.
Noted significant food debris – identified need for brushing after meals and in evenings before bed.

Appointment 3
Examined in wheelchair tipper. Bitewings taken - unable to take LCPA UL6.
MCA – Consent Form 4 completed with partner as LPA Health & Welfare.
Decision to try tx without sedation initially to see how well its tolerated.
ART stabilisation of LR5, LR8, LR6.

Appointment 4 - 6
Partner reports improved confidence in OH and acceptance.
Improvements in OH noted. Demo'd and observed single tufted brush use.
Further ART stabilisation of UL6, UL7, LL5, LL7.
Limited hand scale of lower teeth.
Double suction. Mouth prop with frequent pauses. Additional head support.
Duraphat varnish all teeth.

Recall 3/12 with Dental Hygienist. 6/12 with Dentist.
Review of partner's OH technique and adjustment where necessary.
Continued support with OH.
Poor prognosis UL6 under close review for development of signs/symptoms.
Consider domiciliary visits for reviews if patient condition deteriorates and clinical attendance becomes increasingly challenging.
Tailored recalls due to high risk periodontal disease and caries.

Future Considerations

1. Continued disease progression
PPMS is characterised by gradually increasing disability with increasing symptoms including motor weakness, fatigue as well as other co-morbidities associated with increasing age. In the future may no longer be able to be cared for at home and need to be cared for within a residential/nursing home setting. Treatment planning should take this into account.

2. Stabilisation and prevention
Focus on preventative rather than interventional dentistry to stabilise dental and periodontal condition via shared decision making with patients husband. Regular hygiene appointments required. Use of skill mix with dentist and dental hygienist/therapist. Risks associated with potentially complex extractions in frail older person vs. risk of retaining and developing infection which may influence MS symptoms[1].
Discussion of risk vs benefit with those involved in patients care.

3. Need for sedation
Development of spasms or tremors in the future may interfere with safe delivery of treatment[3]. May indicate need for sedation or GA in order to provide dental treatment safely.
This could have implications for treatment setting – may need to be managed in hospital due to potentially challenging airway management.

4. Multidisciplinary approach
Liaison with healthcare professionals involved in patents future care including SALT, Community Neurology Service and GMP to ensure safe and appropriate care moving forwards.

5. Domiciliary care
Domiciliary care will facilitate more frequent reviews when not in active treatment for this patient. Further progression of condition may mean regular clinical attendance becomes more challenging for both patient and husband. Domiciliary provision will support access for care and allow continued support for carer team.

Conclusion

A more holistic flexible approach together with reasonable adjustments is essential to allow safe acceptable provision of care for older patients living with advanced stages of conditions such as PPMS.

This case highlights the significant challenges and adjustments/considerations required in particular for this patient group and the dental teams who manage them. A supportive, inclusive approach developed a form of rapport with this individual, building her confidence in the dental team.

Educating and empowering her primary care giver was essential in providing effective dental care and ensuring preventative oral health behaviours were embedded at home. Utilising dental skill mix in this was vital.

Use of shared decision-making[4] with those closely involved in their care and knowledge of previously held beliefs and attitudes, supports patients in maintaining oral health and planning for the future.

References

1. Patel J, Prasad R, Bryant C, Connolly H, Teasdale B, Moosajee S. Multiple sclerosis and its impact on dental care. British Dental Journal. 2021 Sep;231(5):281-6. 2. Public Health England. Delivering Better Oral Health: an evidence-based toolkit for prevention [Internet]. PHE; 2014: Updated 2021 [cited 2021 Nov]. Available at: https://www.gov.uk/government/publications/delivering-better-oral-health-an-evidence-based-toolkit-for-prevention. 3. Fiske J, Griffiths J, Thompson S. Multiple sclerosis and oral care. Dental update. 2002 Jul 2;29(6):273-83. 4. 5. National Institute for Health and Care Excellence. Shared decision making [Internet]. [London]: NICE; 2020 [cited 2021 Nov]. (Clinical guideline in development). Available at: https://www.nice.org.uk/about/what-we-do/our-programmes/nice-guidance/nice-guidelines/shared-decision-making.