Perioperative Management of Patients with Coronary Stents
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Preoperative Evaluation

1. Determine the type (BMS, DES) and location in the coronary circulation of stents placed in the patient and the date of implantation.
2. When possible, obtain catheterization/stent procedure report to identify any high risk factors for stent thrombosis:
   a. Low EF
   b. Prior coronary brachytherapy
   c. Long Stents
   d. Proximal vessel involvement (i.e. L main)
   e. Multiple Lesions
   f. Overlapping Stents
   g. Ostial/bifurcation lesions
   h. Small vessels
   i. Suboptimal stent results
   j. Known history of stenosis or thrombosis
3. Consult with a patient’s cardiologist and, when high risk, with the interventional cardiologist. When no cardiologist is on record, consult:
   a. Hillcrest Cardiology Consult
   b. Thornton Cardiology On-call
4. Perform the surgery in a center with 24-h interventional cardiology coverage so that stent thrombosis, if occurs, could be treated by PCI.
5. Inform patients of risk of perioperative stent thrombosis on preoperative visit.
6. Arrive at a joint decision between the anesthesiologists, cardiologist(s), and surgeons about the timing of surgery and the most appropriate management of the patient’s antiplatelet regimen.
   a. Make sure you discuss each one of these cases with an Anesthesia attending on the day of the visit.
   b. Make sure you document the ‘joint decision’ on the chart. Depending on the situation, this discussion may need to involve the Anesthesiology attending.

Coronary Stents

1. Patients with drug-eluting stents (DES) should defer all elective surgery by at least 12 months.
2. Patients with bare metal stents (BMS) should delay all elective surgery by at least 6 weeks.
3. Patients with BMS and DES should be on dual antiplatelet therapy (thienopyridine and ASA) for 6 weeks and 12 months, respectively.
4. After the respective 6 week or 12 month dual antiplatelet therapy, life-long aspirin should be taken.

Perioperative Coronary Stent Management options (after the 6 week and 12 month period)

1. If possible, continue both clopidogrel (Plavix) and aspirin throughout the perioperative period.
2. If not possible, hold clopidogrel (Plavix) if taken, for 5 days prior to surgery
3. Continue aspirin during and after the surgery if possible.
4. Consult with cardiologist when plan is NOT consistent with #s 1 and 2.
5. Inform patients of risk of perioperative stent thrombosis on preoperative visit.
6. Ensure blood product availability for the case
7. Consider platelet transfusion in the setting of bleeding if anti-platelet therapy continued (3 hours after last Aspirin dose and 8 hours after last Plavix dose)
8. If patient is taking clopidogrel, load (600mg) and restart clopidogrel in the recovery room OR as soon as possible after surgery.
Perioperative Coronary Stent Management options (within the 6 week or 12 month period):

1. Continue dual antiplatelet therapy during and after surgery if possible.
2. Consult patient’s cardiologist.
3. Discuss with interventional cardiologist as they may have insight to the patient’s coronary anatomy and optimal/suboptimal circumstance under which stent was placed.
4. If any antiplatelet therapy is held or discontinued, consult with patient’s cardiologist as to the decision and the risk-benefit analysis for the particular patient and procedure.
5. If decision is made to stop clopidogrel (5 days), continue ASA 325 mg through the perioperative period.
6. High risk patients:
   a. Advanced age
   b. Acute coronary syndrome
   c. Diabetes
   d. Low EF
   e. Prior coronary brachytherapy
   f. Renal Failure
   g. Long Stents
   h. Proximal vessel involvement (i.e. L main)
   i. Multiple Lesions
   j. Overlapping Stents
   k. Ostial/bifurcation lesions
   l. Small vessels
   m. Suboptimal stent results
   n. Known stent stenosis or history of thrombosis
7. If clopidogrel is held, load (600 mg) and restart clopidogrel in the recovery room or as soon as possible, postoperatively.
8. If absolute or relative contraindications to continuing antiplatelet therapy exist:
   a. Contraindications to continuation of perioperative single or dual antiplatelet therapy (refer to options, next section):
      i. Surgery for bleeding
      ii. Bleeding cancer (i.e. colon)
      iii. Spine surgery
      iv. Intracranial surgery or intracranial mass
      v. Hepatic resection, Eye or Ear surgery
      vi. Other surgery with significant expectant blood loss that would significantly impact outcome
   b. Inform patients of risk of perioperative stent thrombosis with holding antiplatelet therapy and bleeding risk with continuing antiplatelet medication
   c. Consult with Cardiology and Surgery as to best perioperative plan based on risk factors, bleeding risk, and urgency of surgery
10. Consider platelet transfusion in the setting of bleeding if anti-platelet therapy continued (3 hours after last Aspirin dose and 8 hours after last Plavix dose)

Patients who have NOT been evaluated preoperatively and present WITHOUT antiplatelet therapy on day of surgery.

1. If within 6 weeks and 1 year of BMS or DES:
   a. Consult cardiology
   b. If elective surgery, postpone case until after 6 weeks or 1 year
   c. If urgent case, would consult cardiology (interventional cardiology) prior to proceeding as these patients will be high risk.
2. If after 6 weeks and 1 year of BMS or DES:
a. Administer aspirin 325 mg orally and wait additional 2-4 hours until proceeding with the case.
b. Continue aspirin postoperatively and if Plavix taken, **load Plavix (600mg) in the recovery room OR as soon as surgically safe.**

References: