



Dental Specialists
OF AMERICA

Dry Sockets: A Preventable Disease The Whole Story

By Dr Richard B Liposky. Copyright © 2015.

Introduction:

For forty years, and thousands of extractions, we have yet to have a dry socket occur as the result of our surgery. Have we treated dry socket? Yes. These dry socket cases were patients in distress from other practitioners who were not available at the time.

So, how can we treat patients all this time without dry socket complications and patients treated by other clinicians are not so lucky? Is it the magic potion that we used during extractions? No...we don't have any. Is it the time of day that we do the surgery, or the age of the patients, or the insurance carrier, or the alignment of the stars? No...none of these.

Most patients who are about to have an extraction, particularly wisdom teeth, fear, if not asked about, the chances of getting a dry socket. After completing a consultation, the patient may ask, "Doc, you didn't mention dry sockets." When we tell them that our patients do not get dry sockets, first it is disbelief and second, they begin to relate stories of friends and relatives who have experienced the event.

Patients will describe multiple return visits to the clinician for flushing and packing of the painful surgical site. We have had surgery assistants join our teams who worked in other offices. They thought that the Monday, Wednesday and Friday morning routine treating of dry sockets was the norm in a surgery practice. It is a painful unnecessary experience for the patient and costly both financially and to the reputation of the practice.

Note: If both the patient and the doctor feel that the dry socket complication is a normal consequence of an extraction, patients will accept and endure the discomfort and inconvenience and doctors will not change their techniques. We have found that 95% of the prevention of the dry socket complication lies at the hands of the surgeon. Only 5% involves the patient's post op compliance to instructions. So let's go through the etiology, prevention and treatment of the dreaded dry socket.

What is a Dry Socket?

A dry socket is a term to describe the breakdown of the healing process following the extraction of a tooth. The cause is within the first 24 hours, but the symptoms do not develop for at least 48 hours after the surgery.

Healing of the extraction site.

When the tooth is extracted, a blood clot fills the extraction site. This clot matures to fibrin and then a fibrous matrix. Blood vessels grow into the site. The cells differentiate into bone matrix and finally hard bone is formed. This process takes 4 to 6 months. The initial healing, clot to blood vessel to early cellular differentiation takes approximately 4 to 6 weeks. By that time, the patient is comfortable and does not have any symptoms from the surgical event.

This process is called "healing by primary intention." Anything that disrupts the primary healing process results in a breakdown of the wound. This requires a repair of the breakdown and the initiation of a new healing mechanism. This is called "healing by secondary intention." This would be similar to picking at a skin wound, resulting in the buildup of redundant tissue, possible infection, and scar formation.

In the extraction socket, if the clot or healing matrix breaks down, the bone is exposed and the body first works to cover the bone and then heal (fill) the socket with new bone. The exposed bone is painful and requires irrigation and packing by the surgeon. Depending on the cause of the disruption, healing could add several more months and result in a bone defect (hole in the jaw).

Causes of a Dry Socket:

Anything that interferes or disrupts the primary healing process may, can and often will cause the dry socket.

1. Surgical technique. There are various schools of thought regarding managing the extraction site.
 - a. Suturing vs open wounds. Some techniques recommend leaving the wounds open while others suggest suturing all the wounds.
 - b. Some advocate removing the tooth in pieces rather than removing bone.
 - c. Some suggest cutting the bone dry while others work with irrigation systems.
 - d. Flap design to access the impacted tooth can greatly affect post op response.
2. Infection control.
 - a. Failure to remove debris from the surgical site will result in a delayed host response. The body will have to remove the debris before healing can occur. Some clinicians will send the patient home with a syringe to irrigate the wound rather than clean it out at the time of surgery.
 - b. Antibiotic coverage is important to prevent infection. It is a common practice to pre-medicate patients who have cardiac stents, joint replacements or valvular heart disease. Therefore, we must assume that we will have bacterial invasion in the surgical site. Bacteria may come

from the normal bacteria in the mouth, from periodontal disease or from the infected tooth.

- c. If the normal bacteria found in the mouth get into the surgical site, they have a perfect media to grow, the blood clot. (In the lab, we grow bacteria on blood agar plates.) Doctors who oppose preventive antibiotic coverage will wait until the patient has symptoms of infection...the wound is breaking down. By then, healing will be by "secondary intention." The patient will be in pain.

3. Host (patient) response

- a. Diabetes, certain medications, transplant patients may have a delayed healing response. It is important in these patients that special precautions be taken to prevent a delayed healing response.
- b. Smoking has long been implicated as a "cause" of dry sockets. It is not the sucking on the cigarette or a straw that causes wound failure. We now know that nicotine, the addictive element in tobacco, actually delays vascular proliferation (growth of blood vessels). That means that as the clot matures, the expected blood vessels never show up. All the ingredients for healing that are to be delivered through the blood vessels to the healing socket never get to the site. The wound slowly breaks down. The patients start to have pain.
- c. Tobacco, all types, including the nicotine patch have the same affect on wound healing.

4. Mechanical intervention by patient or doctor:

- a. In order to prevent food entrapment in the surgical site, patients are often given a syringe to irrigate the wound. More often than not, the patients will flush out the healing clot resulting in delayed healing. The intent is good but not necessary.
- b. Some practices have their patients come in on the 2nd post op day for irrigation of the surgical site. Too early and not necessary. It is also costly to the practice and an inconvenience to the patient.

Prevention:

1. Surgical Technique: at the hands of the surgeon

- a. Adequate flaps without tension
- b. Atraumatic retraction...always on bone
- c. Copious irrigation before, during and after extraction
- d. Remove burnished bone and debris
- e. Primary closure when possible
- f. Flaps under tension will break down. If you need heavier suture, flaps are too tight.
- g. Do not pack socket with any magic fixes

2. Post op care: at the hands of the patient
 - a. Bleeding is controlled with gauze. Do not discharge a patient who is bleeding. We suggest that the patient sleep with head elevated and the sore side up.
 - b. Ice packs should not be necessary if an atraumatic surgical technique is used. Swelling is a normal host response. It will reach maximum in 48 hours and recede spontaneously. If the surgeon is compelled to use ice, then the surgical technique should be re-evaluated.
 - c. Pain meds should support the surgical event. We never give more than 12 narcotic pain pills with any surgery. We initiate pain control by raising the pain threshold with OTC ibuprophen 400mg every 3 to 4 hr and use narcotics for breakthrough pain. Most patients get by with less than six narcotic pain pills in the course of treatment.
 - d. Antibiotic coverage is routine for surgery. The type may vary according to the spectrum or host response. We are either treating an infection or preventing a wound breakdown due to infection.
 - e. There are no restrictions on diet once the feeling returns. We encourage softer foods but the patient will be the best judge. Good nutrition is imperative for good healing.
 - f. Smoking should be eliminated. Patients addicted to nicotine may not be able to stop using tobacco. In those cases, strict adherence to the post op protocol is important. Remember, dry sockets are a preventable disease.

Treating Dry Socket:

1. Irrigation and packing the socket with medicated gauze packs gives the patient immediate relief. These are usually replaced every two to 4 days until the patient can get by without them.
2. Initiate antibiotics. I have not seen dry sockets in a patient who is already on antibiotics. Occasionally, in patients with a delayed healing response due to medical issues, we may change the spectrum of the antibiotics.
3. Pain meds to support the patient's needs.

The Dry Socket business marketplace.

There are many concoctions on the market to prevent or treat dry sockets. There are socket fillers put in at the time of surgery. There are medicated pastes and gauzes placed during recall visits. There are special facial ice pack harnesses and post op syringe packs that the patients use at home. We do not dispense or recommend any of these modalities.

It is interesting to see the number of vendors at the national meetings with "their special products to treat dry sockets. There must be a viable market for their products. A recent flier from a vendor advertised a special on post op care supplies. Antibiotic mouth rinses, curved irrigation syringes, facial ice packs, socket pastes, etc. Everything we need to treat dry sockets. Nothing on prevention.

Where we are today.

When we first used the techniques described in this monograph, surgical colleagues complained that we did not do enough extractions to justify our conclusions. My practice was primarily major facial reconstructive surgery in the hospital. We respected their concern because their practices were mainly taking out teeth.

To confirm our theory, in 1988, we conducted a retrospective study of 1000 consecutive cases. The study not only supported our findings, but also supported our protocols that nearly eliminated post op nausea. When I moved my office to a new facility, we found that the original bottle of iodoform gauze, which was used to treat dry sockets and now 16 year old, was still sealed, untouched, never used.

Now we are 40 years out and I think we have a pretty good track record. It is interesting that most general dentists will listen and implement these protocols. They do not want their patients to have post op complications. Our surgical colleagues seem to simply accept them.

It is time to change the paradigm. Dry sockets should not be expected and feared by the patient. Dry sockets should not be expected or tolerated by the surgeon. If we would only focus on prevention. Dry sockets...a preventable disease.

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