

Antiplatelet Management

For Patients with Coronary Stents Undergoing Non-Cardiac Surgery

Patients with recent Percutaneous Coronary Intervention (PCI) with stent (either drug-eluting stents [DES] or bare metal stents [BMS]), who require surgery, present a complex treatment dilemma. These patients are typically on dual anti-platelet therapy — aspirin (ASA) plus a P2Y₁₂ platelet inhibitor.¹

Prematurely discontinuing dual anti-platelet therapy after stent implantation can result in sub-acute stent thrombosis, which is associated with a high incidence of transmural myocardial infarction and death. (For higher-risk patients, surgical procedures should be performed in hospitals with on-site PCI.)

Surgery creates an inflammatory pro-thrombotic state, which greatly increases the risk of thrombosis in stents that have not completely re-endothelialized. The risk of late stent thrombosis is particularly elevated in patients in whom aspirin and the P2Y₁₂ platelet inhibitor are both stopped and then surgery is performed.

This guideline outlines recommendations for antiplatelet management for patients with coronary stents undergoing non-cardiac surgery, depending on time since stent placement and whether aspirin and/or a P2Y₁₂ inhibitor can be continued through surgery.



TABLE 1. PERIOPERATIVE ANTIPLATELET MANAGEMENT OF PATIENTS WITH BARE METAL STENTS (BMS) OR DRUG-ELUTING STENTS (DES)

	≤3 months following PCI	>3 months following PCI (still on aspirin AND P2Y ₁₂ inhibitor ¹)	>12 months following PCI (still on aspirin, but NOT P2Y ₁₂ inhibitor ¹)
IF...	<ul style="list-style-type: none"> • Surgery ONLY for immediate life-threatening conditions or if benefit outweighs the significant cardiac risk • REQUEST CARDIOLOGY CONSULT 	<ul style="list-style-type: none"> • Routine surgical precautions • CONTACT interventional cardiologist for clearance between 3 and 12 months 	<ul style="list-style-type: none"> • Routine surgical precautions
Aspirin AND P2Y₁₂ inhibitor¹ can be continued during surgery (preferable):	<ul style="list-style-type: none"> • CONTINUE both aspirin AND P2Y₁₂ inhibitor through surgery 	<ul style="list-style-type: none"> • CONTINUE both aspirin AND P2Y₁₂ inhibitor through surgery 	<ul style="list-style-type: none"> • CONTINUE aspirin through surgery
Aspirin can be continued during surgery, but NOT P2Y₁₂ inhibitor¹:	<ol style="list-style-type: none"> 1. CONTINUE aspirin through surgery. 2. DISCONTINUE P2Y₁₂ inhibitor 5–7 days before surgery,² or at least until VerifyNow P2Y₁₂ Assay is >240 PRU. 3. RESTART P2Y₁₂ inhibitor¹ (with standard load) ASAP following surgery. 4. CONSIDER pre-op tirofiban bridging per cardiologist’s recommendation.³ 	<ol style="list-style-type: none"> 1. CONTINUE aspirin through surgery. 2. DISCONTINUE P2Y₁₂ inhibitor 5–7 days before surgery,² or at least until VerifyNow P2Y₁₂ Assay is >240 PRU. 3. RESTART P2Y₁₂ inhibitor (with standard load) ASAP after surgery. 	<ul style="list-style-type: none"> • CONTINUE aspirin through surgery
Neither aspirin NOR P2Y₁₂ inhibitor¹ can be given during surgery:	<ol style="list-style-type: none"> 1. DISCONTINUE aspirin AND P2Y₁₂ inhibitor 5–7 days before surgery,² or at least until VerifyNow P2Y₁₂ Assay is >240 PRU. 2. RESTART aspirin AND P2Y₁₂ inhibitor (with standard load) ASAP after surgery. 3. CONSIDER pre-op tirofiban bridging per cardiologist (see below).³ 	<ol style="list-style-type: none"> 1. DISCONTINUE aspirin AND P2Y₁₂ inhibitor 5–7 days before surgery,² or at least until VerifyNow P2Y₁₂ Assay is >240 PRU. 2. RESTART aspirin AND P2Y₁₂ inhibitor (with standard load) ASAP after surgery. 3. REQUEST cardiology consult. 	<ol style="list-style-type: none"> 1. DISCONTINUE aspirin 5 days before surgery. 2. RESTART aspirin ASAP after surgery.

¹P2Y₁₂ platelet inhibitors include clopidogrel (Plavix), prasugrel (Effient), and ticagrelor (Brilinta).

²Discontinuation times are 5 days for clopidogrel and ticagrelor and 7 days for prasugrel.

³Pre-op tirofiban (Aggrastat) bridging (see the [Tirofiban Clinical Guideline](#)):

- ADMIT to hospital 2 days before surgery and begin tirofiban, using the dosing in the acute coronary syndrome (ACS) tirofiban protocol for treatment of unstable angina (UA) or non-ST elevation myocardial infarction (NSTEMI).
- STOP tirofiban 4 hours before surgery.