

Description of the three periodontal
procedures observed at the office of Dr.
Andrew Dow.

Periodontal Office Observation

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LCC Dental Hygiene Class of 2015

PERIODONTAL SPECIALTY PRACTICE OBSERVATION REPORT**Observations**

First Procedure, 8:35-9:15 – Extraction of #18 and Bone Graft at Extraction Site – Osteo-preservation

The patient presented with a chronic infection to #18 and in the surrounding cortical bone. Radiographs showed a decrease in bone density surrounding the affected tooth. Dr. Dow informed the patient that he thought the cause to have possibly stemmed from a root canal therapy previously performed on the tooth that may have fractured one of the roots, leading to infection. He explained that this is not an uncommon occurrence with root canal therapy, but is usually undetected until signs of infection appear.

Local anesthetic was given to the patient; lidocaine was used for a left inferior alveolar block and artacaine for a left long buccal injection. Profound anesthesia was tested using the probe and then it was used to check probing depths of the distal, straight facial, furcation, and mesial areas of the tooth. A depth of 11 mm was found in the area of the furcation. While Dr. Dow retracted the patient's cheek, the patient was advised that he may experience slight sensations of pressure during the procedure. Dr. Dow then informed me that the idea behind today's procedures was to basically remove the tooth and clean up the area. While using his Minnesota retractor to pull the patient's cheek away from the site and while his assistant used the surgical suction in the area, he then proceeded to "wiggle" the tooth loose using pliers. Once the tooth was removed, a visible vertical line was found on one of the roots, proving Dr. Dow's theory of root fracture. The distal root was retained, so criers were used to pry it loose. Gauze and the surgical suction (on lightly) were used to remove extra blood and debris from the surgical site.

“Clean-up” followed, which included the removal of infected tissue and bone with a spoon curette and surgical suction. The probe was used to check for adequate removal of “boggy”/infected tissue. Resistance to the probe indicated presence of healthy tissue, but as the probe was walked through the area, it suddenly sunk. This alerted Dr. Dow to the need for more removal of tissues. He explained that when bacteria infect an area from a fractured root “nasty scar tissue” adheres to the bone and the teeth (granulation tissue). This is what he was removing from the area. A hemostat was used to excise tissue tags. While explaining that the removal of infection is paramount to preventing systemic infection, Dr. Dow showed me how the dark-pigmented bacteria were visible in the chunks of removed tissue. There was a lot of tissue to remove, which made the procedure extensive and “tedious.” Irrigation was used to aid in visibility while doing a final check for residual infection.

Next, a sheet of mesh (polypropylene) was placed into the extraction site using locking forceps. Zimmer Puros brand bone grafting material was placed and packed into the site. The assistant would remove the needed amount from the packaging with forceps and then would drop it into the site where the dentist would pack it into place. Dr. Dow used a spoon to adjust the 2 cc of bone added to the extraction site. This was a substantial amount of grafted material, but was necessary due to the large amount of infected tissue removed. Another piece of polypropylene was added and Chroma-Gut resorb-able surgical continuous sutures placed. Dr. Dow stated that he “tied one end, other end, zig-zagged, and tied.” The tissue “moved good,” which supported the decision for resorb-able stitches. If the tissue had not been as movable, then non-resorb-able stitches would have been placed, adding the need for removal to the treatment plan. This was a primary closure. Finally, the assistant dabbed the area with a 2x2 held by a hemostat and then had the patient bite down on a quartered piece of gauze to help with the clotting process.

Post-op instructions were given, including following a structured diet: liquids and purees for the first week, then soft foods for the second. The patient was instructed to take all of his antibiotics. The patient's prescription pain medications could be taken if needed, and could be piggy-backed with ibuprofen (600 mg QID). A 200 mg tablet of ibuprofen was given to the patient to take before he left, along with extra gauze and written instructions. He was told not to use straws and that he would be scheduled back for a 3 month recall appointment.

Second Procedure, 9:15-10:15 – Implant [re]Placement #9 with Class II Sedation (IV)

The patient from the second procedure required IV sedation due to extreme dental anxiety. When I entered the room, the assistants had already inserted the patient's IV and were hooking her up to the heart/vitals monitor. The fluid they used to transport the sedative through the IV and to the patient's bloodstream was sodium chloride 0.9%. Dr. Dow first administered 2 mg of Versed, but ended up increasing this in increments as needed until a total of 6 mg was given intravenously. Benzocaine topical was applied in the area of the maxillary anteriors, with bilateral Anterior Superior Alveolar blocks and a Nasopalatine Block given with articaine. During local anesthetic administration, the patient moved her head, prompting Dr. Dow to administer more sedative to the patient.

Next the gingiva apical to #9 was incised and retracted using an Orban type instrument to determine placement of the new implant. Using a pre-fabricated custom guide that slipped over the patient's maxilla, Dr. Dow used a high speed drill with water and a Zimmer size 2.3 B tube implant adapter to start pre-drill a place for the implant to go. The guide plate was then set aside. To check the pathway and make sure that it would be ideal, a direct digital PA was then taken; which showed good placement of the adapter. More drilling was completed with a second PA

taken. In this film, the tip was too far mesial. The drill was switched to a 22 bit, which was up one size from the starting bit. Dr. Dow asked his assistant for her opinion on the pathway/angle of the bit and guide and proceeded with more drilling. While preparing for the third PA, Dr. Dow explained that the last time the patient had an implant placed for #9 the tip pushed too far towards the lateral incisor, so this time they were taking a few precautionary steps to ensure that placement would be more ideal (decreasing chance of implant failure). This time, the radiograph showed that the drill had taken a nice straight path. The guide plate was placed back over the maxilla. After testing the chosen implant size, Dr. Dow decided to use a shorter implant (4.1X13 → 3.7X13) and began placing it using a Zimmer 3.4 B adapter tube slowly and gently. Dr. Dow stopped during the procedure to perform a check by retracting the tissue flap created by his earlier incision. Unhappy with his findings, he backed the drill out and tried again and then successfully placed the implant.

A bone allograft mixed with water by the assistant was then packed in around the implant since the bone was “high.” Another PA was taken, and the implant looked great. The guide was then removed and HC343 Orochromo sutures were placed. A final PA and photo were taken. Bilateral ASAa with articaine and NP were given to patient since her anesthesia was wearing off and her prescription pain medications were at home. Finally, the patient was placed in the upright position for recovery and given her flipper (she has a partial for #9 so that she is not visibly edentulous). Because the patient was still recovering from sedation, she was seated in a wheelchair to exit the operatory and meet with her ride. The ride was also given the patient’s written homecare instructions.

Originally, this procedure included a [soft] connective tissue graft, but the patient’s tissue looked “good,” so Dr. Dow changed the treatment plan.

Third Procedure, 10:25-11:55 – Implant Placement #5, Surgical Removal of Excess Facial Bone-Exostoses

Prior to this procedure, the assistant showed me how she sets up the operatory by running through all the procedures in her head and making sure that all needed materials would be available and ready for use. She also double checks the room for sterility as she says, "sometimes surgeries get messy." When the patient was seated, the assistant inquired as to whether or not he had gotten his prescription filled. The patient confirmed that he had both gotten his prescription and had also been taking his antibiotics. The patient had an implant before (not in the same spot) and reported that he did not have any complications with it and so expected the same to be true with the new implant. The patient was then outfitted with a head-cap and large patient napkin.

Dr. Dow began his time with the patient by first explaining what was to come. Next he checked with the patient regarding medications. The patient was taking propranolol for high blood pressure, but Dr. Dow said this drug was not a contraindication for administering a local anesthetic with epinephrine. Benzocaine topical was applied, followed by both a Middle Superior Alveolar Block and a Greater Palatine Block, both with articaine. Before proceeding, a "before" photo was taken.

A size 15 blade was used to do a mid-crestal incision of the soft tissue. Before the incision was completed, it became apparent that anesthesia needed to be more profound, so more anesthetic was given (MSA). Dr. Dow then made the incision and elevated the flap for implant positioning. The implant site was then probed and a location 9 mm from the edge of the exostoses was located; this was to be where the implant would be placed. During probing, some slight suppuration was noted.

Using a 22mm drill and “pin,” Dr. Dow did his first drilling. This was followed, of course, by a PA. It was determined that it needed to be tilted more to the distal. While viewing this radiograph, Dr. Dow explained the theory of SLOB to the patient: if the object moves in the same direction that the PID was moved in a second radiograph, then it is located on the lingual. If it moves in the opposite direction from the PID, then it is on the buccal. More drilling was begun. The drill was used with water, surgical suction, and regular suction all at once during this time. Another PA was taken and Dr. Dow was happy with the results. After probing to double check the depth, a 5.4X4.1 implant was selected for placement (and another of Dr. Dow’s assistants was set to retrieve it).

A small round surgical burr was selected for exostoses removal. Unfortunately, the flap was not adequate for bone removal, so a size 9 blade was used to make a vertical incision. The tissue was retracted, exposing the sizable excess facial bone. Another picture was taken. The dentist used a Minnesota retractor to hold back the flap (this seems to be Dr. Dow’s “retractor of choice;” he almost always has one in hand). Next he worked an instrument around the base of the protruding bone superior to #6. He had his assistant hold this instrument in place to lift the tissue for better access with the round burr. The round burr was then used with a surgical drill and surgical suction to slowly take down the excess bone. An Orban file and a Prichard curette were used to remove residual bone and to smooth out the facial surface. He then proceeded to retract and smooth under the tissue as well, instead of creating another flap.

The implant tip was finally inserted before Dr. Dow added Zimmer Puros particulate allograft bone material to the site. A “couple sprinkles” of material were placed around the implant area. The implant was tightened once more and then the area gently irrigated. A hemostat was used to pull the flap back over the facial bone. The tissue was slightly thin, so Dr.

Dow decided to prepare and place a connective tissue autograft to fortify and “bulk up” the area. An AMSA was given with articaine. Then an incision was made on the palate, just posterior to the implant side. A second parallel incision was made about 2 mm from the first, and the ends of the two incisions were connected. Locking forceps were used to pull the tissue from the excision site and to place it under the surgical flap. Polypropylene sutures were placed. Dr. Dow explained that his office always uses size 6 or 7 sutures in the anterior region. A size 15 and a size 9 blade were used to trim excess tissue from the marginal area for esthetics. The sutures placed in the anterior region were very extensive (mesial of #4 through mesial of #7), so it took close to 10 minutes just for suture placement. Healing of the incision site will be by primary intention.

A final PA and photograph were taken and then post-op instructions given. The patient was told to apply pressure with gauze for 3-4 minutes. He was also instructed to use a cotton swab with chlorhexidine around the healing cap daily until the permanent crown is placed. This patient was also placed on a special diet of liquids and purees for the first week, then soft foods the second.

Management Software

This office uses Panda Charting software for their patient charts. This charting system has tabs for each category of procedure where the dentist/assistants can enter specifics regarding the patient and that particular visit. Tabs included those for medical history updates, vitals, and procedures (soft tissue, osseous procedures, sutures, local anesthesia, general anesthesia, etc.). Types of materials used (such as implant sizes or types of sutures) are recorded, procedure complications, and any other information pertinent to the care given.

Reflection

Periodontics is the specialty branch of dentistry that focuses on preventing, diagnosing and treating diseases of the gums and supporting structures of the teeth. The role of the periodontist is to take on individual patient cases and procedures involving the periodontium that require extensive knowledge/expertise/training. Examples of patients who should be treated by a periodontist (according to the AAP article “Guidelines for the Management of Patients with Periodontal Diseases,” September 2006) are as follows-

Any patient with:

- Severe chronic periodontitis
 - Furcation involvement
 - Vertical/angular bony defect(s)
 - Aggressive periodontitis (formerly known as juvenile, early-onset, or rapidly progressive periodontitis)
 - Periodontal abscess and other acute periodontal conditions
 - Significant root surface exposure and/or progressive gingival recession
 - Peri-implant disease
- Any patient with periodontal diseases, regardless of severity, who the referring dentist prefers not to treat

The rationale for referral is often based on both patient needs on a case-by-case basis, as well as the dental office’s policies as determined by its dental team. There is no one-size-fits all approach to a healthy periodontium.

The procedures and services performed in a periodontal specialty practice usually include the following:

Periodontal Scaling & Root Planing (SRP)

Pocket Reduction Surgery

Gingivectomy

Flap Surgery

Regeneration Surgery

Root Amputation

Bruxism Treatment

Gum Recession

Crown Lengthening

Implant Placement

Connective Tissue and Bone Grafts

Antibiotic Therapy

Hygiene Services