

CHAPTER 1

Patient Evaluation and History Taking

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Introduction

The initial physical examination and evaluation of a patient is a critical component in the provision of care prior to any surgical procedure. A thorough patient assessment, including a physical exam and medical history, is necessary prior to even simple surgical events. The information gathered during this encounter can provide the clinician with information necessary to make treatment modifications and assess and stratify risks and potential complications associated with the treatment. Disregarding the importance of this exam can result in serious morbidity and even death. Prior to initiating any surgical procedure, an accurate dental diagnosis must be formulated based on the patient's chief complaint, history of present illness, a clinical dental examination, and appropriate and recent diagnostic imaging, such as a panoramic radiograph.

Medical history

The medical history of a patient is the most important information that a clinician can acquire and should be emphasized during the initial exam. With a thorough medical history, a skilled clinician can decide whether the patient is capable of undergoing a procedure and if any modifications should be made prior to the treatment. The dentist should be able to reliably predict how preexisting medical conditions might interfere with the patient's ability to respond successfully to a surgical insult and subsequently heal. A careful and systematic approach must be used to evaluate all surgical patients. Only in this way can potential complications be managed or avoided. The medical history should be updated

annually, but it should also be reviewed at each appointment to be assured there are no significant changes and/or additions.

A detailed questionnaire that covers all common medical problems aids in the collection of information to formulate the patient's medical history (Figure 1.1). However, the dentist should review this questionnaire and ask focused questions as needed to clarify and expound on the past medical history. Any inconsistencies or discrepancies in the written or verbal history must be investigated. The dentist must formulate a thorough timeline of the patient's medical history, surgical history, social history (smoking, drinking, and illicit drug habits), family history, current and previous medications, and allergies. If lingering questions remain after reviewing the history with the patient, consultation with the patient's primary care physician should be considered. If the patient is unable to accurately review their medical history due to cognitive issues, then the caregiver and/or family must be prepared to provide the medical history. The use of any anticoagulants, corticosteroids, hypertension medication, and other medications should be thoroughly reviewed.¹ Female patients should be asked whether there is any possibility that they are pregnant; if there is uncertainty, urine beta-HCG is easy to obtain to provide a definitive answer. Allergies that should be addressed are those to medications and other items used in a dental office, such as latex. The medical history should emphasize the major organ systems, specifically the cardiovascular system, central nervous system, pulmonary system, endocrine system, along with the hepatic and renal systems.

Medical History

Patient's Name _____ Date of Birth _____

Physician's Name _____ Phone number _____

Please answer the following questions as completely as possible

1. Do you consider yourself to be in good health? YES NO
2. Are you now or have you been under a physician's care within the past year? YES NO
If yes, specify the condition being treated: _____
3. Do you take any medication, including birth control pills? YES NO
Please specify name and purpose of medication: _____

4. Do you have or have you ever had any heart or blood problems? YES NO
5. Have you ever been told that you have a heart murmur? YES NO
6. Do you require antibiotic medication before treatment for a heart condition? YES NO
7. Do you now have or have you ever had high blood pressure? YES NO
8. Have you ever been diagnosed as being HIV positive or having AIDS? YES NO
9. Have you ever had hepatitis or liver disease? YES NO
10. Have you ever had rheumatic fever, ___ asthma, ___ blood disorder, ___
diabetes ___; rheumatism ___; arthritis ___; tuberculosis ___; venereal disease ___; heart attack ___;
kidney disease ___; immune system disorder ___; any other diseases ___
If so, specify: _____
11. Do you bleed easily? YES NO
12. Have you ever had any severe or unusual reaction to, or are you allergic to, any drugs, including the following:
Penicillin _____ Ibuprofen _____
Aspirin _____ Codeine _____
Acetaminophen _____ Barbiturates _____

Are you taking any of the following medications?
Antibiotics _____ Digitalis or heart medication _____
Anticoagulants (Blood thinners) _____ Nitroglycerin _____
Aspirin _____ Antihistamine _____
Tranquilizers _____ Oral contraceptives _____
Insulin _____
13. Do you faint easily? YES NO
14. Have you ever had a reaction to dental treatment or local anesthetic? YES NO
15. Are you allergic to any local anesthetic? YES NO
16. Do you have any other allergies? YES NO
If yes, please describe: _____

17. Have you ever had a nervous breakdown or undergone psychiatric treatment? YES NO
18. Have you ever had an addiction problem with alcohol or drugs? YES NO
19. Women: Are you or could you be pregnant? YES NO
Are you breast feeding now? YES NO
20. Are you in pain now? YES NO
21. When did you last see a dentist? _____
22. Who was your last dentist? _____
23. Are your teeth affecting your general health? YES NO
24. Do you have or have you had bleeding or sensitive gums? YES NO
25. Have you ever taken Fen Phen or similar appetite-suppressant drugs? YES NO
26. Do you smoke? If yes, how many cigarettes a day YES NO
27. Do you drink alcohol? If yes, how often YES NO

I hereby certify that the answers to the forgoing questions are accurate to the best of my ability. Since a change in my medical condition or in medications I take can affect dental treatment, I understand the importance of and agree to take the responsibility for notifying the dentist of any changes at any subsequent appointment.

Signature _____ Date _____

(Patient, legal guardian, or authorized agent of patient)

Figure 1.1 Medical history questionnaire. Source: Reprinted with permission from OMS National Insurance Company.

Cardiovascular system

As our population ages, the dentist is likely to see more patients with some aspects of cardiovascular disease. Hypertension is very common, and many patients are undiagnosed. Current studies note that nearly one-third of the US population has hypertension—defined as a systolic blood pressure higher than 139 mmHg or a diastolic blood pressure higher than 89 mmHg. Another one-quarter of the U.S. population has prehypertension—defined by a systolic blood pressure between 120 and 139 mmHg and a diastolic blood pressure between 80 and 89 mmHg.² For patients with a history of cardiovascular disease, vital signs should be monitored regularly during surgery (Table 1.1).

Systolic and diastolic blood pressures taken at multiple times remain the best means to diagnose and classify hypertension. When the blood pressure reading is mild to moderately high, the patient should be referred to their primary care physician for evaluation and to initiate hypertensive therapy. The patient should be monitored on each subsequent visit before treatment. If needed, the dentist can consider using some type of anxiety control protocol. When severe hypertension exists, which is defined as systolic blood pressure greater than 200 mmHg or diastolic pressure above 110 mmHg,² defer treatment and urgently refer the patient to their primary care physician or an emergency department.

Congestive heart failure (CHF) becomes more common with advanced age. This condition is typically characterized by dyspnea, orthopnea, fatigue, and lower extremity edema. Uncontrolled or new onset symptoms of CHF necessitate deferring surgical treatment until the patient has been medically optimized.

Coronary artery disease (CAD) also has an increasing prevalence as our population ages. Progressive narrowing of the coronary arteries leads to an imbalance in

myocardial oxygen demand and supply. Oxygen demand can be further increased by exertion, stress, or anxiety during surgical procedures. When myocardial ischemia occurs, it can produce substernal chest pain, which may radiate to the arms, neck, or jaw. Other symptoms include diaphoresis, dyspnea, and nausea/vomiting. The dental practitioner is likely to see patients with a variety of presentations of CAD, including angina, history of myocardial infarction, coronary artery stent placement, coronary artery bypass grafting, etc. In these cases, the functional status of a patient is a very reliable predictor of risk for dentoalveolar surgery. The functional assessment of common daily activities is quantified in metabolic equivalents (METs). A MET is defined as the resting metabolic rate (the amount of oxygen consumed at rest) which is approximately 3.5 ml O₂/kg/min. Therefore, an activity with 2 METs requires twice the resting metabolism (Table 1.2).³ Patients who are able to perform moderate activity (4 or more METs, e.g. walk around the block at 3–4 mph, light housework), are generally good candidates for dentoalveolar procedures without further cardiac work-up. Of course, any patient with signs of unstable CAD (new onset or altered frequency/intensity chest pain, decompensated CHF), elective surgery should be deferred until the patient is stabilized.

Table 1.1 Blood pressure classification

BP Classification	Systolic BP (mmHg)	Diastolic BP (mmHg)
Normal	<120	<80
Prehypertensive	120–139	80–89
Stage 1 hypertension	140–159	90–99
Stage 2 hypertension	≥160	≥100

Table 1.2 Table of METS for daily activities*

Activity	METS
Light intensity activities	
Sleeping	0.9
Writing, desk work, typing	1.8
Light house chores (washing dishes, cooking, making the bed)	2–2.5
Walking 2.5 mph	2.9
Moderate intensity activities	
Walking 3.0 mph	3.3
Bicycling <10 mph	4.0
Gardening and yard work	3.5–4.4
Vigorous intensity activities	
Jogging	8.8–11.2
Basketball	11.1

*A MET is defined as the resting metabolic rate (the amount of oxygen consumed at rest) which is approximately 3.5 ml O₂/kg/min. Therefore, an activity with 2 METs requires twice the resting metabolism.

Dysrhythmias are often associated with CHF and CAD. Atrial fibrillation (AF) has become the default rhythm of the elderly, being the most common sustained arrhythmia. These patients are typically anticoagulated by a number of different medications. The dentist must be familiar with the medications as well as the mechanism of action. For minor procedures, anticoagulated patients often can be maintained on their anticoagulation protocol and undergo surgery without incident. Appropriate labs should be ordered as needed to check the anticoagulation status. However, if the dentist feels the anticoagulation protocol needs to be modified or discontinued prior to surgery, consultation with the prescribing physician is mandatory.

Patients with dysrhythmias will often have pacemakers and/or implanted defibrillators. There is no reported contraindication to treating patients with pacemakers, and no evidence exists showing the need for antibiotic prophylaxis in patients with pacemakers. The dentist must keep in mind that certain electrical equipment can interfere with the pacemaker (e.g. electrocautery), so precautions must be observed.

Cardiac conditions that require Subacute Bacterial Endocarditis (SBE) prophylaxis will be covered elsewhere in the text.

If any uncertainty exists regarding safely performing dentoalveolar surgery on a patient with a history of cardiovascular disease, the dentist should consider referring the patient to an oral and maxillofacial surgeon and/or performing the procedure in more controlled environment such as a hospital operating room.

Pulmonary system

Pulmonary disease is also becoming more common in our aging population. As aging occurs, there is a decrease in total capacity, expiratory reserve volume, and functional reserve volume. There is also a decrease in alveolar gas exchange surface.

Asthma is one of the most common pulmonary diseases that a dentist will encounter. True asthma involves the episodic narrowing of bronchioles with an overlying component of inflammation. Asthma is manifested by wheezing and dyspnea due to chemical irritation, respiratory infections, immunologic reactions, stress, or a combination of these factors. As part of the patient evaluation, the dentist should inquire about precipitating factors, frequency and severity of attacks, medications

used, and response to medications. The severity of attacks can be gauged by the need for emergency room visits, hospital admissions, and past intubations. Asthmatic patients should be questioned specifically about an aspirin allergy because of the relatively high frequency of non-steroidal anti-inflammatory drug (NSAID) allergy in asthmatic patients. The asthmatic patient will often have a variety of prescription medications including beta-2 agonist inhalers, inhaled or systemic steroids, and leukotriene inhibitors. Prior to performing dentoalveolar surgery, the dentist needs to have an understanding of the mechanism of action of these medications. Management of the asthmatic patient involves recognition of the role of anxiety in bronchospasm initiation and of the potential adrenal suppression in patients receiving corticosteroid therapy. Elective oral surgery should be deferred if a respiratory tract infection or wheezing is present. In a patient whose asthma appears to be poorly controlled, pulmonary function testing as well as a medical consult would be prudent.

Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death in the United States. Airways lose their elastic properties, and become obstructed because of mucosal edema, excessive secretions, and bronchospasm. Patients with COPD frequently become dyspneic during mild-to-moderate exertion, and will report a chronic cough that produces large amounts of thick sputum. These patients are prone to frequent exacerbations due to respiratory infections.

The disease spectrum of COPD ranges from mild symptoms to those patient who require supplemental oxygen via nasal cannula. It is important for the dentist to keep in mind that these patients maintain their respiratory drive by hypoxemia, not hypercarbia, as in a normal individual.

COPD patients should have elective surgery deferred during periods of poor control or exacerbations. Patients on chronic steroid use should be considered for perioperative steroid supplementation. In those patients who smoke cigarettes, smoking cessation is ideal 4–8 weeks before surgery for maximum effect. However, smoking cessation for 72 hours will decrease carbon monoxide levels, although secretions may temporarily increase. Once again, if any questions remain about the patient's suitability for surgery, blood gas determinations, pulmonary function testing, and a medical consult should be obtained.

Table 1.3 Mini-Mental State Examination. Tool used to assess mental status based on 11 questions testing different areas of cognitive function totaling 30 points

Section	Question	Score
ORIENTATION		
Temporal orientation (5 points)	What is the approximate time?	1 point
	What day of the week is it?	1 point
	What is the date today?	1 point
	What is the month?	1 point
	What is the year?	1 point
Spatial orientation (5 points)	Where are we now?	1 point
	What is this place?	1 point
	What is the address here?	1 point
	In which town are we?	1 point
	In which state are we?	1 point
REGISTRATION		
Registration	Name three objects—1 second to say each, then ask the patient to recall all three. Repeat until the patient has learned all three. Count and record trial.	3 points
Attention and calculation	Serial 7s (stop after five correct)	1 point for each correct (5 points)
Remote memory	Ask for the 3 objects repeated above	3 points
LANGUAGE		
Naming two objects	Watch and pen	2 points
Repeat	“No ifs, ands or buts.”	1 point
Stage command	Follow a 3-stage command. “Take a piece of paper in your right hand, fold it in half, and put it on the floor.”	3 points
Writing a complete sentence	Write a sentence that makes sense	1 point
Reading and obey	Close your eyes	1 point
Copy the diagram	Copy two pentagons with an intersection	1 point
Total score		30 points
Score	Results	Dementia
30–29	Normal	
28–26	Borderline cognitive dysfunction	
25–18	Marked cognitive dysfunction	Can be diagnosed
<17	Severe dysfunction	Severe dementia

Central nervous system

With age, cerebral atrophy occurs resulting in memory decline and in extreme cases, dementia. If any patient shows signs of cognitive decline, a baseline mental

status exam can be performed to better assess the patient (Table 1.3).^{3,4}

Patients who have a history of a cerebrovascular accident (CVA) are always susceptible to future

events. Depending on the etiology of the CVA, these patients may be placed on anticoagulants and antihypertensives. If such a patient requires surgery, consultation with the patient's physician is desirable to optimize the patient for surgery. The patient's baseline neurologic status should be assessed and documented preoperatively.

Patients with a history of seizure disorders are fairly common. Prior to considering dentoalveolar surgery in these patients, the seizure disorder must be fully characterized. Useful questions to ask include frequency of seizures, the last seizure occurrence, and what medications are being used to control the seizure. The blood levels of some seizure medications, such as sodium valproate and carbamazepine, should be obtained to insure the levels are in the therapeutic range. If medication levels are sub-therapeutic, an appropriate dosing adjustment will be necessary.

Hepatic and renal systems

As with the other organ systems, renal function declines with age. After age 30, 1% of renal function is lost per year with a progressive loss of renal blood flow and a gradual loss of functioning glomeruli. This can result in prolonged elimination half-lives for medications and the reduced ability to excrete drugs and metabolites. Drugs that depend on renal metabolism or excretion should be avoided or used in modified doses to prevent systemic toxicity in renal patients. Appropriate drug doses should be calculated based on the patient's creatinine clearance levels. Nephrotoxic drugs, such as NSAIDs, should also be avoided in patients with renal failure.

Renal dialysis patients require special considerations prior to surgery. Dialysis treatment typically requires the presence of an arteriovenous shunt, which allows easy vascular access. The dentist should not use the shunt for venous access and avoid taking blood pressures on this arm. Elective procedures should be performed the day after a dialysis treatment. This allows the heparin used during dialysis to be eliminated and the patient to be in the best physiologic status with respect to intravascular volume, electrolytes, and metabolic by-products.

After renal or other solid organ transplantation, the patient will be on a variety of immune modulating medications. Odontogenic infections may rapidly progress and become life-threatening in these

immunocompromised patients, and should be treated aggressively by the dentist. Prophylactic antibiotics used prior to dentoalveolar surgery in these patients is recommended.

The patient who suffers from hepatic damage, usually from infectious disease or alcohol abuse, will need special consideration prior to dental work. The patient may be prone to bleeding because many coagulation factors produced in the liver are reduced. There is also the potential for thrombocytopenia due to decreased production of platelets or splenic sequestration of platelets. Prior to dentoalveolar procedures, appropriate coagulation studies must be obtained to verify appropriate levels of coagulation factors and platelets. A partial prothrombin time (PTT) or prothrombin time (PT), along with a platelet count, may be useful in the evaluation of the patient. Routine liver function tests may also be indicated. In addition to bleeding risk, many drugs are metabolized by the liver, with the potential for longer elimination half-lives. Dosing needs to be adjusted accordingly.

Endocrine system

The most common endocrine disorder the dentist is likely to see is diabetes mellitus. Diabetes is classified into insulin-dependent (Type 1) and non-insulin-dependent (Type 2). An insulin-dependent diabetic will usually have a history of diabetes from childhood or early adulthood and is a result of auto-immune destruction of insulin producing cells. Type 2 diabetes results from insulin resistance associated with excessive adipose tissue.

Prior to considering dentoalveolar surgery, the dentist must be familiar with the diabetic patient's medication regimen and glucose levels. If there are concerns that the patient is not well controlled, a hemoglobin A1C can be ordered to assess blood glucose levels over the previous 2–3 months. There are currently short-, intermediate-, and long-acting insulin preparations available. The dentist must be knowledgeable of the type of insulin used by the patient as well as the onset, peak effect, and duration of the insulin preparation. If the patient's diet will be significantly altered due to the surgery, adjustments must be made in medication dosing to avoid hypoglycemia. This is best done in consultation with the treating physician. In all diabetic patients, blood glucose levels should be checked prior to surgery. Short term periods of moderate hyperglycemia

in the post-op period are more desirable than risking hypoglycemia.

Diseases of the adrenal cortex may cause adrenal insufficiency. Symptoms of primary adrenal insufficiency include weakness, weight loss, fatigue, and hyperpigmentation of skin and mucous membranes. However, the most common cause of adrenal insufficiency is chronic therapeutic corticosteroid administration (secondary adrenal insufficiency). The stigmata of chronic long-term steroid use include moon facies, buffalo hump, and thin, translucent skin. Theoretically, the patient's inability to increase endogenous corticosteroid levels in response to physiologic stress may cause them to become hypotensive and complain of abdominal pain during prolonged surgery. From a practical standpoint, this Addisonian crisis is rare. A short-term increase of the steroid dose is usually sufficient to prevent this occurrence, while side effects from this steroid bump are minimal.

A thyroid condition of primary significance in oral surgery is thyrotoxicosis, because an acute crisis can occur in patients with the condition. Thyrotoxicosis is the result of an excess of circulating triiodothyronine (T_3) and thyronine (T_4). This is most frequent in patients with Graves' disease, a multinodular goiter, or a thyroid adenoma. Patients with excessive thyroid hormone production can exhibit fine, brittle hair, hyperpigmentation of skin, excessive sweating, tachycardia, palpitations, weight loss, and emotional lability. Exophthalmos, a bulging of the globes caused by increases of fat in the orbits, is a common symptom of patients with Graves' disease. Elevated circulating thyroid hormones, detected using direct or indirect laboratory techniques, leads to a definite diagnosis.

Thyrotoxic patients can be treated with therapeutic agents that block thyroid hormone synthesis and release, surgically with a thyroidectomy, or radioactive iodine ablation. A thyrotoxic crisis can occur in patients left untreated or improperly treated, caused by the sudden release of large quantities of preformed thyroid hormones. Early symptoms of a thyrotoxic crisis include restlessness, nausea, and abdominal cramps. Later-onset symptoms are high fever, diaphoresis, tachycardia, and, eventually, cardiac decompensation. The patient becomes lethargic and hypotensive, with possible death if no intervention occurs.

The dentist may be able to diagnose previously unrecognized hyperthyroidism by taking a complete medical history and performing a careful examination of the

patient, including thyroid inspection and palpation. If severe hyperthyroidism is suspected from the history, the gland should not be palpated because that manipulation alone can trigger a crisis. Patients suspected of being hyperthyroid should be referred for medical evaluation before dentoalveolar surgery.

Patients with treated thyroid disease can safely undergo dental procedures. However, if a patient is found to have an oral infection, the primary care physician should be notified, particularly if the patient shows signs of hyperthyroidism. Atropine and excessive amounts of epinephrine-containing solutions should be avoided if a patient is thought to have incompletely treated hyperthyroidism.⁵

The dentist can play a role in the initial recognition of hypothyroidism. Early symptoms of hypothyroidism include fatigue, constipation, weight gain, hoarseness, headaches, arthralgia, menstrual disturbances, edema, dry skin, and brittle hair and fingernails. If the symptoms of hypothyroidism are mild, no modification of dental therapy is required.¹

Pregnancy

The concern for the pregnant female is not only her welfare but that of the fetus. Potential teratogenic damage from drugs and radiation are serious concerns. It is always best to defer surgery for the pregnant patient, if possible, until after delivery. The patient who requires surgery and/or medication during pregnancy is in a high-risk situation and should be treated as such. Drugs are rated by the FDA as to their possible effect on the fetus. These classifications are A, B, C, D, and X. Drugs classified as A are the safest, whereas D and X are the least safe. The most likely medication to have a teratogenic effect are the D and X drugs, but doses of C and even B drugs should be used with extreme caution (Table 1.4).⁶

Typical drugs used in a dental setting which are considered the safest are acetaminophen, penicillin, codeine, erythromycin, and cephalosporin. Aspirin and ibuprofen are contraindicated because of the possibility of postpartum bleeding and premature closure of the ductus arteriosus.⁷ Avoid keeping the near-term patient in a supine position, as that position can compress the vena cava and limit blood flow. In general, elective treatment should be performed in the second trimester. Physician consult is frequently indicated.⁸

Table 1.4 Pregnancy drug categories

Categories	Definitions	Examples
A	Human studies have failed to demonstrate a risk to fetus in first trimester	
B	Animal studies show no risk and there are no human studies —OR— Animal studies have shown adverse effect, but human studies fail to present risk in any trimester	Amoxicillin, augmentin, keflex, oxycodone, lidocaine, ondansetron
C	Animal studies show adverse effect, there are no human studies, BUT potential benefits could outweigh the risk	Hydrocodone, epinephrine, fentanyl, articaïne
D	There is positive evidence of risk in fetus in human studies, BUT potential benefits could outweigh risk	ASA, ibuprofen, midazolam, lorezapam, diazepam
X	Studies show fetal abnormalities and/or positive evidence of risk in studies, and risks outweigh the benefits	

Physical examination

The clinician should begin the exam with measuring vital signs (BP, pulse, respiratory rate, temperature, pulse oximetry) (Table 1.5). This both serves as a screening device for unsuspected medical problems and provides a baseline for future evaluations. In addition to blood pressure, a pulse rate should be taken and recorded. The most common method is to palpate the radial artery at the patient's wrist. If there is a weakened pulse or irregular rhythm, elective treatment should not be performed unless the operator has received clearance by the patient's physician. Respirations, performed by counting the numbers of breaths taken by the patient in a minute, can also provide information regarding the patient's respiratory function. When examining respirations, it should be noted whether the patient's breaths

Table 1.5 Vital signs for an adult patient

	Normal	High	Low
Pulse rate	60–100 bpm	100 bpm or higher	60 bpm or lower
Respiratory rate	12–18 bpm	25 bpm or higher	12 bpm or lower
Temperature	37°C (98.6°F ± 1°F)	38.3°C (101°F) or higher	36°C (96.8°F) or lower
O ₂ saturation (SpO ₂)	97–100%		<94%

Table 1.6 Body mass index (BMI)* classification, as defined by World Health Organization (WHO)

Classification	BMI	Risk of comorbidities
Underweight	<18.5	Low
Normal range	18.5–24.9	Average
Overweight	≥25	
Pre-obese	25.0–29.9	Increased
Obese class I	30.0–34.9	Moderate
Obese class II	35.0–39.9	Severe
Obese class III	≥40.0	Very severe

*BMI, defined as {weight (kg)/height (m)²}, is the accepted measure of obesity in populations and in clinical practice.

are unlabored or labored, if there is any sound associated with the breaths, such as wheezing, and if the breaths are regular or irregular.

In addition to the vital signs mentioned above, there is other information that should be gathered prior to performing a surgical procedure. The height and weight (in kilograms) of the patient should be recorded. The weight of the patient is used frequently in determining dosages of many medications. The body mass index (BMI) is a useful tool in quantifying obesity (Table 1.6). Obese patients are at a higher risk for having many comorbidities such as CAD, diabetes, and obstructive sleep apnea. The patient's temporomandibular joint (TMJ) function should be documented prior to surgery, by assessing the maximum interincisal opening, lateral excursions, and any pre-auricular tenderness. Patients

with limited opening will make dentoalveolar surgery more difficult. Also, if the patient has pre-existing TMJ pain, it must be documented as the surgery could exacerbate the condition. Finally, if the patient is presenting for surgery due to a painful oral condition, it is useful to quantify the level of pain that the patient is experiencing. This is usually done on a 0–10 scale, with 0 being no pain, and a 10 signifying the worst pain the patient has ever experienced.

Most patients can safely undergo dentoalveolar surgery without obtaining preoperative laboratory work. However, patients with a history of current or recent chemotherapy are the exception. Chemotherapeutic agents not only affect malignancy, but can have a significant effect on the hematopoietic system. Thus, the potential for decreased platelet counts as well as decreased white blood cells counts exists. Subsequently, there is the potential for excessive bleeding due to the thrombocytopenia and the potential of infection due to leukopenia. In this subset of patients, preoperative laboratory values must be obtained that assess the adequacy of platelets and white blood cells. If the values are insufficient, the surgery should be delayed or modifications to the treatment considered, e.g. platelet transfusion.

Head and neck examination

The physical evaluation of a dental patient will focus on the oral cavity and surrounding head and neck region, but the clinician should also carefully evaluate entire patient for pertinent physical findings. The physical exam is usually accomplished by: inspection, palpation, percussion, and auscultation. The dentist should also examine skin texture and look for possible skin lesions on the head, neck, and any other exposed parts of the body. Cervical lymph nodes should be palpated. Include examination of the hair, facial symmetry, eye movements and conjunctiva color, and cranial nerves. Inspect the oral cavity thoroughly, including the oropharynx, tongue, floor of the mouth, and oral mucosa for any abnormal appearing tissue, expansion, or induration.

Any abnormalities should be described and noted in the patient's chart. Suspicious lesions must be biopsied or referred for biopsy. Red and/or white lesions are particularly suspicious and must be further investigated (Figures 1.2, 1.3, 1.4, 1.5).



Figure 1.2 Carcinoma *in situ* on the ventral surface of the tongue.



Figure 1.3 Central giant cell granuloma of left mandible.



Figure 1.4 Pyogenic granuloma of left anterior maxilla.



Figure 1.5 Polymorphous low grade adenocarcinoma of the posterior palate.

Conclusion

A responsible and vigilant dentist must recognize the presence or history of medical conditions that may affect the safe delivery of care, as well as any conditions specifically affecting the patient's oral health.

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