Successful management of patients with a drug-eluting coronary stent presenting for elective surgery

Editor—I read with interest the recent result report of three cases. I think the case report was accepted for publication around the time that a meta-analysis from nine randomized trials was presented at the World Cardiology Congress 'Comparison of sirolimus- and paclitaxel-eluting coronary stents regarding the risk of stent thrombosis'. The authors report on a patient with a drug-eluting stent (DES) for 18 months who had stent occlusion 7 days after stopping clopidogrel before subacromial decompression.

At present, many surgeons stop all antiplatelet agents for 7 days before surgery. The current practice guidelines include: ACC/AHA/SCAI PCI Practice Guidelines—clopidogrel therapy for at least 3 months after CYPHER stent implantation, at least 6 months after TAXUS stent implantation—ideally up to 12 months in patients not at high risk of bleeding (Class IB recommendation), The European Society of Cardiology guidelines—clopidogrel administration for 6–12 months after DES implantation (Class IC recommendation).

The Second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation proposed ‘Antiplatelet medications, including NSAIDs, thienopyridine derivatives (ticlopidine and clopidogrel), and platelet GP IIb/IIIa antagonists (abciximab, eptifibatide, tirofiban) exert diverse effects on platelet function. The pharmacologic differences make it impossible to extrapolate between the groups of drugs regarding the practice of neuraxial techniques. There is no wholly accepted test, including the bleeding time, which will guide antiplatelet therapy. Careful preoperative assessment of the patient to identify alterations of health that might contribute to bleeding is crucial. These conditions include a history of easy bruising/excessive bleeding, female gender, and increased age. NSAIDs appear to represent no added significant risk for the development of spinal haematoma in patients having epidural or spinal anesthesia. The use of NSAIDs alone does not create a level of risk that will interfere with the performance of neuraxial blocks. The concurrent use of other medications affecting clotting mechanisms, such as oral anticoagulants, unfractionated heparin, and LMWH, may increase the risk of bleeding complications. COX-2 inhibitors have minimal effect on platelet function and should be considered in patients who require anti-inflammatory therapy in the presence of anticoagulation’.

In view of the present recommendation from ACC/AHA/SCAI PCI Practice Guidelines and European Society of Cardiologists guidelines, cessation of the dual antiplatelet, even 1 week before surgery, increases the likelihood of stent restenosis and of perioperative myocardial infarction (MI). Patients in whom the dual antiplatelet treatment is continued are at higher risk of perioperative bleeding and will be unfit for central neuraxial block. Broad and colleagues have suggested the use of shorter acting i.v. agents such as tirofiban and heparin to prevent coronary artery stent restenosis and excessive bleeding. This is to be done with caution in view of the difficulty in extrapolating between the different groups of drugs. It may be prudent to have cardiology counselling before operation and careful management to prevent stent restenosis. Admitting patients for 7 days may put a huge burden on the hospital. Non-cessation of clopidogrel and addition of other antiplatelet drugs might increase the perioperative blood loss and the blood transfusions. In the present situation, caution is of paramount importance. The risk–benefit assessment of stopping the antiplatelet treatment resulting in increased chances of perioperative MI vs bleeding is required, and consent after thorough discussion with the patient is essential.

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Editor—Thank you for the opportunity to comment on the wide-ranging letter from Dr Bengeri, which raises some important issues. We agree with Dr Bengeri that there is an increased interest in the issue of antiplatelet treatment after DES insertion and we would support the January 4, 2007 update from the US Food and Drug Administration (FDA) that includes the following bullet points (http://www.fda.gov/cdrh/news/010407.html).

- Data from several studies suggest that a longer duration of antiplatelet therapy than is currently included in the CYPHER and TAXUS labelling may be beneficial.
- The optimal duration of antiplatelet therapy, specifically clopidogrel, is unknown and DES thrombosis may still occur despite continued therapy.
- The labelling for both approved DES should include reference to the ACC/AHA/SCAI PCI Practice Guidelines, which recommend that patients receive aspirin indefinitely plus a minimum of 3 months (for Cypher patients) or 6 months (for TAXUS patients) of clopidogrel, with therapy extended to 12 months in patients at a low risk of bleeding.
We also confirm that the DES inserted in the three cases we reported were in compliance with the Victoria DHS Guidelines for DES, which fall within the FDA guidelines, and therefore do not constitute ‘off-label’ use. With respect to the protocol developed in the Geelong Hospital, we assumed that the DES was a ‘high-risk lesion’ in the coronary circulation and devised a treatment regimen to reduce the risk of coronary occlusion while at the same time minimizing the risk of bleeding at the time of surgery.

We are not sure what the view of ‘most surgeons’ with respect to antiplatelet agents is, but would add some data from our unpublished survey of 24 patients with DES presenting for a total of 43 non-cardiac surgery procedures at this institution. On 15 occasions clopidogrel was stopped, although aspirin was continued. Three patients suffered myocardial infarction due to in-stent thrombosis and two of the myocardial infarcts occurred before surgery. Of the 18 patients undergoing surgery while still on clopidogrel, the only patient to suffer excessive bleeding was transferred from a rural hospital and required two emergency laparotomies, after an episode of severe rectal bleeding.

Our institutional guidelines now advise that patients undergoing superficial, ophthalmic, or minor surgery (including endoscopy without biopsy) should continue clopidogrel throughout the perioperative period. More complex surgery should be planned in consultation with a perioperative physician or cardiologist experienced in the management of these patients at the time of surgery.

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Effects of hydroxyethyl starch in critically ill patients

Editor—The Sepsis Occurrence in Acutely ill Patients (SOAP) trial group have published another analysis from their database on hydroxyethyl starch (HES) and its effects on renal function. However, we are concerned that the methods used were not adequate, and the conclusion drawn ‘that HES had no influence on renal function or the need for renal replacement therapy (RRT)’ must therefore be viewed with caution. Our main concerns are as follows.

(1) Cohort studies must be planned in such a way that available data about potential confounding factors are of good quality. To ensure this, outcome events must be clearly pre-specified in the protocol and the data which will be collected must specifically address the question. Unfortunately, this is not the case with the SOAP protocol. Its short case report form is quite condensed and was primarily designed to study the epidemiology of sepsis and related therapeutic measures, not to answer nearly every open question in critical care medicine.

(2) ‘The “subsequent need for RRT” was defined in the SOAP protocol as the initiation of RRT in the ICU at least 24 h after HES administration or 24 h after admission in patients who did not receive HES’. Thus, the multivariate analyses compared groups with differing definitions for RRT, which is not acceptable.

(3) Median stay in ICU for the cohort of 3147 patients was only 3 days. Multivariate analysis was done on the 1970/3147 patients who stayed more than 24 h in the ICU. Since the multivariate analysis was undertaken in this subgroup, these patients would need to be characterized in more detail.

(4) ‘A total of 1287 received only crystalloids’—this means that 41% of patients either did not receive colloids or did not need volume expansion. This does not mean that 41% of the patients received fluid resuscitation with only crystalloids. As crystalloids are often infused as maintenance fluids, this heterogeneous patient group cannot serve as a comparator to the HES group.

(5) ‘The degree of organ failure assessed by the SOFA score, procedures, and the presence of sepsis syndromes on admission in patients who did not receive HES and at onset of HES administration in those who did were also included as independent variables’. Again, adjustment of confounding factors was performed for different time periods in HES and non-HES groups.

(6) The median amount of HES administered was 555 (IQR, 500–1000) ml per day and the total amount was only 1000 (500–2250) ml per patient. This is an unusually low HES dosage compared with other studies,


3 Horlocker T, Wedel DJ, Benzon H, et al. Regional anesthesia in the anti-coagulated patient: defining the risks (The Second ASRA Consensus Conference on Neuraxial Anesthesia and Anticoagulation)


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