THE ANATOLIAN JOURNAL OF CARDIOLOGY

Official journal of the TURKISH SOCIETY OF CARDIOLOGY

Spontaneous Coronary Artery Dissection in Children with Duchenne Muscular Dystrophy

CASE REPORT

INTRODUCTION

Spontaneous coronary artery dissection (SCAD) is an unusual cause of myocardial infarction in children. Causes are unknown, but it has been reported in adult patients associated with the postpartum period, renal fibromuscular dysplasia, and connective tissue diseases. Spontaneous coronary artery dissection is an extremely rare condition in the childhood, mostly related to connective tissue disease, and unreported in Duchenne muscular dystrophy (DMD). In this brief report, we present acute anterior myocardial infarcts (MI)-related SCAD in a 12-year-old patient with DMD. Informed consent was obtained from the patient's family.

CASE REPORT

A 12-year-old male patient presented with chest pain and chest tightness that started 2-3 hours ago. The patient was diagnosed with DMD 7 years ago and was being followed up in the neurology department. The patient can walk with support. The patient was taking vitamin D, prednisolone, losartan, and ataluren treatments.

On physical examination, the following observations were made: height: 158 cm (75 percentile), weight 56 kg (75 percentile), blood pressure: 125/84 mm Hg, heart rate 84 beats/min, SpO_2: 99, and fever: 36.2ºC. Cardiac examination was normal, and there was no feature other than atrophy in the gluteal region muscles and leg muscles.

Significant ST elevations were detected in V1-V6, and findings consistent with diffuse anterior myocardial infarction were detected on electrocardiography (ECG) (Figure 1). Echocardiographic examination was normal. Thoracic computed tomography scan of the patient was determined as normal. Laboratory tests

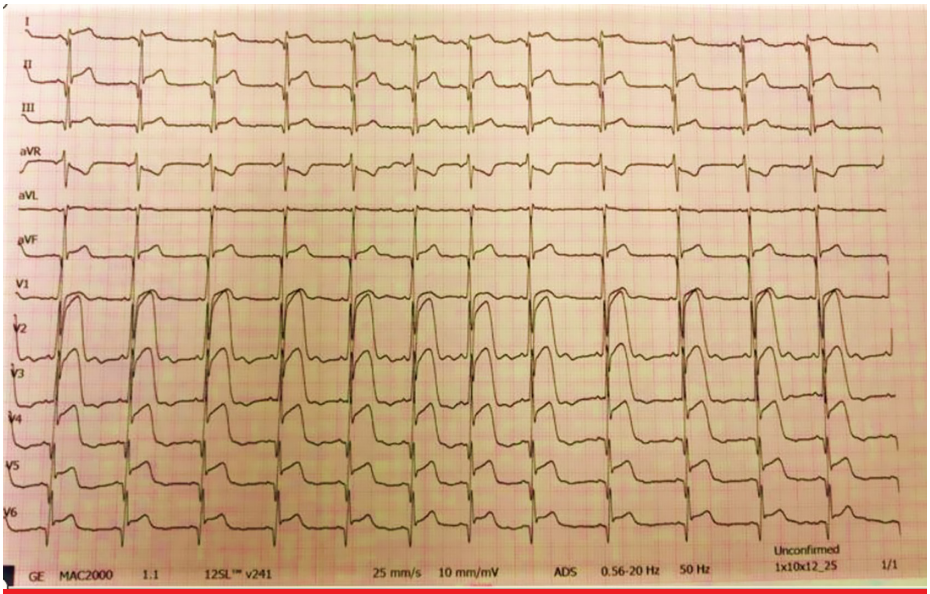


Figure 1. Electrocardiography at the time of application.

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Cite this article as: Öncül M, Karakurt C, Elkıran Ö, Hidayet Ş, Maraş SA. Spontaneous coronary artery dissection in children with duchenne muscular dystrophy. *Anatol J Cardiol*. 2022;26(12):914-916.

DOI:10.5152/AnatolJCardiol.2022.1836

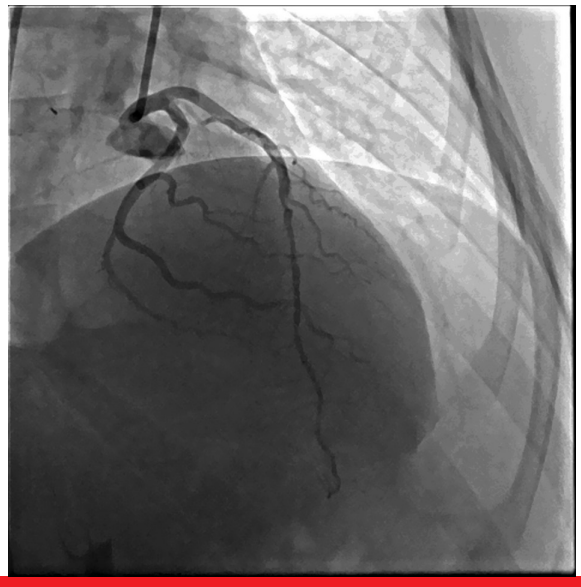


Figure 2. Left anterior descending diagonal 1 segment dissection.

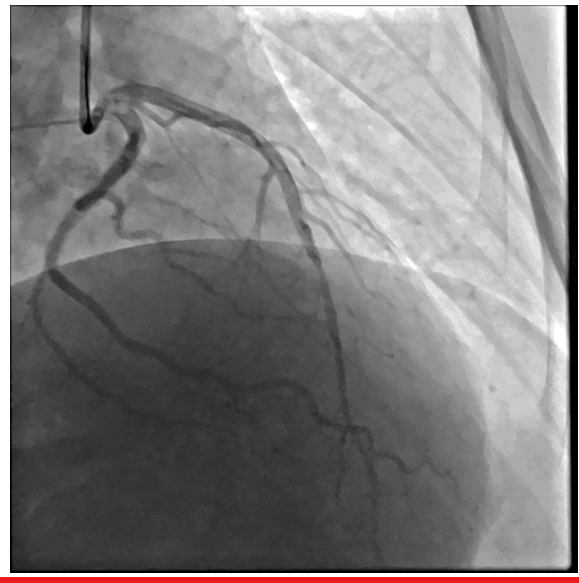


Figure 3. Distal stenosis due to mural thrombus after stent.

revealed the following: Aspartate aminotransferase (AST): 140 U/L, Alanine aminotransferase (ALT): 102 U/L, Lactic dehydrogenase (LDH): 400 U/L, Creatine Kinase (CK): 2722, Creatine kinase-MB isoenzyme (CK-MB): 164 U/L, and troponin-I >27 000 pg/mL.

With these findings, acute coronary artery disease was considered, and left cardiac catheterization and selective coronary artery angiography were performed. Spontaneous coronary artery dissection and 80% stenosis were detected related to the dissection just below the left anterior descending coronary artery diagonal 1 segment (Figure 2). A 2.5 × 16 mm diameter drug-eluting coronary stent was placed in the area of stenosis due to dissection. Selective angiography performed after the stent revealed that the dissection area was opened and there was a distal stenosis due to the progression of the mural thrombosis in the area after dissection (Figure 3). Balloon angioplasty was performed with a 2.5 × 16 mm Percutaneous Transmural Coronary Angioplasty (PTCA) catheter at the distal site of stent. It was observed that the narrowed appearance

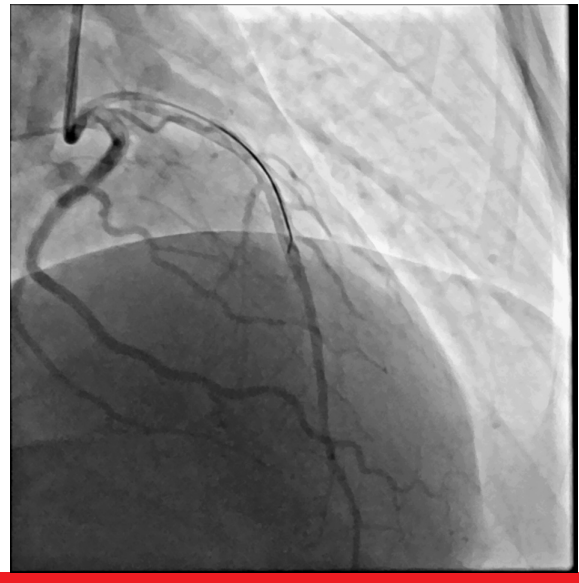


Figure 4. Balloon angioplasty final image.

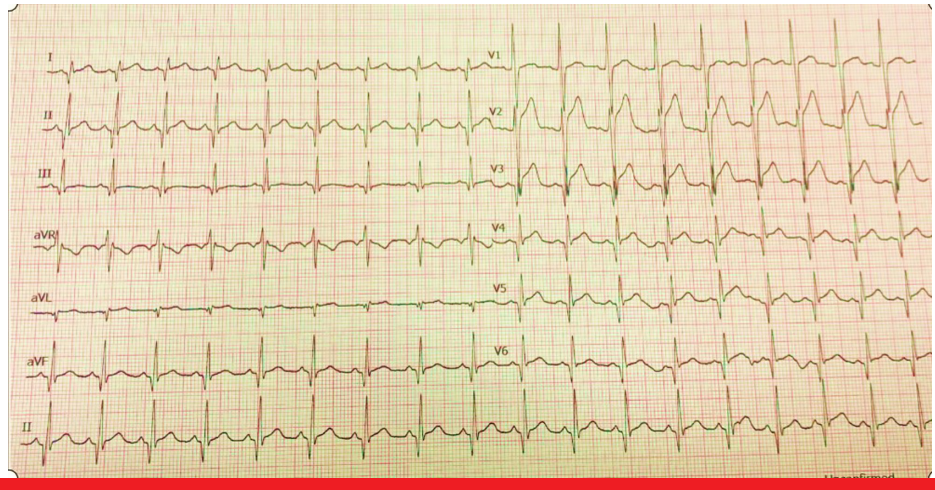


Figure 5. Electrocardiography after the procedure.

improved after the procedure (Figure 4). Chest pain improved in patient follow-up and troponin levels began to decrease gradually as ECG changes improved (Figure 5). The patient was started on clopidogrel and aspirin therapy. The patient is currently being monitored without any problems.

DISCUSSION

Spontaneous coronary artery dissection is a form of non-atherosclerotic coronary artery disease. While initially thought to be rare, subsequent studies increasingly began to consider it a cause of acute coronary syndrome in women. It was found to affect 81%-92% of patients in the last series, especially in young and middle-aged women.[1-5] Among women, SCAD is the most common cause of acute coronary syndrome, in 35% of cases of pregnancy-related MI.[5,6] Typical angiographic appearance is not always available in these patients and additional examinations may be needed with advanced imaging. Current guidelines for the treatment of atherosclerotic acute coronary syndrome recommend early percutaneous coronary intervention to the involved coronary arteries, but there are no specific guidelines for SCAD.[7] Our patient presented with chest pain, typical changes were detected in ECG, and left ventricular functions were found to be normal in Echocardiography (ECHO). Percutaneous stent was placed in our patient by performing selective angiography.

CONCLUSION

Spontaneous coronary artery dissection is an extremely rare condition in the childhood, mostly related to connective tissue disease, and unreported in DMD.

Informed Consent: Informed consent was obtained from the patient's family.

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