

CLINICAL CASES SERIES

Clinical Cases in Dental Hygiene

Edited by Cheryl M. WestphalTheile,
Mea A. Weinberg, and Stuart L. Segelnick



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Clinical Cases in Dental Hygiene

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Our thanks go in general to the contributing authors, all who hold or have held affiliations with the New York University College of Dentistry Dental Hygiene, Undergraduate or Graduate programs. Without the dedication of these authors the cases could not have been developed to the expertise and application to practice they now provide. We also sincerely thank the patients and case stories reflected in these chapters as well as the permission to share the images to illustrate the content so vividly. All efforts combined to generate telling information that highlights the critical thinking and evidence-based care needed in all of our dental healthcare delivery systems.

We dedicate this book to those who quest for knowledge, seek evidence to base sound decisions, and strive to improve the quality of the care we provide.

On a personal note I wish to dedicate this book to my husband, Keith Theile, who shared many hours in this book preparation and to my three sons, James Westphal, Erik Westphal, and Jeffrey Theile, for whom I always impart that learning never stops.

Cheryl M. Westphal Theile

I dedicate this book to my family, especially my parents who gave me the desire to write.

Mea A. Weinberg

This book is dedicated to both my mother Harriet Segelnick and my father in law Milton "King" Finkelstein. They left this world way too soon, but made major impacts in my life. It would be superfluous to say without my mother I wouldn't be the dentist that I am. At this very moment, my mother is probably telling everyone in heaven of her son's accomplishments and the "King" would be just as proud.

Stuart L. Segelnick

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PREFACE

Clinical Cases in Dental Hygiene is the work of many established professionals affiliated in some way with New York University College of Dentistry dental and dental hygiene programs. The goal of this series published by John Wiley & Sons, Inc. is to present current dental topics in a case-based format with critical thinking and problem-based learning questions. The book is designed to provide clinical cases relating to dental hygiene practice. Included with each case are problem-based learning objectives followed by self-study questions and take-home hints that are elaborated answers of the self-study questions. This book will bring together what the dental hygiene student learned in school in a case-based

format that stimulates independent thinking. This book covers all essential concepts within the scope of dental hygiene practice.

Clinical Cases in Dental Hygiene can be used as a textbook to prepare for the written boards and also as a reference book in dental hygiene practice. Group activities can focus on discussing the major points raised in the study questions or self-directed study on the major topics. The dental hygiene diagnosis and care plan are the focus of many of the cases to help guide the reader to the planned interventions and expected outcomes. Some authors have included background or additional reading resources to add to the discussion of each topic.

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Patient Examination

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Case 1

Examination and Documentation

CASE STORY

A 55-year-old Caucasian female presented with a chief complaint of: “My mouth is always dry, and I have difficulty swallowing.” She said, “I was recently diagnosed with scleroderma, and my doctor told me I should see a dentist.” The vital signs were blood pressure: 159/92 mmHg; respiration: 16 breaths/min; pulse: 72 beats/min, temperature: 98°F; and nonsmoker.

PROBLEM-BASED LEARNING GOALS AND OBJECTIVES

- Discuss the role of the patient’s medical, social, and dental histories (comprehensive health history) in the patient examination
- List and describe the five parts of a comprehensive clinical examination
- Differentiate between types of findings in a clinical examination including signs and symptoms, and significant and insignificant findings
- Discuss the definition, purpose, and methods of documentation
- Identify the components of care documented in the patient’s permanent record

Medical History

The patient was diagnosed with scleroderma and gastroesophageal reflux disease (GERD). She is taking antacids for GERD and immunosuppressant medications and a calcium channel blocker for scleroderma.

Dental History

The patient reported that her last dental visit was one year ago. She has a history of childhood caries but has been caries free since college. Also, she has symptoms of dry mouth and difficulty opening her mouth and swallowing.

Social History

The patient is a self-described over-achieving professional concerned about her health and the appearance of her teeth. She lives with her husband in a suburb of Manhattan, has three adult children, and enjoys reading.

Review of Systems (Physical Examination)

Gastrointestinal Examination

The patient has difficulty swallowing (dysphagia) and GERD.

Cardiovascular Examination

The patient has a history of Raynaud’s phenomenon and hypertension (BP: 159/92).

Cutaneous Examination

The patient stated that her fingers are extremely sensitive to the cold. The skin of her hands appeared shiny and stretched with varying degrees of pigmentation. The patient struggled to hold the pen while signing consent forms.

Head and Neck Examination

Extraoral

The patient exhibited microstomia restricting her mouth opening (<20mm), and the lips were thin and stretched.

Intraoral

Examination of the major and minor salivary gland duct openings showed loss of quality and quantity of saliva.

Periodontal charting showed areas of bleeding on probing without CAL (clinical attachment loss).

Generalized fibrotic changes in mucosal tissues were noted with mucogingival paresthesia. Oral mucosal tissues appeared pale and tight with hardening of the soft palate. The patient’s GI score was 2. Several restorations and crowns were noted. No caries present. Generalized moderate biofilm accumulation

was apparent. The debris index (DI-S) and the calculus index (CI-S) were both scored as 1 (debris and calculus covered less than 1/3 of the examined tooth surfaces).

Class I: right and left sides; teeth #7 and #10 are in torso version and overlap slightly with #8 and #9.

Radiographic Examination

No significant findings.

Dental Hygiene Diagnosis

Problems	Related to Risks and Etiology
Xerostomia	Loss of quality and quantity of saliva and scleroderma Goal: The patient will experience relief from xerostomia due to scleroderma immediately upon initiation of local and systemic measures to stimulate saliva flow
Increased periodontal disease risk	Insufficient daily biofilm management, limited hand strength and mouth opening as evidenced by gingival inflammation and a high GI score Goal: The patient will reduce the GI score from 2 to <1.0 by the next visit
Increased caries risk	Low salivary flow, inadequate biofilm management and fluoride intake, an acidic environment created by GERD, and a soft, high carbohydrate diet because of dysphagia Goal: The patient will suppress potential bacterial activity by increasing caries protective factors
Blood pressure elevated above treatment goal for patients <65 years old	Blood pressure readings of 159/92 Goal: Patient will report having blood pressure evaluated by a physician before rescheduled visit

Planned Interventions

Planned Interventions (to arrest or control disease and regenerate, restore, or maintain health)

Clinical	Education/Counseling	Oral Hygiene Instruction
BP was taken at every visit Initial exam, FMS radiographs, Adult prophylaxis In-office 5% sodium fluoride varnish Three-month continuing care interval because of scleroderma and associated medicine risks Referral to primary care physician for blood pressure evaluation Referral to occupational therapist to manage symptoms of scleroderma	Significance of management of xerostomia Determine patient’s motivation to reduce plaque accumulation and oral disease risks: “What are possible benefits of removing plaque?” “On a scale of 1–10, how confident are you that you can reduce your plaque score?” Increased risk of caries because of lack of fluoride and soft, high carbohydrate diet Provide information on alternative self-care aids such as an enlarged or extended toothbrush handle, a powered toothbrush and flossing device Correlation of hypertension to general health	Use of prescribed cholinergic agonist agent Frequent use of water and saliva substitutes (Tolle 2012) Use of chlorhexidine for reduction of bacterial and gingival inflammation and prevention of Candida (Spolarich 2011) and a daily 1.1% sodium fluoride (prescription) mouthrinse for caries reduction (Featherstone 2000; Tolle 2012) Use of pump-type toothpaste dispenser and a power toothbrush with child-size brush inserts, interdental aids with elongated and enlarged handles or flosser with a toothbrush-like handle (Yuen et al. 2011)

Progress Notes

The patient arrived on time for her appointment and was treated without delay. A complete medical, social, and dental history was taken. An initial exam, FMS and adult prophylaxis were performed followed by an application of 5% sodium fluoride varnish. The patient was advised to see her physician for a BP evaluation and an occupational therapist for effects of scleroderma on daily living.

Discussion: Examination and Documentation in Patient Assessment

Patient assessment represents the most important step in the dental hygiene process of care because it provides a baseline of information, opens a dialogue between the patient and provider, and establishes trust and confidence in their relationship (Figure 1.1.1). All information collected during the assessment process is inextricably bound to each other. Information from the



Assessment is a form of detective work that involves putting together findings from:

1. Questioning patients
2. Reviewing histories
3. Identifying risks
4. Consulting with other health professionals
5. Observing and examining structures
6. Performing diagnostic tests
7. Incorporating significant facts into a database (ADHA 2016)

Figure 1.1.1: Assessment as detective work.

patient history is used to distinguish significant from insignificant findings in a clinical examination, helps generate a list of dental hygiene diagnoses, and ultimately leads to the formation of an individualized care plan.

During an examination, the dental hygienist documents findings as signs of health or disease. On the other hand, findings revealed by the patient are referred to as symptoms of their problems. The chief complaint or concern is the primary reason that patients present for treatment and should be the first diagnostic statement in the care plan (Wilkins et al. 2017). Typically, the chief complaint is a symptom or a request and may need to be elicited by asking open-ended questions such as, “What brought you to the dental office?” or “Is there anything you hope I can do for you?” Paying close attention to a patient’s chief concern(s) serves many purposes: it alerts the provider to relevant diagnostic information; it offers insight into a patient’s perception regarding his or her problems; and finally, it provides insight into the patient’s health literacy including their level of knowledge about dentistry.

A comprehensive clinical exam is made up of five parts (Figure 1.1.2).

1. **The Physical Exam or Review of Systems (ROS)** is a list of questions, by organ system, intended to uncover disease or dysfunction. The list is often given to patients before treatment. Along with the medical history, the ROS assists in determining a patient’s MCS or ASA (methods for

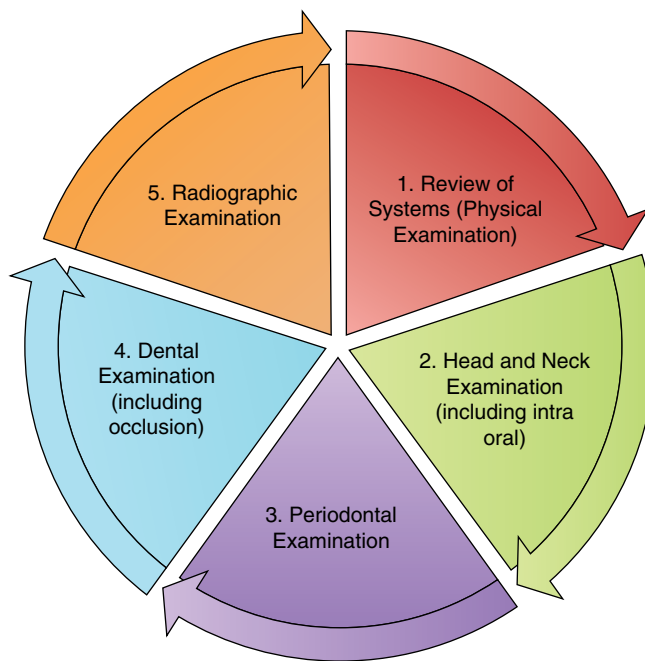


Figure 1.1.2: Five parts of the clinical examination.

physical status classification). When using the ROS, clinicians must be aware of associations between noncommunicable diseases and oral disease because they share common risk factors as well as underlying infection/inflammation pathways (Jin et al. 2016).

2. **The Extraoral and Intraoral Soft Tissue Examination** evaluates head and neck structures for abnormalities or lesions. The examinations are performed systematically through a process of observation and palpation to detect variations from normal and abnormalities. Patients provide important historical context for clinical findings, such as timelines for lesions, whether the lesions are painful or tender, or can be linked to repeated exposure to sun or tobacco products.
3. **The Periodontal Examination** evaluates the patient’s oral hygiene and the clinical appearance of the periodontal soft tissue. Deviations from normal healthy tissue are noted such as gingival recession, redness, suppuration, and swelling. A thorough examination requires a mouth mirror, a periodontal probe, and radiographs. A periodontal assessment provides information for long-term monitoring of a patient’s periodontal disease activity (Armitage 2004).
4. **Examination of the Teeth (and Occlusion)** Before beginning the dental examination, the clinician

should review the dental history, particularly the chief complaint(s) involving the teeth. The exam is performed in conjunction with radiographs so that imaging findings can be correlated with those found clinically.

- a. First note any missing teeth and type of replacement such as implants, fixed and removable partial and complete dentures. If removable prostheses are present, they are evaluated in the mouth and then removed.
- b. Each tooth is evaluated visually with an excellent light source. Assess all teeth for overall condition, irregularities of color, morphology, and function.
 - i. It is recommended to use the air/water syringe, with transillumination and a dull probe to detect enamel changes. However, the probe is not a better method than visual inspection alone (Newbrun 1993).
 - ii. A study concluded that explorers did not improve the validity of a caries diagnosis as compared to visual detection alone (Lussi 1991); and consequently, leaders in caries research no longer support the use of a sharp explorer in caries detection (Van Dorp et al. 1988; Braga et al. 2010).
- c. Document the numbers, shape, and type of existing restoration. Dental floss is used to check the integrity of interproximal contacts,

and the explorer evaluates restoration margins for defects.

- d. An occlusal examination is conducted by recording the intraarch and interarch relationships of adjacent teeth in the same and opposing arches. Both right and left sides are included when classifying teeth according to Angle's Classifications in the permanent dentition and when using the terminus of second primary molars.
5. **The Radiographic Examination** Radiographs are considered an essential adjunct to the visual clinical examination. They accurately detect proximal caries lesions and estimate the depth of lesion penetration into the underlying dentin (Bindra et al. 2016; Keenan and Keenan 2016). Also, radiographs are useful for monitoring the growth and development of the teeth and jaws as well as for the diagnosis and treatment of periodontal diseases and oral pathologies (American Dental Association Council on Scientific Affairs 2012).

Thorough and accurate documentation of the patient's record occurs during the assessment process and at every phase of patient care. As a result, documentation has been adopted as the sixth standard in the Standards for Clinical Dental Hygiene Practice (Figure 1.1.3) that guide practice and are designed for hygienists as a resource for providing patient-centered and evidence-based care (ADHA 2016). The patient's

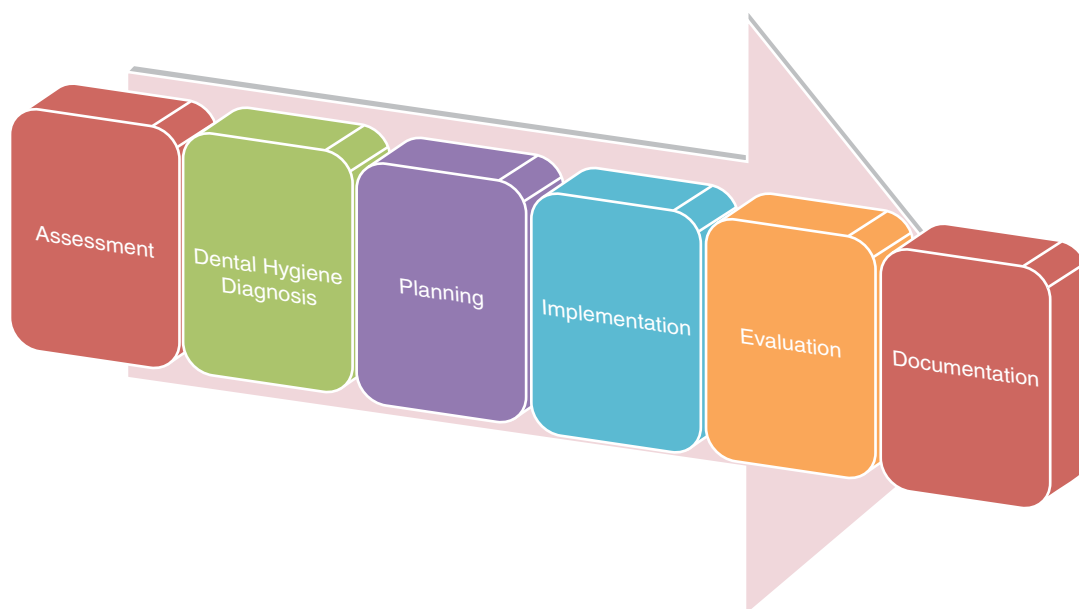


Figure 1.1.3: Standards for clinical dental hygiene practice.

record should be brief and to the point, objective (nonjudgmental) and comprehensible. Taking and documenting *all* patient data – the list of problems, planned and provided treatment, and relevant patient conversations – in a humanistic manner (with clarity, professionalism, and empathy) is an indicator of professional competence and represents the highest standard of patient care.

Using open-ended questions during a patient assessment (as opposed to direct or leading questions) results in a more nuanced examination picture (Iversen et al. 2014). Skillful clinicians elicit in-depth information about previous dental experiences and what dental care and preventive care mean to the patients. They find out how and why patients did or did not adopt prescribed preventive care, and they determine ways in which social context influences their patients' health behaviors. Humanizing the dental care experience by contextualizing clinical facts with our patients' narratives (their personal stories about general health and oral diseases) provides a bridge between evidence-based dental practice and the art of applying the knowledge to a single case (Kalitzkus and Matthiessen 2009), improves the visual exam and enriches dental hygiene practice.

Advances in technology such as imaging techniques, oral/facial photography and electronic health records (EHR) have brought improvements to the data collection and documentation processes. Proper documentation records:

- collected data from the patient interviews and clinical examination
- services planned and provided
- recommendations, and
- relevant information to the patient's case.

The process accurately and concisely records all information and interactions between the patient and provider and provides evidence that the services performed reflect the patient's specific needs. A critical part of the documentation process and a legal risk management strategy is to include the patient's acceptance or rejection of the treatment options and recommendations (after a presentation of a proposed care plan and the consequences of not receiving care by the dental hygienist) referred to as informed consent and informed refusal. After patients have agreed to and signed for treatment, errors can be corrected. However, clinicians must initial all corrections, and *any* alterations to the treatment plan require a new patient signature.

A patient's health information and clinical records are confidential and legally protected by The Health Insurance Portability and Accountability Act (<https://www.hhs.gov/hipaa/for-professionals/index.html>). Additionally, the ADHA Code of Ethics provides members with professional standards for ethical and moral behavior and reminds us of our professional responsibility in that regard. Hence, maintaining patient privacy when documenting information throughout the process of care and when collaborating interprofessionally on a case is critical in the application of technology to patient care.

The patient assessment process requires attention to the facts of the case but likewise, should include meaning, context (cultural and otherwise), and understanding of the patient's needs. Dental professionals conduct a patient-centered interview and examination that put the patient where she/he needs to be in the process of care, front-and-center.

Interviewing and asking questions continue throughout the patient examination to include the patient's point of view and to lend meaning to the process. The way in which questions are asked can encourage intimacy and frankness; and even though responses are typed on a computer, written on a page, or recorded, it is important to maintain eye contact with the patient, to be friendly, interested, to ask questions requiring more than a one-word response, and to reiterate for clarity and understanding.

Professionals can restore a sense of narrative into the assessment process by creating a more humanistic environment during the assessment. The patient narrative is not only a description of the facts of a case. The narrative in healthcare provides meaning, context and perspective for the patient's problem (Greenhalgh and Hurwitz 1998). Throughout the interview and examination, clinicians watch the patient's expressions, interact comfortably, engage patients verbally while simultaneously managing documentation. Consequently, patients may be more comfortable about telling their story; they may have more confidence in their provider; and they may be more willing to share in the responsibility for their health outcomes.

Health professionals cannot be detached, removed, or uncaring in what they do. Paying attention, exploring things a little bit, getting at it slowly, but carefully and thoroughly will get results throughout the entire process of care (Pirsig 1974).

Take-Home Hints

1. Assessment identifies patients' needs and oral health problems and is the first of six of the *Standards for Clinical Dental Hygiene Practice* (Figure 1.1.3).
2. The patient examination never stands alone. The clinical examination is tied to all information-gathering activities. For example, a diagnosis of scleroderma elicited during the patient interview provides historical context for changes in the patient's oral tissues.
3. The American Dental Hygienists' Association (ADHA) defines patient-centered as an approach that focuses attention on the patient and recognizes the importance of their values, beliefs, and needs in the provision of care (ADHA Standards for Clinical Dental Hygiene Practice 2016).
4. Risk assessment identifies certain behaviors, characteristics, or exposures that put our patients at risk for developing diseases. Risk factors are assessed as high, moderate, or low and are used to prevent and manage dental diseases (ADHA 2017).

Self-Study Questions

1. Findings revealed to the dental hygienist by the patient during assessment are called

- A. Signs
- B. Symptoms

2. Recently, a sixth standard has been added to the Standards for Clinical Dental Hygiene Practice. It is:

- A. Assessment
- B. Dental Hygiene Diagnosis
- C. Documentation
- D. Implementation

3. The six standards for Clinical Dental Hygiene Practice follow the dental hygiene process of care. The correct order of the six components is:

- A. Assessment
- B. Evaluation
- C. Implementation
- D. Dental Hygiene Diagnosis
- E. Documentation
- F. Planning

4. A thorough examination is made up of _____ parts. (Fill-in-the-blank).

- A. Three
- B. Four
- C. Five
- D. Six

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Answers to Self-Study Questions

1. B symptoms

2. C documentation

3. Assessment, Dental Hygiene Diagnosis, Planning, Implementation, Evaluation, and Documentation (ADPIED)

4. Five. The five parts of the dental hygiene examination are

- Review of Systems
- Head and Neck exam (including intraoral exam)
- Periodontal exam
- Dental exam (including occlusion), and
- Radiographic exam

Case 2

Head and Neck Examination

CASE STORY

A 29-year-old female, recently employed as an elementary special education teacher, presented with a chief complaint of, “I am concerned about white spots on my teeth and red areas on my neck.” She has been unable to see a dentist for seven years because of “a large college loan debt.”

PROBLEM-BASED LEARNING GOALS AND OBJECTIVES

- Explain the steps in the head and neck exam
- State the objectives of the head and neck examination
- State the relevance of the head and neck and intraoral examinations to general health and physical wellbeing
- Identify risk factors for cancer

Medical History

Review of the patient’s medical history revealed allergies to most animals, dust, and mites. The patient takes one capsule Benadryl (Diphenhydramine HCL) 25mg every four to six hours at least four days per week for allergies. Her vital signs are within normal limits.

Dental History

The patient grew up in the Kingston, New York area without fluoride. She brushes twice daily and uses

toothpaste without fluoride. The patient states she flosses once daily. Minor occlusal restorations were placed during college.

Social History

The patient teaches at a residential institution for children with emotional and academic problems. Also, she plays the violin with a local symphony orchestra. She drinks several bottles of sweetened ice tea daily and snacks on candy before, during, and after work.

Head and Neck Examination

The extraoral exam revealed hyperpigmented areas under the patient’s left mandible and erythematous plaques on the left lower neck and no enlarged or palpable lymph nodes (Figure 1.2.1). The patient states that she practices violin one hour on weekdays and two hours on weekends and holds the violin against her chin and collar bone. The three lesions are slightly raised, erythematous, broad, and rough in appearance and conform to the placement position of the violin. Each lesion measures 5 × 5 mm, 3 × 7 mm, 7 × 3 mm. The patient states violinists stabilize their instrument with the sternocleidomastoid muscle (Figure 1.2.2). It is the muscle that passes diagonally across the front and side of the neck beginning at the top of the sternum and ending behind the ear. The lesions known as “fiddlers neck” are a common skin problem found on violinists (Jue et al. 2010) and conform to the performance position of the violin as described by the patient.

Intraorally, visual examination and transillumination of teeth revealed noncavitated white spot lesions on the proximal surfaces of teeth #8, #9, and #10. There is localized slight supragingival biofilm on affected tooth



Figure 1.2.1: Extraoral image of neck with erythematous areas.

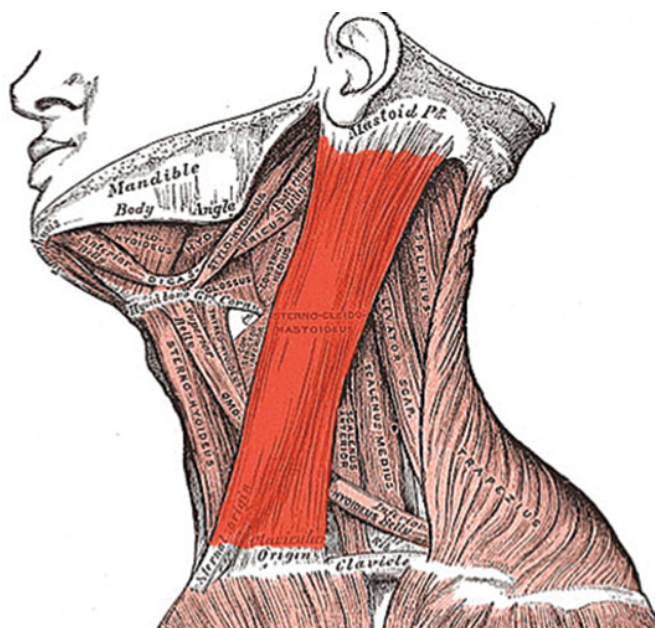


Figure 1.2.2: Sternocleidomastoid muscle.

surfaces. Supplemental oral findings indicate the patient is a mouth breather. Class I malocclusion with anterior open bite present.

Radiographic Examination

Caries lesions are visible radiographically but confined to the enamel. Partially erupted third molars are visible.

Dental Hygiene Diagnosis

Problems	Related to Risks and Etiology
Increased caries	Localized slight supragingival biofilm, frequent sugar intake, nonexistent use of fluoridated dentifrice or fluoride rinses and xerostomia (side effect of medication and mouth breathing).
Three red callus-like areas below the chin and along the neck	Violin placement, frequency of violin practice, possible allergy to varnish

Planned Interventions

Planned Interventions (to arrest or control disease and regenerate, restore, or maintain health)

Clinical	Education/Counseling	Oral Hygiene Instruction
Initial exam, radiographs, and adult prophylaxis	The importance of regular dental visits. Increased risk for caries.	Modified Bass brushing technique Recommend use of 1.1% NaF toothpaste and 0.05% NaF rinse 2X daily
5% NaF fluoride varnish with a synthetic form of colophony (to reduce risk of allergy) every 3 to 4 months	The role of fluoride in remineralization of noncavitated lesions.	10 ml 0.12% Chlorhexidine rinse one minute daily for 1 week each month for short term (evaluate at 3 months recall until risk reduced).
Sealants	Reduction of bacterial infection through daily biofilm removal and antimicrobial therapy.	Recommend frequent sips of water during the day and xylitol gum or candy four times daily if mouth feels dry.
Referral to dermatologist for red lesions on neck	Food diary for analysis of sugar exposures.	
Referral to primary care physician to evaluate allergy symptoms	Use of chamois cloth to protect exposed skin while practicing violin	

Progress Notes

The patient arrived for her appointment on time. A complete medical, social, and dental history was taken. Initial exam and FMS were performed. Three atypical callus-like red lesions on the neck were noted during the head and neck exam. Noncavitated white spot lesions were charted, and bacterial infection reduction methods were explained according to patient caries risk assessment. A food diary for analysis of sugar intake was reviewed and given to the patient. The patient was instructed to return in one week for dietary analysis and counseling. The patient was advised to see a dermatologist for a differential diagnosis and treatment of neck lesions and her primary care physician for symptoms of allergies. Three to four months recall recommended for high caries risk.

Discussion: The Head and Neck Examination

Dental hygienists see patients for well-check visits more often than physicians and are at the frontline for recognizing early illness and for educating patients about their risk factors. The head and neck and intraoral examinations – often referred to as an oral cancer examination or oral cancer screening – are an important part of comprehensive dental hygiene care and can be completed in around five minutes. However, approximately half of practicing hygienists (51%) performs a head and neck exam routinely during dental visits (Forrest et al. 2001; Horowitz et al. 2002). The head and neck exam is emphasized during hygiene education as a standard of care to detect manifestations of systemic illness, early skin cancer, and lymphadenopathy. Demands on patient scheduling,

working time, knowledge, and perceived risk of cancer in the United States often prevent hygienists from performing the service (Forrest et al. 2001; Horowitz et al. 2002; Cotter et al. 2011). However, failure to include this exam routinely has profound consequences such as late-stage diagnosis, more extensive surgery and therapies such as radiation and chemotherapy, and a decreased quality of life and health.

Hygienists should perform the head and neck and intraoral assessments the same way at every visit to maintain efficiency and high levels of accuracy. The head and neck exam includes checking symmetry and profile of the face, the skin, eyes, lips, lymph nodes, salivary, and thyroid glands as well as a temporomandibular joint examination (see Figure 1.2.3). If possible, clinicians visually examine each area before performing a thorough palpation. Additionally, it is important to ask permission to do the exam and to tell patients exactly what is being done and why. For example, ask your patients if you may perform an extra- and intraoral examination to look for abnormalities that affect oral and general health. Tell patients that palpation will include the clavicle area.

If a problem is identified, ask the patient about its history (onset, duration, and possible causes). As in this case, when deviations from normal are detected, patients are referred to a physician for differential diagnosis and treatment. Finally, educating patients about known risk factors for cancer such as age, genetic predisposition, sun exposure, alcohol, tobacco, viruses such as HPV and HIV, chronic inflammation and inadequate nutrition and host immunity is essential to decreasing the rate of cancer (Sciubba 2001; Neild-Gehrig 2018).

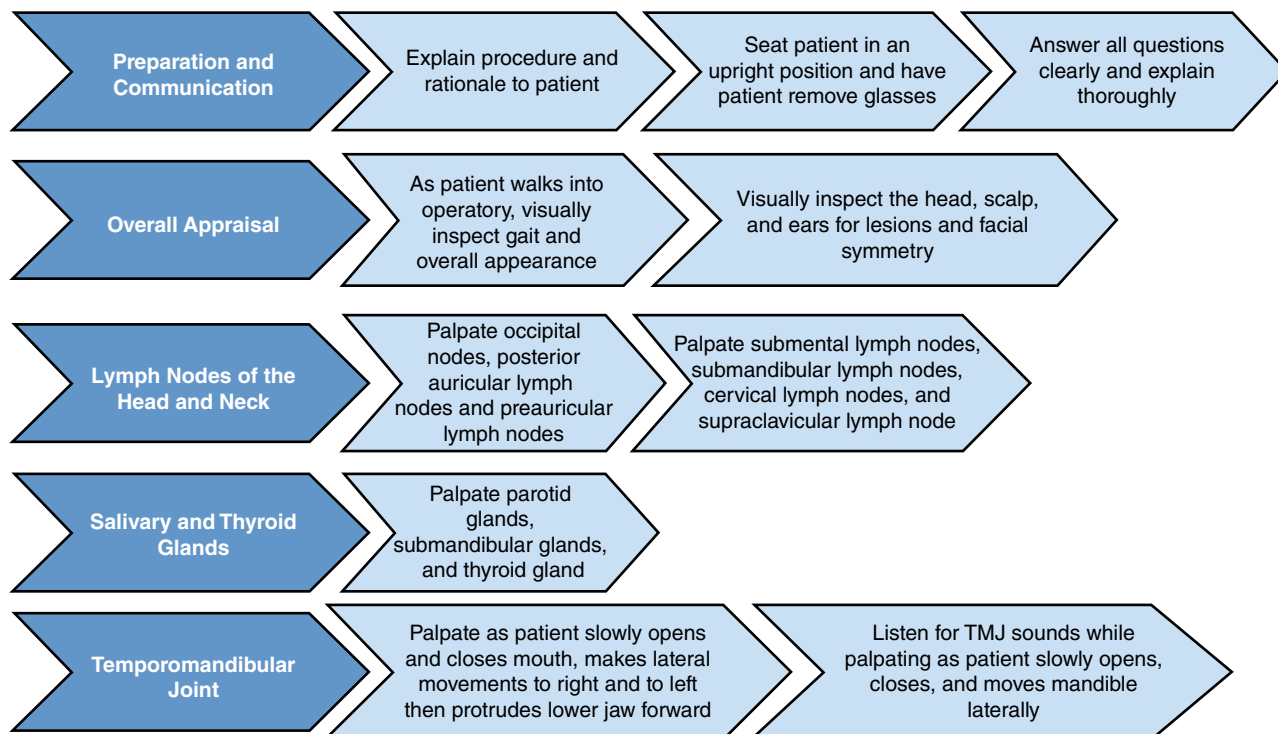


Figure 1.2.3: Steps in the head and neck examination.

Take-Home Hints

1. The American Cancer Society and the American Dental Association recommend oral cancer examinations as an essential element of routine dental examinations (Smith et al. 2013; Walsh et al. 2013).
2. The Objectives of the Head and Neck and Intraoral Exam are:
 1. To determine general wellness and ability to continue dental treatment.
 2. To provide and/or to compare to a baseline of assessment information.
 3. To determine need for additional diagnostic procedures and medical or other consultations.
 4. To enable early diagnosis of pathology.
3. Findings from the Head and Neck and Oral Examinations fall into one of three categories:
 1. Normal – found in most individuals.
 2. Atypical – a variant of normal found in some individuals but within normal limits.
 3. Pathologic– indicative of infection, trauma, neoplasms, development errors causing functional issues, inadequate nutrition and immunity, and more.
4. Include the following in your description of findings:
 1. *History* – Onset, duration, and possible causes.

2. *Description* – Location and extent, size, surface texture, consistency, and color.
3. *Morphology* –elevated, depressed, or flat.
5. Oral cavity and oropharyngeal cancers are considered to be the sixth most common cancers worldwide (Warnakulasurlya 2009), there will be an estimated 51,540 new cases in the United States in 2016, and an estimated 10,030 people will die of this disease (SEER Cancer Statistics 2017).
6. The most common malignancy of the head and neck, oral cavity squamous cell carcinoma (OC-SCC), is preceded often by white or red mucosal changes known as leukoplakia or erythroplakia. “Some lesions will show a combination of red and white features, termed *erythroleukoplakia*, *speckled leukoplakia*, or *speckled erythroplakia*” (Chi et al. 2015).
7. Although oral cancer is associated with aging, studies indicate a rise in the disease in adults below the age of 40 and that squamous cell carcinoma in tongues of young adults has increased sharply (Schantz and Yu 2002; Chaturvedi et al. 2011).
8. Alarmingly, cancers in younger people are more aggressive and associated with a poorer prognosis than those found in older adults (Warnakulasurlya 2009). A new study found that the human papillomavirus (HPV) may be causally linked to 70%