

DOWNLOAD PDF DETERMINING THE LOCATION OF DYSTOPIC TEETH AND INDIVIDUAL TOOTH ROOTS

Chapter 1 : A Guide to Root Canal Treatment: Costs, Pain Management and More

Panoramic radiography -- Intraoral dental radiographs -- Conventional skull films, and radiographic anatomy -- Computer tomography, radiographic anatomy -- Magnetic resonance imaging -- Determining the location of dystopic teeth and individual tooth roots -- Depiction of sialoliths -- Radiographic film, conventional processing, processing errors -- Radiography using digital systems.

Lingual Relationship of tooth to anterior border of ramus[edit] This type of classification is based on the amount of impacted tooth that is covered with the mandibular ramus. It is known as the Pell and Gregory classification, classes 1, 2, and 3. Complications[edit] Erupted teeth that are adjacent to impacted teeth are predisposed to periodontal disease. Since the most difficult tooth surface to be cleaned is the distal surface of the last tooth, in the presence of an impacted tooth there is always gingival inflammation around the second molar that is invariably present. Even this minor amount of inflammation can provide bacteria access to a larger portion of the root surface that results in early formation of periodontitis compromising the tooth. Even in situations in which no obvious communication exists between the mouth and the impacted third molar there may be enough communication to initiate dental caries tooth decay. For most people there exists a balance between the host defenses and the oral microbiota but if the host defenses are compromised like during minor illness such as influenza or an upper respiratory tract infection , pericoronitis results. Another common cause is entrapment of food beneath the gum flap also called an operculum. Pericoronitis can present as a mild infection or severe infection. In its mildest form it is just a localized tissue swelling and soreness whereas in severe forms the swelling is slightly larger even sometimes creating trismus difficulty opening the mouth. Occasionally, an impacted tooth causes sufficient pressure on the roots of adjacent teeth causing it to resorb. An impacted tooth occupies space that is usually filled with bone. This weakens that area of bone and renders the jaw more susceptible to fracture. When impacted teeth are retained completely within the alveolar process , the associated follicular sac is also retained along with it. Though in most persons the dental follicle maintains its original size sometimes it may undergo cystic degeneration and become a dentigerous cyst or a keratocyst. Symptoms[edit] Most commonly the individual complains of food getting lodged beneath the gums and a soreness that is usually confused with throat infections. In slightly milder forms a swelling is visible and mouth opening becomes difficult in severe cases. Pain is invariably present. Management[edit] All impacted teeth, unless otherwise contraindicated, are considered for surgical removal. Thus, dental extractions will often take place. The type of extraction simple or surgical often depends on the location of the teeth. In some cases, for aesthetic purposes, a surgeon may wish to expose the canine. This may be achieved through open or closed exposure. Studies show no advantage of one method over another. Cochrane Oral Health Group, ed. Explicit use of et al.

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Chapter 2 : Human tooth - Wikipedia

Contents: Panoramic radiography -- Intraoral dental radiographs -- Conventional skull films and radiographic anatomy -- Computed tomography, radiographic anatomy -- Magnetic resonance imaging -- Determining the location of dystopic teeth and individual tooth roots -- Depiction of sialoliths -- Radiographic film, conventional processing, and.

Orthodontic teeth braces complication. The dental x-ray radiograph shows the extent of the tooth damage. The 9 tooth root was then extracted from under the tooth crown to allow the gum and bone to heal eight months before the completion of her dental braces. This patient preferred to keep this unattractive crown during her orthodontic treatment to minimize simultaneous cosmetic changes, but a cosmetic temporary dental crown could also have been used during this time. A dental implant will be placed by the Oral Surgeon about three months following the tooth extraction. The second stage dental implant connection will coincide with the braces removal by the Orthodontist. This periapical dental radiograph x-ray shows widening of the periodontal ligament space " PDL space " especially noticeable around the upper lateral incisor " associated with orthodontic tooth movement " teeth braces. This will return to normal in subsequent dental xrays following the completion of tooth movement. Pictures and dental radiograph x-ray. The black dotted line shows the location for a potential root resection if necessary. Scaling and root planing was performed after the teeth splint was placed and the patient will return in three months for the Periodontist to reevaluate periodontal healing and the potential need for the root resection. Notice the diastema teeth space was closed with dental bonding to hide the splint and the incisal edge of 8 was shortened. How to pictures with periapical x-ray. Tooth extraction of the root of a hopeless tooth 26 and teeth splinting the coronal portion of this tooth to the adjacent teeth in a 40 year-old female. Note the extent of the bone loss seen in the xray. The wire is doubled to prevent the tooth from rotating around it after placement. This patient has already been through two rounds of root planing and scaling. After healing of this extraction site she will then have an apically positioned flap periodontal surgery and then possibly a graft to build up this area. It is expected that some other method for tooth replacement will be utilized following this periodontal therapy. Clinical and radiographic diagnosis of severe gum disease. Treatment of a periodontally involved upper left central incisor tooth 9. Note the angular bony defect in the xray. The patient reported that the tooth was getting longer and that he never previously had the tooth gap space between his two front teeth. Dental bonding was placed between the teeth to close the tooth space and it also hides the palatal splint. The incisal edge of 9 was shortened and the occlusion teeth bite was checked and adjusted for fremitus. Scaling and root planing was next performed by the dental hygienist and the patient scheduled for a three-month periodontist reevaluation. Tooth root resection from under a large porcelain fused to metal dental bridge. This area could be filled in with dental bonding after wound healing. The occlusion teeth bite on the distal cantilever was reduced. It opposed a lower full arch bridge so that supraeruption was not a concern. This teeth bridge has remained stable to nine years since this dental treatment. Full mouth dental reconstruction of a phobic 36 year-old female. Initial visit photos and panoramic x-ray. It is important to determine what teeth, if any, may be saved at least temporarily. It is easier for a patient to emotionally adjust to a provisional temporary fixed dental prosthesis that has at least some amount of retention provided by natural teeth abutments. With dental fear patients it is wise to start radiographic diagnosis using a panoramic xray rather than taking many individual periapical and bitewing x-rays because it is easier for the patient. One may need the detail offered by these xrays at a later time perhaps when the patient feels more comfortable. These periapical and bitewing x-rays show severe periodontal gum disease in a year-old dental fear phobia patient. Note in the xrays the significant horizontal bone loss and the lack of radiographic calculus. Tooth 26, adjacent to the vertical bony defect, is probably hopeless. This patient was treated with two rounds of scaling and root planing then periodontist reevaluation. Tooth 15 was extracted and 14 had root canal treatment for tooth pain and a dental crown Patient presented with her upper left central incisor flared labially. The patient, who was in her twenties, was informed about the severe periodontal

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condition and that the prognosis for this tooth was guarded at best. She was informed that a thorough Periodontist examination was needed. Orthodontics teeth braces is contraindicated " not recommended " here because of the severe periodontal gum disease. If the patient accepts treatment on a tooth with a guarded prognosis, it could include: Treatment, otherwise, could include just scaling and root planing and incisal adjustment. Patients typically prefer to save teeth as long as the periodontal infection in the gums can be controlled. Calculus is plaque that becomes hardened by absorbing salivary calcium and then becomes evident on x-rays. It usually indicates the chronic presence of plaque and is not healthy. A dental prophylaxis teeth cleaning with the dental hygienist and then possibly scaling and root planing is usually indicated. The hygienist should look at each dental xray radiograph to see the location of the calculus during the periodontal treatment. This is frequently followed by a Periodontist evaluation. Dental calculus is plaque that becomes hardened by absorbing salivary calcium and then becomes evident on radiographs x-rays. It usually indicates the chronic presence of plaque and is associated with many diseases of the gums. A teeth cleaning, and then possibly scaling and root planing is usually recommended followed by periodontal reevaluation with a Periodontist. A dental xray is very important part of periodontal diagnosis. Radiographic x-ray series of a smile makeover. This root canal treatment on nine teeth was performed by an Endodontist in one visit while the Cosmetic Dentist and Dental Laboratory Technician created the lab-processed provisional temporary dental crowns. In these periapical x-rays note that the root canal filling material extends to the tooth root apex. Tooth 29 was later extracted. Radiographic x-ray evidence of Occlusal Trauma. Note in the radiograph the widening periodontal ligament space. Occlusal adjustment " bite adjustment " should be considered a part of periodontal therapy. Occlusal periodontal " combined teeth bite and gum " problems. It is common for middle-aged patients to visit with a chief complaint that the upper front have moved and that a tooth gap space has developed. A dental radiograph or series of x-rays is needed for initial diagnosis. Fremitus " vibration movement " of an upper front tooth upon closing the teeth " biting " is also commonly seen and needs to be corrected. Notice the deep bite occlusion. Consider lower anterior incisal adjustment. The Periodontist will probably recommend periodontal scaling and root planing and then gum surgery in the upper anterior from the palatal. Following gum healing consider either upper orthodontic movement " teeth braces " to bring these teeth back palatally or cosmetic dentistry. Radiographic interpretation of a periapical x-ray is important in dental diagnosis. Many dentists unfortunately treat patients without xrays. Periodontal gum disease symptoms diagnosis and treatment based upon a dental x-ray radiograph and clinical examination. A full mouth series of dental xrays confirmed there were no other areas of bone loss. How to gum disease treatment pictures and dental xray.

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Chapter 3 : Systemic and dental factors affecting the prognosis of teeth :Dental Tribune USA

Tooth cracks represent a day-to-day finding in our dental practices. It is our goal to save teeth for a lifetime for all of our patients. Proper diagnosis and crack treatment will provide longevity and predictability of care.

This article has been cited by other articles in PMC. The objectives of the present study were to assess the prevalence rate of caries on individual permanent tooth surfaces, and to compare individual tooth surface caries rates among gender and age groups. Without drying the teeth, examinations were performed with dental mirrors and blunt, sickle-shaped explorers under a dental chair light, according to WHO recommendations. Caries distribution was higher in the maxillary jaw. Except molars, approximal surfaces of all teeth demonstrated the highest caries rates, ranging from Occlusal fissures on the first and second molars contributed most significantly to caries frequency, from Approximal surfaces of incisors, canines, premolars and occlusal fissure sites in molars showed the highest caries rates in both sexes. Caries were most common among individuals aged 17 to 25 years. Approximal surfaces of incisors, canines, premolars and occlusal surfaces in molars had the highest caries rates in all age groups, except for individuals older than 65 years of age. Gender and age do not affect the prevalence of caries on teeth sites. In addition, more caries are experienced in younger age groups, and their incidence decreases as age increases. During that period, the elderly face a wide spectrum of oral and general health problems. This paper also compared these results among various gender and age groups. Then, according to their diagnoses, patients were referred to related departments, such as orthodontics, endodontics, oral surgery, periodontology, prosthetic dentistry and pedodontics, for treatment. After the second examination, the conservative treatment e. Without drying the teeth, examinations were performed with dental mirrors and blunt sickle-shaped explorers under a dental chair light, according to WHO recommendations. Firstly, caries teeth were identified, and a diagnosis of caries was made only when there was clear evidence of loss of tooth substance. White or brown spots in enamel, the surfaces of which remained intact and glossy, were not considered to be caries. Caries were recorded as present when a lesion in a pit or on a smooth tooth surface had a detectably softened floor, undermined enamel or softened wall. On approximal surfaces, caries were recorded when the explorer had entered a lesion. If the pattern of caries experience was symmetrical between the left and right sides of the mouth for both maxillary and mandibular teeth, the left and right surfaces were combined for each tooth. Therefore, in total, 16 master charts were prepared, one for the upper and lower right teeth, and for the upper and lower left teeth. These charts included five figures: Furthermore, the age and gender of the patients were recorded on the chart for each caries tooth. The location of dental caries on the teeth surfaces was recorded as follows: Thus, seven sites for molars and six sites for premolars, canines, incisors were coded. If lesions were involved on more than one surface, each impacted surface was recorded separately. In addition, the recorded ages on the chart for each caries tooth were coded in six groups: We also used the Mann-Whitney U test in order to compare differences in caries rates of individual tooth surfaces between age groups. The distribution of caries teeth according to jaw and tooth number is shown in Table 1. Regarding the distribution of caries within individual teeth, the first and second maxillary molars were most susceptible to caries at Distribution of examined caries teeth according to jaw Percentage of total caries surfaces.

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Chapter 4 : Diagnostic Aids

Dental anatomy is a field of anatomy dedicated to the study of tooth structure. The development, appearance, and classification of teeth fall within its field of study, though dental occlusion, or contact between teeth, does not.

Split root Vertical root fracture Understanding and identifying these five types can provide guidance for treating cracked teeth. The vertical order of these cracks, from top to bottom, signifies the general prognosis for a particular crack. That is, craze lines have a good prognosis, whereas a vertical root fracture has a very poor prognosis. Craze lines Craze lines are micro-fractures of the enamel only. They may also be termed enamel infractions. The micro-fractures are contained within the enamel only. They do not penetrate into the dentin layer. All teeth have craze lines. They are more often seen in anterior teeth as vertical striations within the enamel. They are also seen on marginal ridges. Trans-illumination provides clear observation of craze lines. Tooth trauma can contribute to craze lines. This trauma can be the result of blunt force or more recurrent functional forces, such as bruxism and parafunction. There are typically no symptoms with craze lines. Treatment can be for esthetic reasons only and the prognosis is very good. Prevention of bruxism, parafunction and excessive trauma from occlusal forces is recommended Fractured cusp Fractured cusp is defined as a complete or incomplete fracture of the crown of the tooth extending subgingivally. The extent and degree of the fractured cusp is variable. The most common cuspal areas to fracture are the lingual cusps of the lower molars and the buccal cusps of the upper molars. The fracture originates on the occlusal surface and extends gingivally along a buccal or lingual groove and the mesial or distal marginal ridge. Undermined cusps from existing restorations are also a contributing factor. The fractured cusp may break and separate entirely at the time of a traumatic event. The resultant tooth segment may be attached to the gingival tissues and be required to be removed. The remaining exposed tooth area may be sensitive to temperature until it is restored. Alternatively, the patient may have complaints of biting or temperature sensitivity prior to the complete cuspal fracture. Once the fractured cusp is removed, the biting pain is relieved. Transillumination can be helpful in fractured cusp identification. The transilluminated light will not penetrate beyond the fractured segment into the rest of the tooth. Depending on the degree of the fracture, there is a good prognosis for retaining the tooth. Root canal therapy or crown lengthening procedures may be needed if the extent of the fractured cusp is significant. Cuspal coverage is recommended for those teeth that exhibit early fractured cusp symptoms. Maintaining tooth integrity using crowns or onlays may prevent crack propagation and fracture. Continued and recurrent patient observation is recommended long-term. Cracked tooth A cracked tooth is defined as an incomplete fracture initiated from the crown and extending subgingivally. The crack is usually in a mesial-distal direction. The crack may extend through one marginal ridge or may extend through both proximal surfaces. The vertical depth of the crack is also variable. The crack may be entirely contained within the crown of the tooth, or it may extend vertically into the root portion of the tooth. A cracked tooth is more centered, occlusally, than a fractured cusp. Also, because a cracked tooth may progress apically, rather than laterally, there is a greater chance of pulpal and periapical pathosis. The location and extent of the crack may be difficult to determine. Some cracks are easily seen with magnification, or because they are stained from bacterial migration. Additionally, some cracks are identified with a dental explorer because they have caused a true separation of the enamel. However, the extent of the crack on the surface enamel does not correlate directly to the extent of the crack apically. Patient symptoms are variable, as well. Others will not exhibit any symptoms. Excessive occlusal forces are a contributing factor to creating tooth cracks. Weakened tooth structure from existing restorations also contributes to tooth cracks. Undermined cusps and marginal ridges create an environment for cracks to occur. Removal of old restorations is recommended for evaluation of crack extent and depth. There are numerous diagnostic tests available for cracked tooth situations. Removing old restorations in the presence of a crack is a starting point. Magnification is paramount for aiding in evaluation of the extent of the crack. The crack may be visualized extending along the pulpal floor from mesial to distal.

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This is a pathognomonic sign of root fracture to be discussed next. Pulp vitality and patient symptoms will aid in determining the extent of the crack. Tooth cracks are highly variable in extent and symptoms. Cracked tooth treatment is variable and is dependent on crack extent, operator experience, judgment and patient symptoms. There are no definitive restorative recommendations in the literature about treatment of cracked teeth. Proper diagnosis and preventive strategies are recommended for the treatment of cracked teeth. Obviously, root canal treatment is possible if pulpal and periapical symptoms dictate need. But cracked tooth treatment may be as limited as replacement of a direct restoration to full or partial cuspal coverage. Depending upon the crack extent and depth and structural integrity of the remaining tooth, the restoring dentist must decide what mode of treatment is appropriate. The dentist's experience will play a role as to whether or not and to what extent the cracked tooth is maintained and restored. Cracked tooth prognosis is always questionable. There is always the possibility that the crack will progress, even if cuspal coverage is performed. Limiting the amount of tooth flexure is the goal with bite adjustment and cuspal protection. But the micro-movement of tooth function can contribute to crack propagation over the long term. Not all cracked teeth are destined to fail. But depending on patient circumstances, occlusal stability and patient cooperation, a cracked tooth may eventually fail. Removing damaging habits for example, by providing a night guard and controlling bruxism, covering cusps and counseling patients on the variability of cracked tooth treatment are recommended preventive strategies. In cases of cracked teeth, the patient should be informed of the questionable prognosis associated with this condition.

Split Tooth "Split tooth" is defined as the complete fracture initiated from the crown extending subgingivally. It typically extends through both marginal ridges and the proximal surfaces to the proximal root. A split tooth is the end result of a cracked tooth evolution! The tooth segments are entirely separated. The split may occur suddenly, but is typically the result of the long-term growth from an incomplete crack. Again, damaging habits, such as bruxism, parafunction, ice chewing, etc. There may be pre-existing pain with mastication, but not always. Sometimes a split may occur where only a single root may be affected. Once the tooth is removed, tooth replacement may be discussed and initiated.

Vertical Root Fracture A vertical root fracture is a complete or incomplete fracture of the root in a buccal lingual direction. The fracture may extend the length of the root or as a shorter segment along any portion of the root. There may or may not be patient symptoms associated with the fracture. Many times they are discovered on routine periapical x-rays. Virtually all vertical root fractures are associated with a history of root canal treatment. Existence of a sinus tract or a narrow, vertical periodontal pocket along the root surface is consistent with vertical root fracture. The prognosis of vertical root fracture is virtually hopeless in all cases. Prevention of vertical root fracture is important. Minimizing dentin removal during root canal therapy will provide better structural integrity for tooth longevity. Avoid posts and post build-ups if possible. Reduce condensation forces during root canal obliteration. Cuspal coverage following root canal treatment is always advised. Tooth cracks represent a day-to-day finding in our dental practices. It is our goal to save teeth for a lifetime for all of our patients. Proper diagnosis and crack treatment will provide longevity and predictability of care.

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Chapter 5 : Root Canal in Dogs - Procedure, Efficacy, Recovery, Prevention, Cost

Revised and updated to be easier to use, this Tooth Meridian Chart shows you further that the mouth and body are interconnected. Problems in the teeth can have a direct influence on another organ (or organs) in the body.

Advice What is Root Canal? The tooth is comprised of three layers, the outer enamel, the middle dentin, and the inner pulp. The inner pulp is a living dental tissue formed by blood vessels, lymphatic vessels, connective tissue, and nerves. Its function is to support and nourish the tooth, as well as help it respond to stress. This critical and sensitive pulp tissue is located in a tunnel shaped hollow area inside the center of the tooth, which is called the endodontic system or root canal system. When the tooth is damaged by fracture or trauma, this root canal system is exposed, becomes painful, and can get infected. Endodontic therapy or root canal therapy is a surgical treatment that involves the removal of the infected inner pulp, the sterilization of the root canal, and the replacement of the infected tissue with dental material to provide antibiotic action. This treatment can restore the tooth to function. Although any licensed veterinarian can perform root canal therapy in dogs, the procedure requires specialized equipment, materials, and expertise, so treatment from a qualified veterinary dentist is recommended. **Book First Walk Free!** If the dog shows any sign of pain, the dog is referred to a qualified veterinary dentist. A dental X-ray will be needed to determine the condition of the tooth. Due to the dynamic nature of dogs, anesthesia will be required to perform an X-ray. With the result, the veterinarian dentist will be able to assess the impact of the injury, as well as the treatment, which is determined based on the tooth affected, the type and severity of the fracture, and the time elapsed between the trauma and the detection. If a root canal therapy is chosen, the procedure can usually be performed under the same anesthetic period used for the X-ray. Once the dog is under general anesthesia and local anesthesia, the veterinary dentist will drill a couple of small holes into the tooth and use a series of nickel titanium files for internal root canal shaping and cleaning. As sterilization, the infusion of a diluted bleach solution is used to destroy bacteria. Once cleaned, the canal space is flushed. Finally, the root canal is sealed to prevent bacteria from leaking back in. The seal is made with a synthetic rubber, a mixture of epoxy resin cement and gutta percha filling, which is a rubber-like substance that does not support bacterial growth. An adequate seal will form itself to the curves and the shape of the inside of the canal. However, for the root canal therapy to be successful, a radiograph must be taken immediately after completion, to confirm that the root canal has been properly filled. Not so long ago, the only available treatment for dog teeth that were infected or dead was extraction. It still is an alternative to root canal therapy. Before extraction, a significant amount of bone must be drilled away. Extraction brings more discomfort for the dog and causes complete loss of function since the tooth is no longer there. Root canal therapy is much less traumatic and maintains the normal function of the tooth. **Root Canal Recovery in Dogs** Following a root canal therapy, the animal is usually able to go home the same day. Pain medication and sometimes antibiotics are prescribed. The veterinarian dentist may suggest a soft food diet for the first several days as the gums may be sensitive. After a week, a check-up is scheduled. Further complications are uncommon, although dental radiographs should be performed to confirm the success of the root canal therapy at four to six months, a year, and two years. **Cost of Root Canal in Dogs** Root canal therapy in dogs costs roughly the same as it does for humans. Sometimes, even the materials used may differ for individual cases. Additionally, the number of roots the tooth has will influence the cost of the procedure since all the roots need to be properly treated. **Dog Root Canal Considerations** Dental fractures are common in veterinary medicine. Dogs are susceptible to a wide variety of dental fractures which are often the result of excessive chewing behavior. A root canal therapy enables the patient to keep the tooth, and the trauma and recovery from an extraction procedure are avoided. However, root canal treatment requires periodic radiographic follow-up. **Root Canal Prevention in Dogs** All breeds of dogs can suffer dental fractures, although brachycephalic breeds short-headed, snub-nosed may be predisposed to sustain fractures of their prominent fourth premolars. A fracture can develop after falling onto hard surfaces or due to chewing on

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objects such as toys, furniture, fence posts or rocks. For crated pets, owners should avoid the varieties with bars if their dogs chew on them, especially with anxious dogs. Rubbery, plastic toys are considered safe. However, owners should not assume any dog toy is good for their dog. Cow hooves, animal bones, hard nylon toys, and ice cubes are potentially problematic. A veterinarian can advise on which toys are appropriate for a particular dog. It is important to consider that animals rarely show visible signs of discomfort. Pets tend to hide their pain to avoid being singled out by a predator. The truth is, the dog is affected locally as well as systemically, and ignoring the problem is not a good option. Doing so will help the dog and will make detection of any fractures easier.

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Chapter 6 : Dental Implants | Middletown Commons Family Dental

The cone-beam CT may provide a better image, demonstrating the exact location of the tooth and its proximity to adjacent roots and vital structure, and may also be beneficial for localizing teeth that will be exposed.

In the era of evidence-based dentistry, outcome studies have forced us to re-examine our treatment approaches. Periodontal prognosis refers to the expected longevity of teeth. Determination of periodontal prognosis is an integral part of periodontal practice and it influences treatment planning directly whether to treat, retain or remove periodontally involved teeth. While many considerations from the periodontal literature apply, new information and techniques should be considered to retain teeth or not. Periodontal prognostication systems Historically, the prognosis of a tooth was defined based on tooth loss. Another system was introduced by Kwok and Caton, which determines prognosis on future periodontal stability. Overall versus individual tooth prognosis When projecting prognosis, many factors are to be evaluated. These factors are then synthesized into a scheme for determining a periodontal prognosis. Although longitudinal studies have indicated that non-surgical and surgical treatments generally were maintainable, long-term stability is still subject to many variables. Tooth-specific influences include the amount of attachment loss, crown-root ratio, position in the arch, presence or absence of furcation invasions and other anatomic and restorative factors. Studies consistently show more periodontal disease and generally greater severity of disease in older as opposed to younger people. Bacterial plaque is the primary etiologic factor associated with periodontal disease. Individuals who smoke more than 10 cigarettes per day have an increased risk of more severe periodontal disease, a less predictable response to initial therapy and a more complicated therapeutic response. With all other factors being equal, a patient who continues to smoke will have a worse prognosis than one who either does not smoke or quits smoking. Diabetic patients have a higher prevalence of periodontal disease and greater attachment and bone loss. Genetic factors may play an important role in determining the nature of the host response. It was suggested that genetic polymorphisms in certain genes involved in the immune response e. The better his or her plaque control, the better the long-term prognosis. Persons with severe periodontal disease are likely to be less conscious of their health, resulting in a worse prognosis. The complex treatment of patients with advanced periodontal breakdown is very expensive. Deep probing depths and attachment loss are associated with future periodontal breakdown due to limited access for maintenance and opportunistic changes in the environment to favor periodontal pathogens. Crown-root ratio is also a measure of attachment loss, especially when dealing with short roots. The example on this page demonstrates poor crown-root ratio related to a developmental anomaly in a patient with short roots Fig. The greater the amount of attachment loss in the furcation, the worse the long-term prognosis for that tooth. Teeth with minimal Class I or no furcation invasions generally have a good prognosis. Teeth with complete loss of bone in the coronal aspect of the furcation Class III generally have a poor prognosis, and regeneration of this type of defect is not predictable for most clinical situations. Therefore, teeth with Class III furcation have an unfavorable treatment outcome. Teeth such as the maxillary premolars, which have pronounced root concavities, are also more difficult to instrument and maintain, and likewise have a worse prognosis than teeth with relatively straight roots. While some authors have found that increased mobility is a factor that negatively influences the survival of a periodontally affected tooth⁵, others describe no association between tooth mobility and treatment outcome. Severe mobility of a tooth is generally an indicator of a poor long-term prognosis. Overhanging restorations and ill-fitting crown margins represent an area for plaque retention and increased prevalence of periodontal lesions. Prognosis can be stratified in the prognosis of the overall dentition and prognosis of individual teeth. Prognosis should primarily have a scientific and evidence-based approach that also is predicated upon clinical experience, individual patient factors and luck. Development of an accurate prognosis has an underlining economic importance. Prognosis of the overall dentition leaves clinicians and patients to choose appropriate treatment plans based on the expected lifetime of teeth. For example, if the majority of teeth have a poor or

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questionable prognosis, treatment plan options may favor full-mouth extraction and complete dentures. Another patient with the majority of teeth with a poor or questionable prognosis may be motivated for dental implants and a fixed prosthesis. Development of a prognosis for individual teeth or combined with dental implant treatments may add levels of complexity to the treatment plan and have far reaching economic consequences. Utilizing natural teeth as abutments for a fixed prosthesis or individual crowns must be reasonable. Patient issues such as overall health, impacted medications, dental IQ, oral hygiene, etc. The determination of a prognosis is an evolving and dynamic process. Therefore, it is reasonable to try to predict a long-term prognosis, but reassessment is often needed for a prolonged period. Therefore, reprognostication occurs after each examination of the patient. Non-controlled type 2 diabetes in a year-old patient Fig. Short roots Table 1: Factors that may affect a prognosis About the authors Dr. Belinda Brown-Joseph is director of the graduate periodontal clinic and associate professor of periodontology and oral implantology at Kornberg School of Dentistry at Temple University, Philadelphia. Samia Hardan is an assistant clinical professor of periodontology and oral implantology at Kornberg School of Dentistry at Temple University, Philadelphia. Hoexter is a clinical professor of periodontology and implantology at Temple University School of Dentistry, Philadelphia, and editor in chief of the Dental Tribune U. Sebastien Dujardin maintains a private practice in periodontics in Lille, France. Suzuki is a professor of microbiology and immunology at the School of Medicine, Temple University, and professor of periodontology and oral implantology at Kornberg School of Dentistry at Temple University, Philadelphia. A complete list of references is available from the publisher.

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Chapter 7 : Determination of Prognosis | Pocket Dentistry

dbrittleness of teeth that have undergone endodontic (root canal) treatment. You can help your dentist determine which tooth is causing the problem by noting when.

Not everybody has these and they are often removed as a matter of course. Since each individual root may have one or more canals, it can take several hours to properly clean and fill a single tooth. When is a root canal needed? If you have regular dental checkups your dentist should be able to identify and treat any tooth decay before it penetrates the root system. Your tooth is sensitive or painful when consuming hot or cold food and drink It hurts to bite down One of your teeth is loose If you ignore these root canal symptoms, you may find they disappear over time. Swollen gums around the infected tooth Swelling in your face Pus oozing from your tooth or gum Discolouration of the tooth Going to the dentist as soon as you experience any kind of tooth pain should help prevent the infection from spreading to this more serious stage. If your root canal pain comes on suddenly and over-the-counter painkillers have no effect you should book an emergency dentist appointment. They may not perform an emergency root canal on the spot, but can at least give you stronger pain relief until you are able to have the treatment you need. Do I need a root canal or extraction? The main priority of your dentist should be to preserve your natural teeth for as long as possible, rather than extracting them. When a tooth is removed it can affect how you eat and put extra strain on the surrounding teeth. Over time the jaw bone at the extraction site can recede, causing changes to your facial appearance. X-rays will show how far the infection has spread But if the bacterial infection has spread through a lot of the tooth and the remaining structure is not enough to support a filling or crown, extraction may be the only option. Your dentist will usually begin by taking x-rays of the affected area to determine the extent of the infected root canal. From these images they will be able to see how many canals the affected tooth has, where they are positioned, and how many of them require treatment. They can then plan your course of treatment and let you know what to expect. Note that if you have an infected wisdom tooth, there are certain situations where your dentist may opt to extract it rather than perform a root filling. The root canal procedure There are four main root canal treatment steps needed to restore a deeply infected tooth. These usually take place over one or two visits to your dentist. The number of visits required will depend on which tooth is being treated and the complexity of its root system. Dental x-rays will give your dentist a good idea of the length of your visit s. Front tooth root canals tend to be more straightforward because they are easier to access and the canals are generally straighter and wider. This means that a root filling on a front tooth is usually quicker to complete than on a tooth at the back of the mouth. Preparation A dental dam helps protect you and your tooth during treatment After taking x-rays to plan your treatment, your dentist or endodontist will administer a local anaesthetic. This rubber sheet fits around a single tooth to isolate it from the rest of your mouth. This serves three purposes: When choosing a dentist to treat your infected root canal, ask whether they use a rubber dam to keep the tooth sterile. If not, consider finding one who does. Opening the tooth Using a drill, the dentist will make a hole in the top of your tooth or at the back of a front tooth through which he can access the pulp chamber and root system. Tiny little files are used to clear away the damaged and dead pulp and nerve tissue from inside the tooth and roots. These very thin files help clean the narrow canals Root canals are very thin and are often curved, so it can take some time for the dentist to locate all of the canals and ensure all traces of infected material are removed. They often use special microscopes and bright lighting to help them see right inside the tooth. If you have an abscess at the end of your tooth root, it will be drained at this point. The narrow and irregular shape of root canals makes them difficult to fill properly. This process can take a few hours for teeth with several roots and canals. Cleaning Next, the inside of the tooth is cleaned thoroughly using water and an antibacterial solution this may be done several times during the filing process, too. Your dentist uses a syringe to squirt the cleaning solution into your tooth, then it is sucked back out. This is repeated several times to ensure the area is completely sterile. If your treatment is too complex to complete in one visit, your dentist will fill the roots with some

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medication to kill any remaining bacteria. He will then apply a temporary filling to protect the tooth in between visits. This filling is removed when you return to complete your treatment. This is often done with a thermoplastic material which, when heated, softens to fit the exact shape of the chamber. Dentists insert a number of thin cones into the canal and then compress them under heat to ensure complete filling. Once the roots are filled, the remaining space in the tooth is filled and restored just like a normal filling. This provides an extra seal to protect the roots from any more bacteria. A crown may be added to strengthen the treated tooth

Crowning optional Because a tooth is more fragile following root treatment, your dentist may recommend you have a root canal and crown. It covers the entire tooth to protect it from further damage. To fit a crown, your dentist first has to shave some of the enamel off the outside of your tooth. Once fixed in place it should feel and function just like a natural tooth. Fitting a crown will, of course, add to the cost of your treatment. Your dentist may wait a few weeks before beginning the process of crowning your tooth, just to be certain that the root canal filling was successful. The video below gives a quick summary of the procedure: How long does treatment last? Endodontics is a common dental practice with a relatively high success rate. Many go on to last a lifetime. Giving up smoking if you currently smoke will help prolong the effectiveness of any dental work while improving the overall state of your teeth. If you experience problems with a tooth years after having a root filling, it may be possible to perform a root canal re-treatment and preserve the tooth for even longer. One side-effect of root treatment is the tooth may darken over time. How much does a root canal cost? This flat fee applies regardless of how many visits you need or how many teeth are treated provided it all relates to the same course of treatment. So, the cost of root canal work with the NHS is relatively inexpensive. However, not everyone is able to find an NHS dentist accepting new patients. In this case you will need to see a private dentist and the root canal treatment cost will be significantly higher. Eastern European countries like Hungary and Poland can be reached in just a few hours on a budget airline flight. Read more about your options in our full guide to dental tourism. Many dental insurance plans cover endodontic work to some extent. If you have one, find out what percentage of root canal costs it will cover. Is a root canal painful? Many patients worry about root canal treatment pain and may put off getting the treatment they require because of fear it will hurt. Fortunately, the anaesthetic technology used by dentists these days means the procedure can be performed with minimal discomfort. It should feel no different to having a regular filling, except it will take a while longer. For patients experiencing significant root canal pain prior to treatment, endodontic therapy in fact provides considerable relief. Many patients report having greater discomfort in their jaw as a result of holding it wide open for so long than in the treated tooth. Your dentist should administer anaesthetic before starting any work. Ask your dentist for a way to signal if you start feeling pain at any point during the treatment. During this time you can take ibuprofen or paracetamol to ease any discomfort. You may find it more comfortable to only eat soft foods until your mouth feels back to normal. If you experience continuing pain after taking painkillers or notice any other side-effects you should contact your dentist straight away. This is a sign of a failed root canal procedure and you may need extra dental care. Root canal complications and problems

Despite the relatively high success rate of endodontic treatment, some patients do experience problems. Root canal complications can occur anywhere from a few days to a few years after the initial treatment. A failed root canal can be the result of: The dentist missing a canal during initial treatment A canal being incompletely treated i. The process for this is much the same as the original treatment, although it is complicated by the presence of the artificial tooth filling. A dental implant can replace a tooth which has failed root canal work In most cases, the alternative to root canal re-treatment is extraction. If a root canal fails because of re-infection at the tip of the root, it may be possible to perform endodontic surgery. This involves making a small incision in the gum to access the root tip directly. This allows the original structure from previous treatment to remain in place. If you are concerned you may have a failed root canal, contact your dentist as soon as possible. The earlier it is treated, the less opportunity there is for the bacteria to cause more damage. And remember, having regular dental checkups and maintaining good oral hygiene will reduce your chances of getting a tooth infection in the first place. Costs, Pain Management and More 3.

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Chapter 8 : Tooth impaction - Wikipedia

An impacted tooth is one that fails to erupt into the dental arch within the expected developmental time. Impacted teeth do not erupt, they are retained throughout the individual's lifetime unless extracted or exposed surgically.

Tooth enamel Enamel is the hardest and most highly mineralized substance of the body. It is one of the four major tissues which make up the tooth, along with dentin, cementum, and dental pulp. At the edges of teeth where there is no dentin underlying the enamel, the color sometimes has a slightly blue tone. Since enamel is semitranslucent, the color of dentin and any restorative dental material underneath the enamel strongly affects the appearance of a tooth. Enamel varies in thickness over the surface of the tooth and is often thickest at the cusp, up to 2. Proteins of note in the development of enamel are ameloblastins, amelogenins, enamelines and tuftelins. It is believed that they aid in the development of enamel by serving as framework support, among other functions.

Dentin Dentin is the substance between enamel or cementum and the pulp chamber. It is secreted by the odontoblasts of the dental pulp. Dentin is a mineralized connective tissue with an organic matrix of collagenous proteins. Dentin has microscopic channels, called dentinal tubules, which radiate outward through the dentin from the pulp cavity to the exterior cementum or enamel border. Their length is dictated by the radius of the tooth. The three dimensional configuration of the dentinal tubules is genetically determined.

Cementum Cementum is a specialized bone like substance covering the root of a tooth. Cementum is excreted by cementoblasts within the root of the tooth and is thickest at the root apex. Its coloration is yellowish and it is softer than dentin and enamel. The principal role of cementum is to serve as a medium by which the periodontal ligaments can attach to the tooth for stability.

Pulp tooth The dental pulp is the central part of the tooth filled with soft connective tissue.

Tooth development Radiograph of lower right third, second, and first molars in different stages of development

Tooth development is the complex process by which teeth form from embryonic cells, grow, and erupt into the mouth. Although many diverse species have teeth, their development is largely the same as in humans. For human teeth to have a healthy oral environment, enamel, dentin, cementum, and the periodontium must all develop during appropriate stages of fetal development. Primary teeth start to form in the development of the embryo between the sixth and eighth weeks, and permanent teeth begin to form in the twentieth week. A significant amount of research has focused on determining the processes that initiate tooth development. It is widely accepted that there is a factor within the tissues of the first pharyngeal arch that is necessary for the development of teeth. The staging of tooth development is an attempt to categorize changes that take place along a continuum; frequently it is difficult to decide what stage should be assigned to a particular developing tooth. The tooth bud sometimes called the tooth germ is an aggregation of cells that eventually forms a tooth. It is organized into three parts: The dental papilla contains cells that develop into odontoblasts, which are dentin-forming cells. Cementoblasts form the cementum of a tooth. Osteoblasts give rise to the alveolar bone around the roots of teeth. Fibroblasts develop the periodontal ligaments which connect teeth to the alveolar bone through cementum.

Tooth eruption Bottom teeth of a seven-year-old, showing primary teeth left, a lost primary tooth middle, and a permanent tooth right

Tooth eruption in humans is a process in tooth development in which the teeth enter the mouth and become visible. Current research indicates that the periodontal ligaments play an important role in tooth eruption. Primary teeth erupt into the mouth from around six months until two years of age. These teeth are the only ones in the mouth until a person is about six years old. At that time, the first permanent tooth erupts. This stage, during which a person has a combination of primary and permanent teeth, is known as the mixed stage. The mixed stage lasts until the last primary tooth is lost and the remaining permanent teeth erupt into the mouth. There have been many theories about the cause of tooth eruption. One theory proposes that the developing root of a tooth pushes it into the mouth. Another, known as the cushioned hammock theory, resulted from microscopic study of teeth, which was thought to show a ligament around the root. It was later discovered that the "ligament" was merely an artifact created in the process of preparing the slide. Currently,

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the most widely held belief is that the periodontal ligaments provide the main impetus for the process. The onset of primary tooth loss has been found to correlate strongly with somatic and psychological criteria of school readiness. Of these, cementum is the only one that is a part of a tooth. Periodontal ligaments connect the alveolar bone to the cementum. Alveolar bone surrounds the roots of teeth to provide support and creates what is commonly called an alveolus , or "socket". Lying over the bone is the gingiva or gum, which is readily visible in the mouth. Periodontal ligaments[edit] The periodontal ligament is a specialized connective tissue that attaches the cementum of a tooth to the alveolar bone. This tissue covers the root of the tooth within the bone. Each ligament has a width of 0. The groups of fibers are named alveolar crest, horizontal, oblique, periapical, and interradicular fibers. The nerve fibers can then send the information to the central nervous system for interpretation. Alveolar bone[edit] The alveolar bone is the bone of the jaw which forms the alveolus around teeth. Osteoblasts create bone and osteoclasts destroy it, especially if force is placed on a tooth. An area of bone receiving tension from periodontal ligaments attached to a tooth moving away from it has a high number of osteoblasts, resulting in bone formation. Gingiva[edit] The gingiva "gums" is the mucosal tissue that overlays the jaws. There are three different types of epithelium associated with the gingiva: These three types form from a mass of epithelial cells known as the epithelial cuff between the tooth and the mouth. The junctional epithelium, composed of the basal lamina and hemidesmosomes , forms an attachment to the tooth.

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Chapter 9 : How To Classify the 5 Types of Cracked Teeth - Spear Education

Delta Dental is America's largest and most trusted dental benefits carrier. We cover more Americans than any other dental benefits provider - and strive to make dental coverage more accessible and affordable to a wide variety of employers, groups and individuals.

Figure out the cause of your tooth discoloration by answering simple questions. Types of tooth discoloration and their causes - Agent, General appearance - Chromogenic compounds foods, beverages, other consumables - The dark compounds found in products we consume coffee, tea, cola, wine, tobacco, etc In most cases the discoloration is generalized, meaning that it tends to affect all teeth and tooth areas somewhat equally. Tetracycline and related antibiotics - Tetracycline tooth stains can be yellow-brown or possibly blue-grey in color. The pattern of the staining can be quite varied. It can appear as isolated areas or lines but more likely involves broad bands or whole-tooth discoloration. Characteristically, multiple teeth are affected. The blemishes may show evidence of surface pitting. Typically, multiple teeth are involved. The process can be triggered by events such as trauma, or needing to or having had root canal treatment. Only those teeth directly affected by the event frequently just a single tooth are affected. The affected area will lose its glossy sheen and on close inspection may show evidence of surface damage. As the decay process advances, the involved area typically takes on a tan, brown or black coloration. The lesion itself may first become noticeable as a small dark spot or blemish that grows in size over time typically months to years, frequently involving obvious tooth destruction. A dark spot, line or underlying halo effect may develop at the edges of the failing restoration. Areas of associated tooth decay may be visible. The staining is typically most intense in those areas that are hardest to keep clean, such as near the gum line. Answer the questions below to get a better idea of the possible causes of the type of tooth discoloration you have. The staining has - Always existed. In most cases, this type of tooth staining is either: Formed over some time. Two of the most common causes of gradually forming tooth discoloration are: For individual teeth, causes can include tooth decay, issues associated with existing dental restorations or changes that have occurred inside the tooth in response to nerve injury or death, or as a result of having had root canal treatment. This is the type of debris that a dental cleaning should be able to remove. Sudden discoloration of isolated teeth may be due to recent tooth trauma. What portion of each tooth is affected? Does the discoloration involve - All teeth. The cause of the staining may be age related, due to exposure to chromogenic agents coffee, tobacco, etc Prolonged systemic exposure to medications such as tetracycline or fluoride during tooth development may also result in whole-tooth staining. In some cases, the formation of surface staining due to poor oral hygiene may be the cause. When just isolated teeth are affected, look for causes such as a history of tooth trauma or root canal treatment. Other possible causes can include extensive tooth decay, factors associated with a large existing filling or the formation of surface stain on individual teeth that are difficult to clean. Just spots, lines, patches. Does the discoloration involve - All or most teeth. When just isolated areas of many teeth are affected, a common cause of staining can be a repeated systemic exposure to medications such as tetracycline or fluoride during tooth development. In cases where dental plaque is not controlled, formation of white-spot lesions an early form of tooth decay may be the cause. Just one or a few teeth. When isolated areas of just one or a couple of teeth have discolored, look for causes such as tooth decay, a stained or deteriorated dental filling, or surface staining due to lax oral home care. Severe cases of fluorosis can involve surface pitting. Specific details about types of tooth discoloration. Whitening results at least this good are commonplace. People who have a regular and continued exposure to chromogenic agents such as tea, coffee, cola, red wine or tobacco products will likely find that their teeth have become dingy-looking or yellowed over time. In more extreme cases, the discoloration may have a burnt-orange or brown tint. Any consumable that has a strong coloration such as blueberries, cherries, cranberries, soy sauce has the potential to cause this effect. As a rule of thumb, if you regularly expose your teeth to something that would stain your clothes, it has the potential to darken them too.

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The degree of darkening that occurs generally correlates with the regularity and level of exposure that the person has to the agents that have caused it. You may be able to minimize the effects of chromogenic foods by brushing immediately after consuming them. With beverages, try rinsing with water immediately afterward or else drinking through a straw. Additional product selections are shown at the bottom of this page. Individual teeth that have white fillings may stain more so. B Systemic exposure to medicinal compounds tetracycline, fluoride. The exact type or pattern of staining that forms simply depends on: And usually in matching left-right pairs since teeth on both sides of the mouth will be at the same point in development at the same time. The discoloration may be: Generalized has affected the appearance of the entire tooth or have caused wide bands of staining. Appear as individual although frequently multiple splotches, patches, lines or ribbons of stain. Severe generalized tetracycline staining. The related medicines minocycline and doxycycline can cause this same problem too. This type of staining: Is typically yellow to yellow-brown in color, although it can have a blue-grey tint instead. The discoloration may affect the entire tooth as a result of prolonged exposure or be band-like if the medicine was administered in courses. A diagnosis of tetracycline staining can be confirmed by using an ultraviolet light a "black" light , which makes the teeth fluoresce. As a standard rule, tetracycline and related antibiotics should not be prescribed for children eight years and younger, or for pregnant women. The long-term use of tetracycline and minocycline has been reported to cause tooth discoloration even in adults. This is a point long after tooth formation has been completed. For this reason, chronic use of these medicines should be avoided if possible. Sometimes called "snow capping. Having an appropriate exposure to fluoride creates some very significant anti-cavity benefits. But if a child ingests an excessive amount during that time period when their teeth are developing, a type of tooth staining termed "fluorosis" can result. This page explains fluorosis A to Z: Causes, pictures, prevention, treatments. The staining can take the following forms: With mild cases, the blemishes are lusterless, chalky-white patches or streaks that run across the surface of the teeth. In moderate cases, the color of the staining can be yellow or even brown. Severe fluorosis tooth staining. With the most severe cases, the surface of the affected teeth can be pitted and the teeth themselves malformed. Additional treatment options for fluorosis-affected teeth. Some of this can be attributed to the effects of chromogenic agents such as coffee, cola and tobacco products see above. How light enters into and reflects back out of a tooth. With age, thinner enamel and darker underlying dentin results in tooth darkening. What we visualize as the color of a tooth stems from the way it reflects light. That means, anything that alters the enamel, or the color of the dentin, will change the apparent color of the tooth. It typically becomes darker as more of it is created within the tooth due to normal physiologic and reparative processes this is referred to as secondary dentin formation. It would be most common that age-related darkening would affect all teeth somewhat equally. Teeth that have a naturally dark baseline color. There can also be color variations that are obvious yet normal. Some people have teeth that tend to be more blue-grey, others more yellow-brown. This range of normal is why when you have a porcelain crown or white filling placed that your dentist gets out their "shade guide. E Individual tooth darkening due to internal changes. Teeth whose nerve tissue has undergone changes, or have had root canal therapy, frequently darken. In some cases, it may have a pink to purple hue. The staining may be uniform, or most intense and darkest nearest the gum line. This tooth needs root canal treatment. The release of iron pigments from decomposing red blood cells inside the nerve space of the tooth they contain the iron-rich compound hemoglobin. This decreases the overall translucency of the tooth, thus making it appear darker. If an individual tooth has darkened, especially one that has a history of receiving trauma even many years before , it may be an indication that the health of its nerve tissue has been seriously compromised. If so, there is potential that the tooth might at some time experience an acute flare up pain, swelling. For this reason, any individually darkened tooth should always be evaluated by a dentist. White spot lesions resulting from poor home care while wearing braces.