

Multidisciplinary Management and Systematic Review of Perioperative Dual Antiplatelet Therapy in Spinal Surgery Soon After a Percutaneous Cardiac Intervention for Drug-Eluting Stent Placement

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Introduction

The recommended duration of dual antiplatelet therapy after drug eluting stent (DES) placement presents a dilemma for patients with recent stenting who require urgent or emergent non-cardiac surgery. We present the case of a patient with recent DES placement (less than 6 months) on DAPT who underwent emergent cervical spine surgery using cangrelor, an intravenous P2Y12 receptor inhibitor antiplatelet agent, as a bridge to neurosurgery. We also discuss the current literature regarding this particular topic

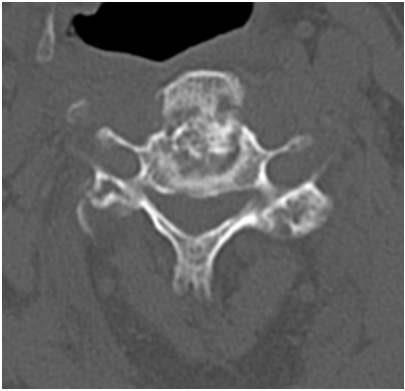
Methods

A systematic comprehensive literature review on the topic of DAPT in emergent spinal surgery was carried out on PubMed.

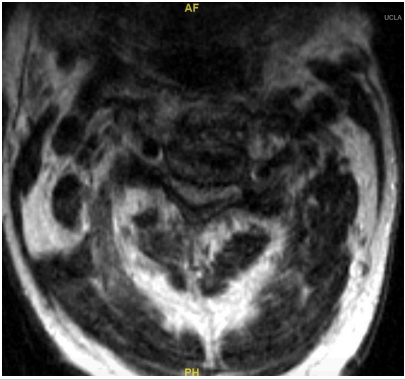
Results

The guidelines on mandatory DAPT length of treatment prior to elective surgery after a PCI with DES implantation mostly agree on a minimum of 6 months. When holding a P2Y12 inhibitor prior to undergoing surgery after PCI, sufficient time to restore platelet function in order to minimize hemorrhage risks must be allowed; about 5-10 days though agent dependent. However, if the surgery is emergent and the risks of terminating DAPT are determined to be severe (i.e. within 6 months of PCI) it is not unreasonable to consider operating on DAPT, unless the surgery involves the spinal, intracranial, or ocular spaces, associated with higher risks from bleeding. DAPT should be interrupted and bridging therapy employed.

Pre-operative Axial CT



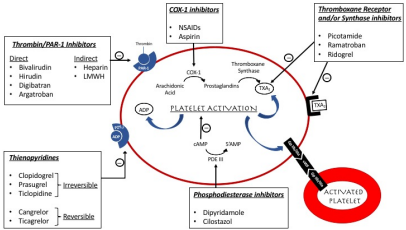
Pre-operative Axial C3-4 level T2 MRI



Conclusions

Our experience illustrates the multidisciplinary approach to a high thrombotic and high bleed-risk patient who underwent neurosurgery off both aspirin and a P2Y12 receptor inhibitor. Management of such patients remains limited to a case by case basis. Here, we demonstrate the safety of our proposed strategy for patients who are not good candidates for dual antiplatelet therapy. Additionally, we discuss current guidelines on timing of elective non-cardiac surgery, perioperative antiplatelet management considerations, real-world experience with cangrelor, increased risk of thrombosis perioperatively, and bleed risk of antiplatelet agents in neurosurgery.

Antiplatelet Agents' Mechanism of Action



Summary of antiplatelet agents' mechanism of action

Pre-operative Sagittal X-Ray



Pre-operative Sagittal X-Ray

Learning Objectives

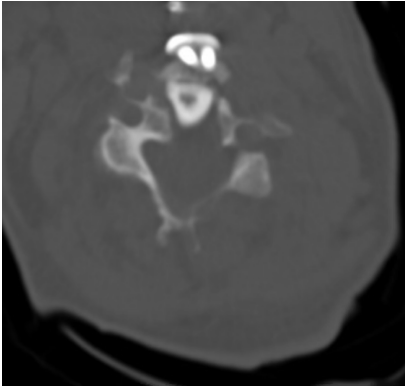
By the conclusion of this session, participants should be able to: 1) Understand the risks of performing surgery in closed spaces in a patient less than 6 months away from a drug-eluting cardiac stent placement on DAPT, 2) Be aware of available options to bridge these patients through the perioperative period safely, 3) Understand the delicate balance between the importance to minimize bleeding risk while maintaining an acceptable antithrombotic state regarding risk of stent thrombosis

Postoperative Sagittal CT



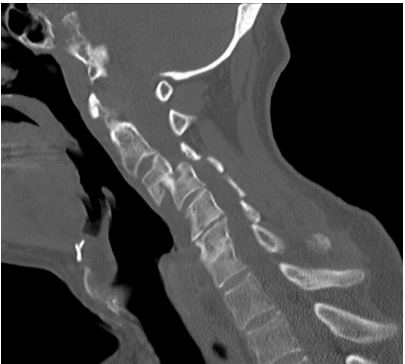
Postoperative Sagittal CT

Postoperative Axial CT



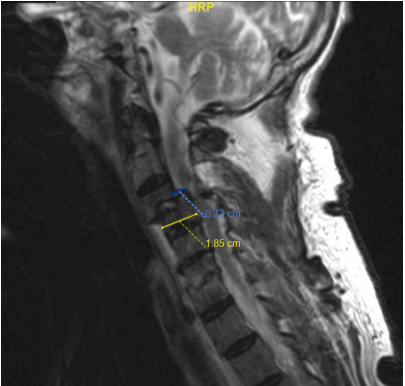
Postoperative Axial CT

Pre-operative Sagittal CT



Pre-operative Sagittal CT

Pre-operative Sagittal T2 MRI



Pre-operative Sagittal T2 MRI

Postoperative X-ray (axial and sagittal views)



Postoperative X-ray (axial and sagittal views)