The orthodontic examination

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The initial examination is one of the most overlooked procedures in the typical orthodontic practice. The 30-second "look-see" exam with only a mouth mirror is no longer adequate when confronted with today's adult patient. Factors of concern for the sophisticated patient entering orthodontic treatment include periodontal disease, TMJ dysfunction, occlusal compromise, dental and facial esthetics, not to mention a desire to be treated in an infection-free environment with the latest in esthetic appliances. If surgery is indicated, questions arise about the various types of fixation, cost, insurance coverage, as well as the possibility of nonsurgical alternatives.

Planning for the orthodontic examination should begin before the patient even arrives with a careful screening by telephone. The patient's portion of the medical history questionnaire can be mailed for completion prior to the scheduled appointment.

If your receptionist or appointment coordinator usually reviews the medical history with the patient prior to your clinical examination, the education of this individual must be given priority in your office. A couple of examples will suffice to illustrate the importance of an accurate medical interview. In the *Journal of the American Dental Association* (November, 1989), Lockhart, Crist, et al., reported on a study of the reliability of a medical history in the identification of patients at risk for infective endocarditis. They found little correlation between those patients identified by a medical history as having a heart murmur and those who were actually found to have a pathologic condition warranting prophylactic therapy. Does your staff have a working knowledge of the risk that bacterial endocarditis poses to the orthodontic patient? How do you get this information from patients if they do not accurately complete the medical history form?

Many older patients take a number of medications, some so routinely that they often fail to think of them as drugs. Is your health history and subsequent questioning sufficient to bring out these details? Learning about the medications routinely prescribed for specific diseases can help you identify problems early, or at least ask the right questions. There are some diseases an individual may want to hide from the examiner. Sexually transmitted diseases as well as human immunodeficiency virus (HIV) infection and AIDS are the first that come to mind. In this regard, the clinician and staff personnel must examine their own attitudes about these problems and be prepared to cope with treatment needs.

The clinical portion of the initial examination is characterized by its thoroughness. A routine should be developed that enhances the clinician's ability to discover the unusual ... the uniqueness of the individual being examined. Because complete orthodontic records are required before treatment is planned, I am less concerned with findings that will be recorded on study casts, radiographs and photographs than I am with gathering information **not** otherwise obtained

Dentition

A tooth-by-tooth inspection will reveal wear facets, stains, cracks, restorative problems, caries, not to mention evidence of previous trauma, questionable vitality, etc. The caries-free mouth of a ten-year-old cannot compare in complexity to the dentition of a fifty-year-old with its demands for a multi-disciplinary approach to treatment.

After examining the dentition, spend time determining where the maxillary and mandibular midlines are and how they are related to the face. Note whether the occlusal plane is tilted to one side or the other.

Periodontium

According to Brown, Oliver, et al. (*J. Periodontal* 1989), "The prevalence of periodontitis increases with age from 29 percent of persons in the 19-44 year age group to close to 50 percent in those 45 years or older. Moderate periodontitis is found in 28 percent of all persons while only eight percent had advanced disease."

As a minimum, the orthodontic exam should include an evaluation of overall gingival health. Are tissues inflamed? Do they bleed upon probing? Check the mobility of teeth and use a perio probe to determine interproximal pocket depth in the molar areas. Additional probing may be indicated if pockets in excess of four millimeters are discovered. Most clinicians will defer to a periodontist at this point.

Functional analysis/TMJ

Time taken to evaluate occlusal function prior to the initiation of treatment will pay dividends in the adult patient. It is not unusual for an individual with a Class II skeletal relationship to have a longstanding habit of posturing anteriorly. Some patients will maintain this postural position until either splint therapy is initiated or fixed orthodontic appliances are placed. Even the experienced clinician will be forced to alter his treatment plan rather hurriedly when this occurs.

Therefore, careful identification of anterior-posterior shifts, lateral shifts and cross-arch interferences is critical. If the possibility of comprehensive orthodontic care is realistic, this is the time to order a facebow transfer for the mounting of casts at the time diagnostic records are gathered. A wax set-up of treatment options may be helpful as well.

Whether or not the patient has any complaints of temporomandibular joint dysfunction, an examination of head and neck musculature is in order. The range of opening is noted and joint sounds identified. A special TMJ exam form is used with every patient presenting with symptoms to ensure thoroughness.

Facial balance

Stand back and look at the individual as seen by others. What characteristics make this face unique? Without thinking about treatment opportunities or limitations, concentrate on what you see. Pay attention to the nose and its place in the face. Study the lower third of the face from an oblique view as well as from the full face and profile views. If the mandible is deficient ask the patient to protrude for better visualization of the potential correction. If the maxilla is deficient, use moistened cotton rolls to support the upper lip.

Before completing the clinical portion of the examination, ask about accidents. Eleven percent of the population have chin scars from childhood. If trauma is the major cause of TMJ problems today, do you know what problems your patients have experienced before initiating orthodontic treatment?

Ask about familial problems, if appropriate, and always remember that you are not an expert on everything. It may be important for you to seek the advice of other health care providers seen by this individual. Be sure to get permission in writing before seeking other medical records.

Lastly, make some evaluation of the level of cooperation required by the prospective patient for the successful completion of anticipated orthodontic treatment. Just how motivated is the individual? A treatment plan comprised of periodontal grafting, extractions, comprehensive orthodontics, jaw surgery and extensive restorative care will require a great deal more motivation than a plan to realign mandibular incisors. A part of this motivation is cost and the patient's resources. And don't forget about the occasional dental phobic — they're still out there.

With completion of the clinical examination it is time to discuss relevant findings and propose a course of action. This usually means that complete diagnostic records (study casts, cephalometric and panoramic radiographs, intra and extraoral photographs) be gathered. Before release of the individual it is important to ask again if he/she has questions. Only when all questions related to the individuals' perception of their dental problem have been answered, should the examination be considered complete.

If the prospective patient takes from your first meeting a sense of thoroughness and feels a concern on your part for their dental needs, you will have completed a successful orthodontic examination.