# Management of New Diagnosed Rectum Cancer in the Course of Acute Myocardial Infarction

## Akut Miyokart Enfarktüsü Seyrinde Yeni Tanı Konulan Rektum Kanseri Yönetimi

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**ABSTRACT**

Expected life-spans increase all over the world and in our clinical experience we see atherosclerotic vascular diseases and malignant neoplasms more commonly. Herein, we want to present a case with coexistence of acute myocardial infarction and new diagnosed rectum cancer. Close monitoring is essential in these patients however stent thrombosis can be seen and patient and relatives should be informed about the risks and possible treatment choices in a detailed way.

Key Words: rectum cancer; myocardial infarction; antiplatelet therapy

**ÖZ**

Beklenen yaşam süresi tüm dünyada uzamaktadır ve klinik pratiğimizde aterosklerotik damar hastalıkları ve malign karakterli neoplazmlar günümüzde daha sık görülmektedir. Bu yazımızda, akut miyokart enfarktüsü birlikteliğinde yeni tanı alan rektum kanseri hastamıza yaklaşımımızı aktarmayı amaçladık. Benzer vakalarda yakın monitörizasyon esastır, bununla birlikte stent trombozu olasılığı her zaman göz önünde bulundurulmalıdır, hasta ve hasta yakınları olası tedavi seçenekleri ve riskler konusunda ayrıntılı şekilde bilgilendirilmelidir.

Anahtar Kelimeler: rektum kanseri; miyokart enfarktüsü; antiplatelet tedavi

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Patients with coronary stent implantation may have a need of non-cardiac surgery in the following period. Discontinuation of dual antiplatelet therapy carries a risk of coronary stent thrombosis and this risk is even higher in acute coronary syndrome patients. Our case is a patient with an acute myocardial infaction successfully treated with coronary stenting and needed an urgent surgical procedure for rectum cancer in the following days.

## CASE REPORT

A 66 year-old male patient admitted to our emergency department with ongoing, squeezing chest pain lasting for 30 minutes. On his 12 lead electrocardiography, acute inferior myocardial infarction was diagnosed and we performed primary percutaneous intervention for right coronary artery [Video 1 and 2]. We implanted 2 zotarolimus coated drug eluting coronary stents (Endeavor Resolute, Medtronic, Minnesota, US) with 3.0mm in diameter and totally 45mm in length. We performed post-dilatation for optimal stent apposition with a non-compliant coronary balloon (Sprinter RX, Medtronic, Minnesota, US). We gave 300mg oral acetylsalicylic acid and started ticagrelor as 180mg oral loading dose and continued 90mg twice a day. After 48 hours, active rectal bleeding complaint started. Urgent rectoscopy revealed a rectal mass causing near total occlusion of luminal cavity. Depending on the nature of rectal mass, urgent surgical intervention was planned. We stopped ticagrelor at the third day before operation and started clopidogrel 75mg per day without loading dose at the second day before operation. We also continued acetylsalicylic acid at a low dose, as 100mg per day. Total excision of rectal mass with clean surgical borders was successfully performed. Pathological specimen was evaluated as adenocarcinoma. We did not need any blood transfusion during the perioperative period. Serial 12 lead electrocardiographies did not reveal any coronary ischemic events. We continued dual antiplatelet therapy as clopidogrel 75mg per day and acetylsalicylic acid 100mg per day. We also investigated patient in the means of solid organ metastasis and multiple lung metastases were detected. Whole body positron emission tomography was performed and we did not find any other solid organ metastasis except these multiple lung metastases. Patient is at his 6th month after myocardial infarction and under follow-up of Oncology and Cardiology departments together. Oncology department continues to give chemotherapy regimen and patient is asymptomatic now.

## DISCUSSION

Coronary artery disease and malignant neoplasms are both more commonly seen in modern era with changing dietary habits and with increasing expected life spans. Percutaneous coronary interventions are the most globally preferred way for myocardial revascularization and up to 5-25 % of patients treated with coronary stents have a need of non-cardiac surgery in the following 5 years. Coronary stent thrombosis has a worser prognosis than de novo coronary occlusions and early cessation of dual antiplatelet therapy is the most powerful predictor of stent thrombosis [1]. Management of antiplatelet therapy before scheduled non-cardiac surgical operations in patients who are treated by coronary stent implantation recently should be decided both surgeon and cardiologist together. Current guidelines offer to postpone non-cardiac surgery until the end of dual antiplatelet therapy to prevent bleeding and blood transfusion need and also these guidelines offer the continuation of low dose of acetylsalicylic acid during the perioperative period [2].
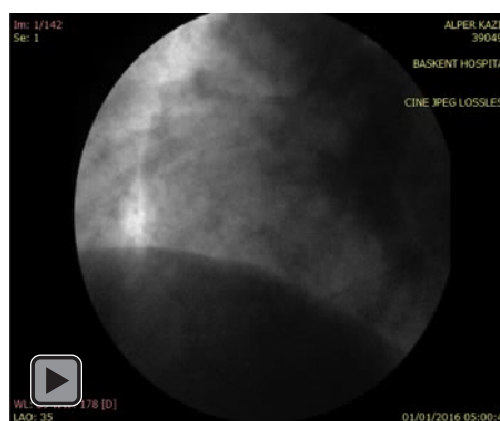


Video 1. Left anterior oblique view at 30 degree angle shows severe right coronary artery (RCA) lesion



Video-2: Percutaneous coronary intervention was performed for RCA lesion and TIMI-3 flow was achieved.

Major adverse cardiac events (MACE) are common-

ly seen during non-cardiac surgical procedures in patients with previously percutaneous coronary intervention history. This percentage is even higher in patients with coronary stent implantation due to acute coronary syndromes and after this with development of need of unexpected/unscheduled, emergent/urgent non-cardiac surgical operation. MACE rates does not increase in the case of balloon angioplasties with non-cardiac surgeries [3] but stent implantation dramatically changes this scenario [1]. Perioperative stent thrombosis was found nearly 20% in patients with recently implanted coronary stent and discontinuation of dual antiplatelet therapy before surgical operation [4].

Drug eluting stents have been using commonly across Europe since the year 2002, however first generation drug eluting stents had some disadvantages such as need for longer duration of dual antiplatelet therapy and higher risk in the cases of non-cardiac surgery early after coronary stent implantation [4]. New generation zotarolimus and everolimus eluting stents need a shorter period for dual antiplatelet therapy [5] and there was found no difference between even 3 months and 12 months duration of dual antiplatelet therapy in these new generation drug eluting stents [6]. In the case of myocardial revascularization due to high risk acute coronary syndromes, dual antiplatelet therapy should be continued for at least 1 year independent from the type of coronary stent [7]. If patients with recently coronary stent implantation due to acute coronary syndromes have a need of non-cardiac surgery in the following period, benefit from early surgery depending on the specified pathology such as malignant tumors should be evaluated with the potential hazards of perioperative stent thrombosis. This kind of surgical procedures should be performed in hospitals with 24/7 cathetary laboratories to intervene with the possible perioperative stent thrombosis [2].

Ticagrelor is a new generation P2Y12 receptor inhibitor antiplatelet agent and inhibits platelet functions reversibly and has a half-life of 8-12 hours [8]. Compared to clopidogrel, it has a greater antiplatelet potential and has a faster speed of offset. Regarding the assay of residual platelet inhibition, after taking the last dosage, in the previous studies there has been detected a measurement difference between 24 hours and 3 days and platelet functions return to basal level after 5 days [9]. Regarding to clopidogrel, we do not know possible bleeding complications of ticagrelor, especially in surgical patients, so we decided to dis-

continue ticagrelor and change it with clopidogrel in perioperative period. Because of the urgent nature of rectal mass and possible risk of development of ileus, we stopped ticagrelor at the third day before scheduled surgical procedure depending on the previous studies about platelet reactivity after discontinuation of ticagrelor [9]. Recently, a guideline has been published by European Society of Cardiology about dual antiplatelet treatment and in this guideline, non-cardiac surgical operations was described to be performed after 3 days following the discontinuation of ticagrelor [10]. Ticagrelor has a faster onset and also offset of action compared to clopidogrel. Ticagrelor inhibits platelet activity reversibly and this may be the mechanism of faster offset of action. On the other hand, ticagrelor is a more powerful platelet inhibitor and possibly we can see more bleeding complications with continuation of ticagrelor.

In the case of early surgical intervention need during the follow-up period for coronary stent implantation patients, we also have some intravenous antiplatelet medications such glycoprotein IIb/IIIa inhibitors or cangrelor and in selected cases these intravenous choices can be chosen.

In our patient, depending on the urgency of surgical need we planned our surgical procedure in an early period after acute coronary syndrome and coronary stent implantation. General Surgery and Cardiology departments decided the optimal time of surgical procedure together and also patient's relatives had been informed about possible complications in a detailed way. Erytrocyte and platelet transfusions had been prepared for possible perioperative bleeding and cathetary laboratory was prepared for the need of perioperative balloon angioplasty. Fortunately, we did not have any blood transfusion need or MACE. Patient's general condition is well at 6th months.

As a result, coronary artery disease patients treated with coronary stent implantation may have a need for non-cardiac surgical interventions in their clinical follow-up. Medical management of these patients should be performed by multidisciplinary approach. We have to evaluate possible risks of bleeding complications and coronary stent thrombosis.

**Conflict of interest:** The authors declare that there are no actual or potential conflicts of interest in relation to this article.

**KAYNAKLAR**

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