

THE ORAL PHYSICIAN

PART III



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This is part III of the discussion of the oral physician and will detail the approach to patient management.

Dentists are already skilled in the assessment of many systemic diseases. Part III will focus on the stages considered essential for comprehensive case evaluation and treatment. Broadly, six steps will be reviewed.

- Health and Examination
 - Crisis Management and Stabilisation
 - Prevention and Disease Control and Initial Restorative Treatment
 - Re-evaluation (Aesthetic Analysis, Occlusal Analysis)
 - Comprehensive Definitive Restoration
 - Monitoring and Maintenance/Recall
- The first two steps will be reviewed in this article.

A. HEALTH AND EXAMINATION

- ◆ Health History Form – Dental Information & Medical Information
- ◆ Clinical examination to detect abnormalities of soft/hard tissues
- ◆ Implication of Systemic drugs in Dentistry
- ◆ Xerostomia
- ◆ Sleep Bruxism and Obstructive Sleep Apnoea

Health History Form – Dental Information & Medical Information

- ◆ Collect and collate information – dental, medical, psychological, social, financial. Both the dentist and the patient are encouraged to discuss any and all relevant health issues prior to treatment (Gurenlian, J.R. and Pickett, F.A.).
- ◆ Any treatment plan must include short-term, medium-term and long-term goals (Newsome P. et al, 2012).
- ◆ Obtain fully informed consent with written records before any treatment is commenced (Kalsi JS, Hemmings K., 2013).

Clinical examination to detect abnormalities of soft/hard tissues

<https://www.dentistry.utoronto.ca/dpes/diagnostic/patients/extraoral-and-intraoral-soft-tissue-examination-patient>

Extraoral head and neck examination

- ◆ Asymmetries – check for previous surgeries, scars, tumour and infections.
 - ◆ Lymph node examination – include base of skull, under jaw and chin, neck and area above collar bone.
 - ◆ TMJ examination – note tenderness, swelling or redness
- NB. Any abnormality seen should be noted re type, size, colour, location, surface texture and consistency of the abnormality.

Intraoral soft tissue examination

- ◆ Lips and labial mucosa
- ◆ Buccal mucosa and vestibular mucosa

- ◆ Hard and soft palate
- ◆ Tongue – oral cancers may have appearance of ulcers, masses, red or white areas.
- ◆ Floor of mouth
- ◆ Gingiva and alveolar mucosa
- ◆ Note common oral pathologies:
 - Geographic tongue
 - Benign vascular lesions – usually seen in older patients.
 - Morsicatio buccarum – ie cheek biting and appears as ragged, slightly translucent area.

Implication of Systemic drugs in Dentistry

The reader is referred to the following text – “SYSTEMIC DRUGS INTERACTING WITH COMMONLY USED DENTAL DRUGS” (Malamed S, 2015).

Xerostomia

A full discussion of Xerostomia is found at:

http://www.scdlab.com/files/articles/ad58_xerostomia_part1.pdf
<http://www.scdlab.com/files/articles/Xerostomia%20Part%202.pdf>

Sleep Bruxism and Obstructive Sleep Apnoea

Sleep bruxism (SB) is considered a common sleep-related motor movement disorder.

American Academy of Sleep Medicine (AASM) Clinical Diagnostic Criteria for Sleep Bruxism:

Patient history: Recent patient, bed partner, parent, or sibling reports tooth-grinding sounds occurring during sleep for at least 3 – 5 nights per week in the last 3 – 6 months.

Clinical evaluation

Signs and symptoms:

- ◆ Abnormal tooth wear
- ◆ Hypertrophy of the masseter muscles on voluntary forceful clenching
- ◆ Discomfort, fatigue, or pain in the jaw muscles (and transient, morning jaw-muscle pain and headache)
- ◆ Jaw-muscle activity cannot be better explained by another current sleep disorder, medical or neurologic disorder, medication use, or substance use disorder.

How is Obstructive Sleep Apnoea Diagnosed and Evaluated?

- ◆ History and Physical Examination – examine the areas of possible airway collapse.
- ◆ Dental examination (<http://www.sleep.org.au/documents/item/574>)

Patients now require collaborative input from dentists, sleep specialists and ear, nose and throat (ENT) physicians. The dentist must work in conjunction with the sleep physician.

Teeth show many attributes that identify patients as having a Sleep Breathing Disorder – bruxism, erosion (which shows evidence of Gastro Oesophageal Reflux Disease or GORD), scalloped tongue and other intraoral changes.

Objective Evaluations

The primary objective test for obstructive sleep apnoea is Polysomnography. <http://healthysleep.med.harvard.edu/sleep-apnea/diagnosing-osa/testing>

B. CRISIS MANAGEMENT AND STABILISATION

- ◆ Manage acute conditions
- ◆ CAMBRA – Caries Diagnosis by Caries Risk Assessment
- ◆ Assessment of Toothwear
- ◆ Periodontal evaluation
- ◆ Radiographic Evaluation
- ◆ Clinical Examination of Restorations
- ◆ Occlusal Analysis
- ◆ Planning for Implants

Manage Acute Conditions

- ◆ Resolve acute pain, bleeding, hard and soft tissue infections.
- ◆ Consider exodontia for irreversible root fracture, hopeless prognosis for periodontally involved teeth, retained roots.

CAMBRA (Caries Management by Risk Assessment) identifies the causes of dental disease by assessing the degree of risk that an individual faces and targets the cause of caries, periodontal disease, recession and xerostomia for the prevention of tooth loss for the primary and secondary dentition (Yanase Roy T. and Le, H.H., 2014).

Caries Risk Assessment (Yip K. and Smales R., 2012)

Consider:

- ◆ Contributing conditions – fluoride exposure, diet, caries experience of family, lifestyle
- ◆ General health conditions – special care needs, chemotherapy, radiation therapy
- ◆ Clinical conditions – visible plaque, overhangs, cavitated/non-cavitated carious lesions
- ◆ Caries diagnosis – visual, tactile (ICDAS), transillumination, laser and blue light, radiographs, chemical examination

ASSESSMENT OF TOOTHWEAR (Mehta S.B. et al., 2012)

Erosion (Ranjitkar S. al., 2012)

- ◆ Chemical dissolution of tooth structure without the presence of plaque
- ◆ Sources of acids start from inside the body as gastric acid (intrinsic or endogenous erosion) or outside the body as dietary, environmental or occupational acids (extrinsic or exogenous erosion).
- ◆ Frequency of acid exposure determines severity or extent of the problem.

General erosive patterns observed clinically are:

- ◆ Vomiting – palatal surfaces of all upper teeth are affected most. Over time, most tooth surfaces are affected.
- ◆ GORD – usually affects palatal surfaces of upper posterior teeth.
- ◆ Rumination – refluxate enters the mouth and is chewed. A generalised pattern is evident especially on occlusal tooth surfaces.
- ◆ Burping – moist “acidic air” enters the oral cavity. Affects palatal surface of upper teeth and other surfaces can be affected.
- ◆ Dietary – eg eating lemons – affects palatal surfaces of upper anterior teeth.

Signs:

- ◆ As erosion progresses, teeth lose normal contours and curved enamel areas flatten and eventually become “dished out” especially buccal and labial surfaces of tooth crowns.

Prevention

- ◆ Eliminate acidic aetiologic agent – soft drink, wine, pickled vegetable.
- ◆ Rinse with water during known times of acid exposure – eg. after bulimic episode.
- ◆ Various remineralising products – fluorides, casein-derived pastes with Recaldent (CPP-ACP)
- ◆ Low dose fluoride mouthrinse used 3X/day or regular placement of bead of fluoridated toothpaste on the tongue and spread around the mouth without rinsing are useful. Use of 1.23% acidulated phosphate fluoride is also effective.

Attrition

- ◆ Wear that occurs from tooth-to-tooth contact without the presence of food.
- ◆ Occurs from tooth grinding either nocturnally while asleep or diurnally.
- ◆ Some craniomandibular types are predisposed to certain patterns of occlusal wear.

Signs

- ◆ Enamel flaking on labial incisal edges of upper teeth and lingual incisal edges of lower teeth
- ◆ Buccal cusps of upper and lingual cusps of lower posterior teeth predominantly fracture.
- ◆ “Facet” – flat area with well-circumscribed border and will have matching facet in the opposing arch.
- ◆ Symptoms of various craniomandibular disorders

Prevention

- ◆ Night splint
- ◆ Stress management
- ◆ Apply Tooth Mousse as a lubricant over occlusal enamel and dentine.

Abrasion

- ◆ Occurs by friction of anything foreign to the tooth forced over the surfaces of the tooth.
- ◆ Wear from food abrasion is usually distributed throughout the arch.
- ◆ Common cause is overzealous tooth brushing – rounded or “V” shaped ditches on buccal/labial surfaces – canines and premolar teeth are commonly affected.
- ◆ Parafunctional activity – chewing end of pen, chewing pipe stem, etc

Signs

- ◆ Abrasion from foreign objects – tobacco pipe stems, bobby hairpins, hard foods (pumpkin seeds, watermelon seeds) is often identified by asymmetric wear as a notch on the anterior teeth.
- ◆ Scooped dentine on incisal and occlusal surfaces especially if exposed dentine is not sensitive may be caused by abrasion.

Prevention

- ◆ History will identify abrasive dentrifices, foods, foreign objects, habits.
- ◆ Make patient aware of the problem.
- ◆ Restore full complement of occluding teeth.

PERIODONTAL EVALUATION

Periodontal Probing Assessments and Methods (Wong R. et al., 2012)

- ◆ Bleeding on probing (BOP)
 - Presence of BOP indicates the presence of gingival inflammation.
 - Bleeding sites seem to have increased risk for progression of periodontitis especially when the same site bleeds at repeated evaluations over time.
- ◆ Probing depth and loss of attachment: Clinical probing is the most commonly used parameter both to document loss of attachment and establish a diagnosis of periodontitis.

Periodontal Record Keeping

The basic BPE/PSR (Basic Periodontal Examination and periodontal screening and recording index) identifies the presence/absence of disease and screens for periodontal treatment needs.

If BPE/PSR and/or initial visual assessment indicate a severe periodontal condition, a complete charted recording of periodontal findings should be documented – BOP, PPD, Recession, Clinical Loss of Attachment (at 6 points/tooth), furcation involvement, tooth mobility, suppuration on probing and drifting.

Goal Setting for Periodontal Therapy (Corbet E. and Smales R., 2012):

- ◆ Attain a high level of plaque control – full mouth bleeding on probing scores below 20-25%. The absence of bleeding on probing over repeated examinations is the best indicator of periodontal stability currently available.
- ◆ Probing pocket depths of no greater than 5 mm including horizontal probing in furcations of less than 5 mm.
- ◆ Tooth mobility does not impair patient's plaque control efforts.

Radiographic Evaluation

Identify patient type:

- ◆ New
- ◆ Recall with clinical caries or increased risk for caries
- ◆ Recall with no clinical caries and not at risk for increased risk of caries
- ◆ Recall with periodontal disease
- ◆ Patient for monitoring growth and development
- ◆ Patient with other circumstances including but not limited to, proposed or existing implants, pathology, restorative/endodontic needs, treated periodontal disease and caries remineralisation.

Identify Age of Patient:

- ◆ Primary Dentition (before eruption of first permanent tooth)
- ◆ Transitional Dentition (after eruption of first permanent tooth)
- ◆ Adolescent with permanent dentition (prior to eruption of wisdom teeth)
- ◆ Adult, Dentate/partially edentulous
- ◆ Adult Edentulous

Clinical Examination of Restorations

Generally, a restoration should not be replaced unless: (Anusavice K., 1988)

- ◆ There are significant marginal discrepancies.
- ◆ Tooth is at risk for caries or fracture.
- ◆ The restoration is an etiologic factor to adjacent teeth or tissue.

Occlusal Analysis (Yip K. and Smales R., 2012)

Occlusion refers to the functional and dysfunctional relationships between all components of the masticatory system.

Determinants of Occlusion

- ◆ Posterior (condylar) guidance – This is a fixed anatomical factor that cannot be controlled by the dentist.
- ◆ Anterior (incisal) guidance – can be designed by the dentist.
- ◆ Arrangement and morphology of the teeth – can be designed by the dentist.

Extraoral Assessment

- ◆ Place patient semi-supine.
- ◆ Get patient to slowly open/close mouth. Note centre-line mandibular deviations, restricted movements and TMJ noises.
- ◆ Ask patient to make non-guided lateral and protrusive movements. Bite together gently and then do slow protrusive and lateral movements with teeth in light contact. Is there fremitus/muscle tremor?

Intraoral Assessment

- ◆ Examine teeth, periodontal tissues and alveolar bone to check for occlusal instability and adverse responses to increased occlusal mechanical stresses (cracked/chipped teeth and restorations, split cusps, heavy tooth and restoration wear facets, mobile teeth, tooth migration).
- ◆ Occlusal discrepancies are a predictor for deeper pocket depths and greater tooth mobility in the presence of existing inflammatory periodontal disease.

Planning for Implants (Boyce RA, Klemons G., 2015)

"Treatment planning for restorative implantology should be looked at in 4 sections. By using these 4 concepts of treatment planning along with proper surgical placements of implant(s) results in successful cases.

- ◆ Review of past medical history
- ◆ Oral examination and occlusion
- ◆ Dental imaging (ie. Cone-beam computed tomography)
- ◆ Fixed versus removable prosthodontics". ◆

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