CASE REPORT

Short term follow-up of a patient with uncomplicated type B aortic dissection under dabigatran treatment

Dabigatran kullanımı altında komplike olmayan tip B aort diseksiyonlu hastanın kısa dönem takibi

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Summary– This case report illustrates the follow-up of a 57-year-old female with a type B aortic dissection (AD) under dabigatran treatment. The patient had been operated on 8 years earlier due to type A AD. The aortic valve was repaired and a 26-mm polyester fiber graft was applied to the ascending aorta and the aortic arch. In computerized tomography scans taken after the procedure, a dissection flap extending from the descending aorta to the iliac arteries was seen, but the patient was asymptomatic and no further surgery was performed. The patient was subsequently diagnosed with atrial fibrillation. A CHA_2DS_2VASc score of 3 was recorded and dabigatran treatment was initiated. The aortic aneurysm and dissection were followed up via computed tomography and echocardiography at regular intervals, and at 6 months no progression was seen. No thromboembolic or hemorrhagic events were observed. To our knowledge, this is the first case report of dabigatran treatment for a patient with a type B AD. Based on this case, the use of dabigatran would appear to be safe in a patient with an uncomplicated type B AD, but the results of this case need to be confirmed with extended follow-up and additional patients.

Özet– Bu olgu sunumunda tip B aort diseksiyonu tanılı 57 yaşında bir kadın hastanın atriyal fibrilasyon nedenli başlanan dabigatran tedavisi altında takibi özetlendi. Hastanın tip A diseksiyon nedenli 8 yıl önce aort kapak tamiri ve çıkan aorta ve aortik arkta dakron greft implantasyonu hikayesi vardı. Cerrahiden sonraki bilgisayarlı tomografi incelemelerinde inen aorttan iliyak arterlere uzanan bir diseksiyon flebi görülmüş, ancak hasta semptomsuz olduğundan tekrar ameliyat edilmemişti. Hastanın 6 ay önce tarafımıza başvurusunda atriyal fibrilasyon tanısı kondu. CHA_2DS_2VASc skoru 3 olan hastaya dabigatran tedavisi başlandı. Hastanın aort anevrizma ve diseksiyonu ekokardiyografi ve bilgisayarlı tomografi ile 6 ay takip edildi ve bu süreçte hastanın diseksiyon hattında ilerleme veya embolik/hemorajik komplikasyon görülmedi. Yaptığımız literatür taramasına göre bu olgu sunumu dabigatran tedavisi altında tip B aort diseksiyonu takibi yapılan ilk olgudur. Bu olgu neticesinde dabigatran kullanımının komplikasyonsuz tip B aort diseksiyonunda güvenli olabileceği sonucuna varılmıştır. Daha net bir sonuca varmak için daha uzun takipli daha çok olgu içeren çalışmalar gerekmektedir.

Chronic type B aortic dissection (AD) is a condition that requires special evaluation for treatment options. The course of type B AD is usually uncomplicated; patients typically receive medical therapy for blood pressure control, pain, and heart rate, and are monitored for signs of malperfusion and disease progression.[1–3]

Atrial fibrillation (AF) is one of the major causes of stroke in the world. Death due to stroke can be reduced by anticoagulation in AF patients. For female patients with a CHA_2DS_2VASc score of more than 2, oral anticoagulation therapy is recommended.[4] Every guideline recommends that each patient should be considered individually. However, there are no data to suggest whether anticoagulation treatment should be implemented or which oral

Abbreviations:

AD	*Aortic dissection*
AF	*Atrial fibrillation*
CT	*Computed tomography*
DOAC	*Direct oral anticoagulant*

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anticoagulant should be preferred in cases of chronic uncomplicated type B AD patients with AF.

Presently described is the case of a 57-year-old woman with chronic type B AD diagnosed 8 years earlier. She was later diagnosed with AF with a CHA_2DS_2VASc score of 3. Dabigatran therapy was initiated for stroke prevention and no progression was seen in the dissection after 6 months of follow-up.

CASE REPORT

A 57-year-old female with a history of hypertension, asthma, and type 2 diabetes mellitus presented at the clinic. Aortic valve repair with a 26-mm Dacron (E. I. du Pont de Nemours and Company, Wilmington, DE, USA) graft placement on the ascending aorta and aortic arch had been performed 8 years prior due to a type A AD. A postoperative control revealed a dissection flap extending from the descending aorta to the iliac arteries, but the patient was asymptomatic and there were no symptoms of malperfusion, so a plan of medical treatment and regular follow-up was pursued. At presentation, the patient had palpitation symptoms and AF was detected in the electrocardiography results. The CHA_2DS_2VASc score was 3 and the creatinine clearance was 80.5 mL/minute. Transthoracic echocardiography indicated an ejection fraction that was within normal limits and moderate aortic regur-

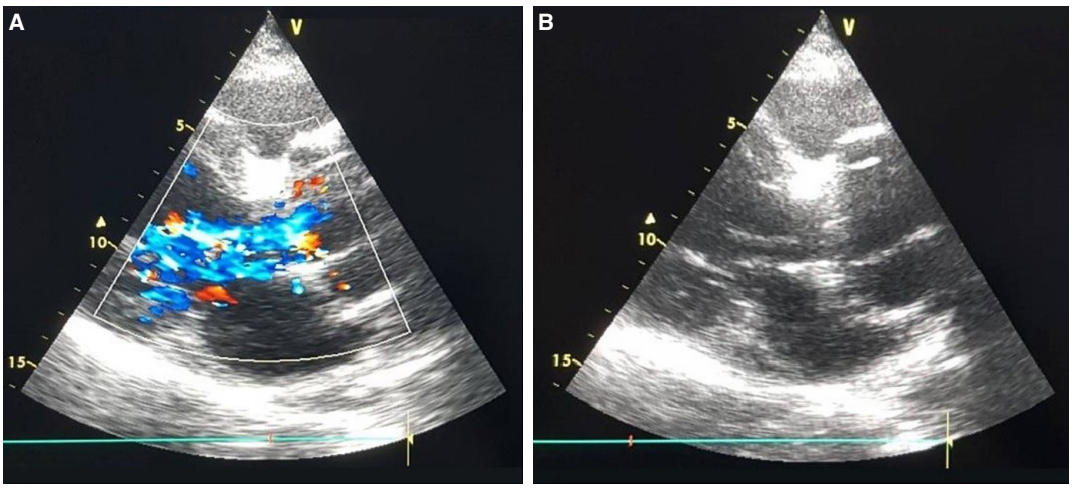

Figure 1. Transthoracic echocardiographic view of the patient. **(A)** Moderate aortic regurgitation in parasternal view; **(B)** Polyester fiber graft visible in parasternal view.

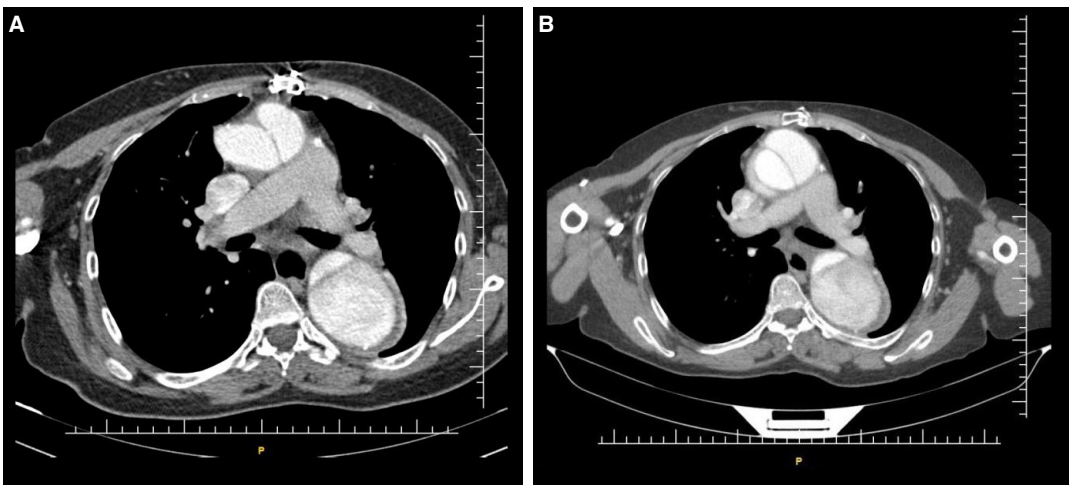

Figure 2. **(A)** View of descending aorta before dabigatran use. The anterior-posterior diameter of the descending aorta was 6.5 cm; **(B)** Follow-up computed tomography scan after 6 months of dabigatran use. Anterior-posterior diameter of the descending aorta was unchanged.

gitation (Fig. 1a). The Dacron graft was observed in the parasternal view (Fig. 1b). In a control computed tomography (CT) image, the anterior-posterior diameter of the descending aorta was measured at 65 mm at the widest point (Fig. 2a). A false lumen was thrombosed from the beginning of the dissected segment to the abdominal aorta but contrast was seen in a false lumen of the abdominal aorta. Luckily, all of the main arteries originated from the true lumen, so the organs were intact and no malperfusion was seen. A physical examination revealed that the peripheral pulses were bilaterally equal and intact. The patient was asymptomatic, but surgery was recommended since the aortic segment with dissection was >6 cm in diameter. The patient declined any endovascular procedure or surgery. Dabigatran 110 mg twice daily was initiated for stroke prevention. At the first and fourth month follow-up visits, the patient remained asymptomatic, the laboratory parameters were normal, and echocardiography showed no significant change. In the sixth month of dabigatran use, a control CT image was obtained. There was no significant difference in the aortic views or diameters when compared with the CT image from before dabigatran use (Fig. 2b). The patient was still asymptomatic and no thromboembolic or hemorrhagic events had been observed.

DISCUSSION

Oral anticoagulation therapy is recommended to prevent stroke and to prolong life expectancy in AF patients.[4,5] Direct oral anticoagulants (DOACs) are strong alternatives to warfarin for non-valvular AF.[4] DOACs are becoming more popular due to the ease of use and safety benefits. Although not recommended directly in the guidelines, off-label use of these drugs is frequent. For example, the use and positive results of DOACs for anticoagulation for left ventricular thrombus or left atrial thrombus have been published in various case reports.[6–11] According to these reports, DOACs appear to be useful in left ventricular thrombus and left atrial appendage thrombus resolution, but of course randomized, controlled trials are necessary before safety can be assured.

In our case, dabigatran 110 mg was administered. According to the RE-LY study (Randomized Evaluation of Long Term Anticoagulant Therapy (RE-LY) With Dabigatran Etexilate), dabigatran 110 mg twice daily was non-inferior for stroke prevention in non-valvular AF patients compared with warfarin. In addition, this medication is safer than warfarin in terms of major or minor bleeding.[12] A study examined low-molecular-weight heparin and dabigatran in a renal ischemia-reperfusion model in rats and dabigatran was found to have superior renoprotective effects.[13] The guidelines offer suggestions for patients with a high bleeding risk; however, there are currently no recommendations on how to proceed in cases of AF patients with uncomplicated type B AD. There are some reports describing an increased need for transfusions and other complications during surgery in cases of acute type A AD patients under dabigatran treatment,[14,15] but to our knowledge, the present case is the first to illustrate the follow-up of a patient with uncomplicated type B AD treated with dabigatran. Our patient was stable after the first surgery for acute type A AD. Following a diagnosis of type B AD after surgery, medical therapy was pursued. The patient never demonstrated any new symptoms and routine CT scans were performed. When she was first diagnosed with AF at our clinic, CT scans taken at this clinic demonstrated a 6.5-cm aneurysmatic dilatation on the descending aorta with dissected segments. The patient declined surgery. Dabigatran treatment was implemented for stroke prevention. Both control CT scans and physical examination revealed no progression after 6 months. No thromboembolic or hemorrhagic events were recorded during the follow-up period.

This case suggests that dabigatran may be used in cases of uncomplicated type B aortic dissection with close follow-up. No thromboembolic or hemorrhagic events were seen and CT scans revealed no significant difference after 6 months. The results of this case should be confirmed with longer follow- up and with more patients.

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Keywords: Atrial fibrillation; computerized tomography; dabigatran; Type B aortic dissection

Anahtar sözcükler: Atriyal fibrilasyon; bilgisayarlı tomografi; dabigatran; Tip B aort diseksiyonu.