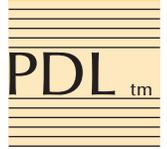


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PerioDontaLetter



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Summer

From Our Office to Yours...

As dentists, we are challenged with the management of the many medical conditions and the various medications which our patients are taking.

*This current issue of **The PerioDontaLetter** addresses the management of patients on anticoagulant medications when oral surgical procedures are indicated.*

Page 3 contains a chart comparing oral anticoagulants — medications which retard or inhibit the coagulation of the blood, thereby reducing fibrin formation and preventing clots from forming and growing — and oral antiplatelets — medications which prevent platelets from clumping and also prevent clots from forming and growing.

The back page addresses gingival hyperplasia related to calcium channel blockers and other medications and conditions

It also contains a chart showing the various medications which contribute to gingival overgrowth.

We hope you find this information helpful. As always, we welcome your comments and questions.

Managing Patients on Anticoagulants Who Require Oral Surgical Procedures

For most dental patients on anticoagulants, no change in medication is necessary prior to undergoing oral surgery.

Discontinuing anticoagulation medications before dental surgery creates a far greater risk of serious, and potentially fatal events than the risk inherent in the bleeding associated with the surgical procedure.

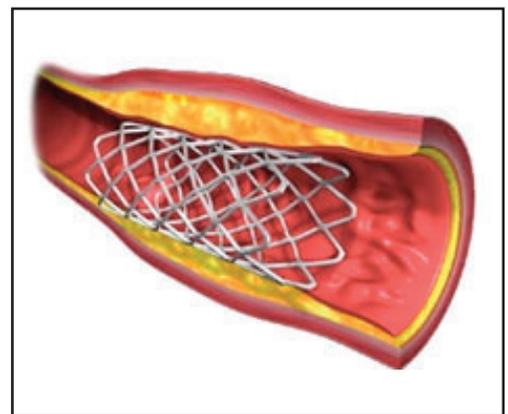
For periodontal therapy with the laser, adjustment of anticoagulant

therapy is hardly ever needed because most lasers seal the blood vessels.

Many patients with atrial fibrillation, artificial heart valves, and clotting disorders are receiving anticoagulant therapy to prevent strokes and embolisms.

With warfarin (Coumadin), the prothrombin time can be adjusted to an International Normalized Ratio (INR) of 3.0 before minor dental

Figure 1. The FDA has warned that stopping anticoagulants in patients with heart stents before dental surgery greatly increases the risk of stent thrombosis, heart attack, and/or death.



surgery, below 2.4 for larger surgeries, and below 2.0 for full mouth extractions. Patients taking warfarin should avoid aspirin and NSAIDS like ibuprofen, naproxen, and metronidazole, which may increase the INR.

Newer anticoagulant drugs are now being prescribed to replace warfarin for prevention of strokes or blood clotting in patients with atrial fibrillation. These include dabigatran (Pradaxa), rivaroxaban (Xarelto), apixaban (Eliquis), and edoxaban (Savaysa). The INR test does not work with these medications, and monitoring is not currently possible. Since these new agents have a predictable effect, and the effect is short term, monitoring is not necessary.

For larger surgeries, these medications can be stopped 36 hours before and resumed one day after, with physician approval.

With these medications, aspirin and NSAIDS like ibuprofen and naproxen double the risk of a major bleed and should be avoided.

Commonly, those individuals at moderate risk of heart attacks are taking aspirin daily. Daily aspirin use seldom, if ever, should be adjusted before dental surgery, as doing so may cause a rebound increase in blood clotting, which in turn increases the risk of myocardial infarction, stroke, or death by 37%, and continues over time. (Sundstrom et al, Circulation, September 26, 2017).

Other medications which affect platelet aggregation include clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta) and ticlopidine (Ticlid).

Normal platelet aggregation returns only when new platelets are produced five to nine days after stopping antiplatelet drugs.

Those patients who have had a stent in a coronary artery usually take a combination of aspirin and clopidogrel (Plavix) or prasugrel (Effient) to prevent re clotting of the stent. The FDA has warned that discontinuing this dual drug therapy greatly increases the risk of stent thrombosis, heart attack, and/or death.

Elective procedures with a high risk of bleeding should be postponed until the dual platelet therapy is completed, usually six to 12 months after placement of the drug-eluting stent.

Antiplatelet medication, including dual antiplatelet therapy, should not be interrupted for simple single or multiple tooth extractions and minor oral surgery. Doganay et al, JADA, February, 2018

Patients with stable heart disease, or who have a bare metal stent, can often stop the dual platelet therapy

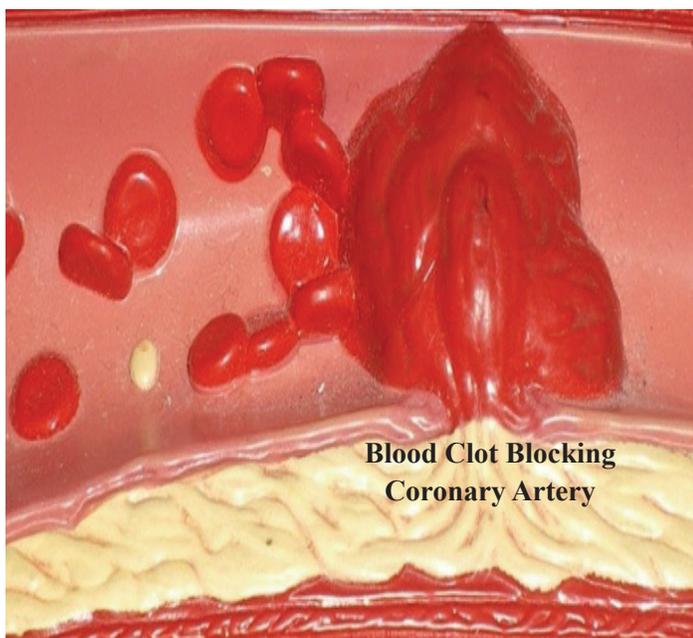


Figure 2. Daily aspirin use seldom, if ever, should be adjusted before dental surgery, as that can cause a rebound increase in blood clotting, which in turn increases the risk of myocardial infarction, stroke, or death by 37%, and continues over time



Figure 3. Bleeding on probing is increased by anticoagulant medications, but is not caused by them.

three months after the stent was placed. All stent patients should continue on 81 mg aspirin daily for a lifetime.

Numerous herbal medicines and natural dietary supplements also have anticoagulant effects, including garlic,

feverfew, ginkgo biloba, vitamin E, and fish oil.

For localized bleeding after surgery, Gelfoam, Avitene, and Surgicel are helpful.

In all cases, consultation with the patient's prescribing physician is

indicated before adjusting anticoagulant medications.

See the chart below for a comparison of anticoagulant and antiplatelet drugs with their mechanism of action.

Comparison of Oral Anticoagulants

Medication

Mechanism of Action

Warfarin (Coumadin)

Inhibits formation of vitamin K-dependent clotting factors
Adjust INR to 2.4 or below for most surgeries

Dabigatran (Pradaxa)

Directly inhibits thrombin

Edoxaban (Savaysa)
Rivaroxaban (Xarelto)
Apixaban (Eliquis)

All of these medications directly inhibit Factor Xa. **With physician approval, stop for 36 hours before surgery and resume one day after.**

Comparison of Oral Antiplatelets

Medication

Mechanism of Action

Aspirin

Inhibits cyclooxygenase 1 and 2
Stay on for almost all procedures

Cilostazol (Pletal)

Inhibits platelet phosphodiesterase III

Vorapaxar (Zontivity)

Inhibits PAR I

Clopidogrel (Plavix)
Prasugrel (Effient)
Ticagrelor (Brilinta)
Ticlopidine (Ticlid)

Inhibit P2Y₁₂ component of ADP receptors
Do not discontinue if taking after a cardiac stent

Avoid taking NSAIDS, like ibuprofen and naproxen, with all these medications.

Gingival Hyperplasia Related to Calcium Channel Blockers and Other Medications and Conditions

Calcium channel blockers are named for their ability to block the movement of calcium across mechanical channels in heart and artery walls. This causes vasodilation which reduces blood pressure. They are also used to treat angina and fast irregular heart rhythms. There are at least eleven channel blockers with different generic and trade names, which can be quite confusing. Nifedipine (Procardia) has the highest reported incidence of gingival hyperplasia, followed by diltiazem (Cardizem), amlodipine (Norvasc) and verapamil (Calan). Switching to a different drug in the same class like isradipine (Dynacirc), or reducing the dose of amlodipine to 5 mg, has been reported to reduce the hyperplasia.

Other drugs that frequently cause hyperplasia are cyclosporine, an immunosuppressant, and phenytoin (Dilantin), an anticonvulsant.

Orthodontic treatment also sometimes results in hyperplasia. (See below.)



Figure 4. Severe gingival hyperplasia during orthodontics.



Figure 5 The same patient after completion of orthodontics and crown lengthening.

Medications Which Cause Gingival Overgrowth

Calcium Channel Blockers

(Listed in Order of Reported Frequency of Overgrowth)

Calcium Channel Blockers	Trade Name
Nifedipine	Adalat, Nifecard, Procardia, Tenif
Diltiazem	Cardizem, Dilacor, Diltiamax, Tiazac
Amlodipine	Lotrel, Norvasc
Verapamil	Covera-HS, Calan, Verelan
Felodipine	Plendil
Nitrendipine	Baypress
Nicardipine	Caardene
Manidipine	Manyper
Nimodipine	Nymalize
Nisoldipine	Sular
Isradipine	Dynacirc

Immunosuppressants

Cyclosporine	Neoral, Sandimmune, Restasis
Tacrolimus	Protopic, Prograf
Sirolimus	Rapamune

Anticonvulsants

Phenytoin	Dilantin, Phenytek
Sodium valproate	Depakote, Depakene, Stavzor