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Myocardial Infarction after Transurethral Resection of the Prostate Surgery

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Abstract

We report the case of a 67-year-old man with hypertension and coronary heart disease who underwent transurethral resection of the prostate surgery with chest tightness, continuous palpitation, dyspnea, 49 hours after back to ward. An electrocardiogram confirmed an inferior and an anterolateral ST depression myocardial infarction. Cardiac troponin I, (cTnI) was 0.08 ng/ml. This is typically acute myocardial infarction after non-cardiac surgery. So he was shifted to cardiologist department for further treatment and discharged two weeks later when he felt fine but was presented to emergency room and expired for acute heart failure one month after discharge.

Keywords: Myocardial infarction; Transurethral resection of the prostate surgery

Introduction

Patients undergoing non-cardiac surgery are at risk of postoperative major vascular complications (i.e., vascular death, non-fatal myocardial infarction (MI), non-fatal cardiac arrest, and non-fatal stroke), and MI is the most common major complication [1]. Antiplatelet therapy should be continued as long as one lives for secondary prevention of acute myocardial infarction. But when it comes to a surgical scenario the dilemma goes to every doctor for concerning about the bleeding if the antiplatelet therapy continued or thrombogenesis when the antiplatelet therapy was discontinued. Although there's lots of guidelines which strongly recommended the continue of antiplatelet therapy [2-4] and restarted as soon as possible [5]. There are still concerns of bleeding for surgeons especially for prostate surgery beyond second vascular complications perioperatively [6].

Transurethral prostatectomy (TURP) is a common urological procedure which can be associated with considerable blood loss. For this reason the use of antiplatelet and anticoagulant therapy poses a management dilemma for urologists. Significant blood loss alters the risk-benefit ratio and many urologists and patients consider that the increased morbidity and possible mortality negate the potential benefits [7].

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Copyright © 2016 Yin Ning. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. We illustrate a case that the patient end up dead after the second attack of AMI after TURP which the antiplatelet therapy was discontinued before the surgery and was not restarted as soon as possible.

Case Presentation

A 67 year old man with progressive difficulty of micturition for ten years and now presented with dysurine and urine pain for a week was admitted for selective transurethral resection of prostate surgery on June 23, 2014. He has a remote history of hypertension but under control with medicine, and underwent percutaneous coronary intervention (a stent in RA) one year ago for chest pain.

Seven days after initial stabilization which included red blood cell transfusion, stopped aspirin taking for seven days without any bridging treatment and a consultation of cardiologist and anesthesiologist. The procedure from intubation to extubation was uneventful.

However, 49 hours after the end of the surgery, he was complained of chest pain, continuous palpitation and could not lie down. The ECG showed an abnormal Q wave in lead II III AVF and a depression of ST segment in lead V2-V6 (Figure 1 and 2), then nitroglycerin was pumping but no release of any symptom and cardiac troponin I (TNI) testing was going on which was turned to be 0.08 ng/ml.

The diagnosis went to ACS. The patient was shifted to Cardiologist department for further



treatment. To prevent bleeding, there's no anti-platelet and anticoagulating therapy until seven days after surgery. The patient feels better and coronary angiography was checked and proved a new stenosis in right coronary artery so a stent was placed. He was discharged when the TNI goes down to 0.03 ng/ml. unfortunately, one month after discharged, he was admitted again for acute heart failure and he died within 48 hours.

Discussion

For this case, acute myocardial infarction happened after TURP surgery which was defined by James Khan etc, in 2014, myocardial infarction/injury after non-cardiac surgery (MINs) [8].

Perioperative myocardial injury is the most common cardiovascular complication following non-cardiac surgery [9,10]. Most of the MINs occurred within 48 hours of surgery (74.1%) [11] of greater importance, the 30-day mortality rate was 11.6% among those who had an MI versus 2.2% for those who did not (P<.001) [12]. In contrast to the diagnosis of spontaneous acute myocardial infarction, the diagnosis of MINs takes into account the silent (90%) presentation of painless myocardial infarction and is based on cardiac troponin only, i.e. it does not require the presence of symptoms [8,13]. Diagnostic criteria: Troponin T level ≥ 0.03 ng/ml [13]. MINs in the POISE Trial demonstrated that two drugs (i.e., ASP and a statin) were associated with a statistically significant, risk-adjusted reduction in 30-day mortality [14]. More treatment at 9-12 days after surgery is median days for decreasing the 30-day mortality [15]. To prevent MINs after non-cardiac surgery, it seems undeniable to continue the anti-platelet therapy perioperatively.

However, if anti-platelet or anti-coagulant drugs are not stopped for TURP, there is an unacceptable burden of bleeding. If the drugs are stopped there is an unacceptable rate of cardiovascular events. So this issue still needs to be resolved. 2016 ACC/AHA guideline focused update on duration of dual antiplatelet therapy in patients with coronary artery disease, there's class I recommendations that in patients treated with DAPT after coronary stent implantation who must undergo surgical procedure that mandate the discontinuation of P2Y12 inhibitor therapy, it is recommended that aspirin be continued if possible and the P2Y12 platelet receptor inhibitor be restarted as soon as possible after surgery [16].

For those patients with cardiac risk factors on low dose aspirin alone this can be continued in the perioperative period without increased risk of major bleeding [2,17]. A multicentre, retrospective,



observational study demonstrated that perioperative antiplatelet discontinuation was the strongest independent predictor of 30day major adverse cardiac events (MACE) (odds ratio [OR] =25.8, confidence interval [CI] =3.37-198, p=0.002). Perioperative aspirin (adjusted OR 0.27, 95% CI 0.11-0.71, p=0.008) was significantly associated with a lower risk of MACE [3]. Aspirin should be continued perioperatively in the majority of surgical operations, whereas dual antiplatelet therapy should not be withdrawn for surgery in the case of low bleeding risk. In selected patients at high risk for bleeding and ischaemic events, when oral antiplatelet therapy withdrawal is required, perioperative treatment with short-acting intravenous glycoprotein IIb/IIIa inhibitors (tirofiban or eptifibatide) should be taken into consideration [4].

Conclusion

For patients who need anti-platelet therapy for prevention of the secondary acute myocardial infarction perioperatively, anti-platelet therapy should be continued until the surgery day or treatment with short-acting intravenous anti-coagulant drugs.

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