Protecting Dentists.

EDIC RISK MANAGEMENT STUDY

Endocarditis and Dental Treatment

Bacterial endocarditis is a relatively uncommon, life-threatening infection on the inner layers of the heart, including the heart valves. *Streptococcus* bacteria is usually the infectious agent in infections that originate in the tooth or the surrounding areas. *Streptococcus* bacteria is also the infectious agent that causes endocarditis.

It is well known throughout the dental community that oral hygiene is causally linked to general health. Oral infections, including periodontitis, if not timely and properly treated, can cause cardiovascular disease. Two pathways of oral infection that can lead to secondary systemic effects, including endocarditis, are: (1) spread of infection from the oral cavity as a result of transient bacteria in the bloodstream; and (2) injury from the effects of circulating oral microbial toxins (i.e., a periodontal infection).

Treating an oral infection promptly and properly is the chief way to prevent dental-related cardiovascular disease. If left untreated, the bacteria will bind to the platelets that travel through the bloodstream and ultimately deposit in the heart, where the bacteria will continue to colonize, attach, and attack the inner lining of the heart valves. The bacteria rapidly form colonies, grow vegetations on the heart valves, and produce toxins and enzymes, which kill and break down the surrounding tissue to cause holes in the heart valves. The vegetations can break off and spread outside of the heart and blood vessels to the lungs, spleen, brain, and other organs. When left untreated, endocarditis is a fatal disease.

Linking endocarditis to dentistry is difficult as there are no clearly defined parameters on which to make a legal judgment. Generally, successful plaintiffs can prove the association between the infection and dentistry with the type of dental procedure, the culture and isolation of an oral *Streptococcus* from blood, and a short incubation period efore the onset of the patient's symptoms.

What is the standard of care?
Dental patients claiming negligence must prove that the dentist violated the standard of care and this violation caused the patient to develop endocarditis. The standard of care is what a reasonable dentist would have done under the same or similar circumstances.

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Generally, it is a breach in the standard of care to fail to refer a patient to a specialist where needed, to fail to treat with antibiotics where necessary, to fail in follow-up care, to fail to document the treatment plan, to fail to review a patient's medical history and incorporate it into the treatment plan, to fail to use radiographs to properly diagnose a patient, and to fail to advise a patient about his or her diagnosis and properly conduct the informed consent discussion.

Document review of patient's medical history

The most common failure in the standard of care in successful endocarditis claims is failure to report and record a complete medical history. When a dentist reviews a patient's medical history and incorporates that history into his or her treatment plan, it's very important to document that review and incorporation in the progress notes. This evidence can later demonstrate to a judge or jury that the dentist is aware of how the patient's medical condition (e.g., heart valve surgery) can impact their dental care and the dentist made the appropriate treatment decision based on that medical condition (e.g., decided prophylactic antibiotics were necessary).

The dentist relies on the patient relaying the medical doctor's advice on prophylactic antibiotics. The medical doctor will have told the patient of the antibiotic requirement or not. Dentists should consult with medical doctors where 1) the patient is unsure if they were told about prophylactic antibiotics or not, or unsure about the underlying medical diagnosis, or just unable to answer the medical history form questions; or 2) where the dentist hears the medical doctor's advice (as relayed through the patient) and disagrees with it, for whatever reason. There would be a duty to call up the medical doctor at that point and have a discussion, and note the conversation in the record. More on this below.

Basically, if a dentist is unsure about the patient's need for antibiotics, they should consult the patient's primary care physician, specialist, or cardiologist for details before dental treatment. Decisions on management rest with the treating dentist.

EDIC had a recent claim that involved a patient with a heart murmur who came in for a periodontal crown lengthening surgery on #31. Within seven days of the surgery, the patient was in the hospital with endocarditis. He filed a lawsuit against the insured dentist alleging that the doctor failed to premedicate prior to the surgery.

The insured dentist knew about the patient's heart murmur and believed it was benign. The patient did not have any other heart ailments or valve problems. He did prescribe doxycycline and an antimicrobial rinse post-surgery. The patient had a history of antibiotic noncompliance.

The insured acknowledged that prophylactic antibiotics would have been required if the murmur was also associated with other conditions, such as prior endocarditis or certain heart surgeries. He also acknowledged that his chart notes did not record his discussion with the patient about the status of these other questions.

The dentist testified that the patient's treating cardiologist would be the one to make the medical decision as to whether prophylactic antibiotics were indicated for a particular heart condition, and the dentist would normally rely on the patient to tell him whether his cardiologist had ever given such an instruction. However, the dentist acknowledged that his records did not reflect that he ever made inquiry into the murmur.

Luckily, the plaintiff dismissed his claim prior to trial. Otherwise, the defense would have been hampered by this dentist's lack of documentation. Dentists should be sure to document when they review a patient's medical history, especially if they have a discussion with the patient about medical conditions and if they consult with the patient's physician about any medical conditions. Failure to incorporate a patient's medical history into the treatment plan is a violation of the standard of care.

A situation may arise where the dentist and the physician disagree on treatment. If that happens, the dentist must discuss the case with the treating physician and document the discussion. If the disagreement persists, the dentist assumes the decision and the responsibility of its consequences. The dentist must inform the patient of this disagreement and encourage the patient to discuss the issue with the physician.

Remember, patients have the right to make their own health-care decisions, although they should not direct the course of treatment. Informed consent is a protection from liability if the doctor is acting within the standard of care and has explained the risks and benefits and all alternatives available. The dentist is never required to treat outside of the patient's best interest, no matter how strongly the patient may feel about it.

Prophylactic Antibiotics

In the past, patients with nearly every type of congenital heart defect needed to receive antibiotics one hour before dental procedures oroperations on the mouth. However, in 2007 the American Heart Association simplified its recommendations. In 2017, it reinforced that update. Today, antibiotics before dental procedures are only recommended for patients with the highest risk of infective endocarditis, those who have:

- A prosthetic heart valve or who have had a heart valve repaired with prosthetic material.
- A history of endocarditis.
- A heart transplant with abnormal heart valve function.
- Certain congenital heart defects including:
  - Cyanotic congenital heart disease (birth defects with oxygen levels lower than normal), that has not been fully repaired, including children who have had a surgical shunts and conduits.
  - A congenital heart defect that's been completely repaired with prosthetic material or a device for the first six months after the repair procedure.
  - Repaired congenital heart disease with residual defects, such as persisting leaks or abnormal flow at or adjacent to a prosthetic patch or prosthetic device.

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