

Successful Stent Implantation in a Patient with Dextrocardia: Case Report

Dekstrocardili Bir Hastada Başarılı Stent İmplantasyonu

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Geliş Tarihi/Received: 10.05.2008
Kabul Tarihi/Accepted: 06.11.2008

This article was presented at 9th National Internal Medicine Congress at 5-9 September 2007 as a poster presentation.

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ABSTRACT Dextrocardia is a rare condition of cardiac congenital anomaly. Dextrocardia with obstructive coronary disease is a rare clinical situation. The incidence of atherosclerosis in this group is not known, but is associated to be the same as that in the general population. Mechanical reperfusion (PCI) is the preferred treatment for acute non-ST elevation myocardial infarction and unstable angina pectoris. Successful stent deployment for the treatment of unstable angina and situs inversus is reported. This report describes successful two-vessel angioplasty and stenting with "non-ST elevation myocardial infarction (NSTEMI)" in dextrocardia and situs inversus. Our report demonstrates the safety and feasibility of PCI with dextrocardia with use of standard Judkins catheters, standard image acquisition, and counter rotation of catheters.

Key Words: Dextrocardia; acute coronary syndrome; angioplasty, transluminal, percutaneous coronary

ÖZET Dekstrocardi nadir görülen bir konjenital kardiyak anomalidir. Dekstrocardili kişilerde ateroskleroz sıklığı net olarak bilinmemekle birlikte, genel popülasyona benzer riske sahip oldukları kabul edilmektedir. "Situs inversus" ve dekstrocardi ile akut koroner sendrom birlikteliği çok az görülen bir klinik durumdur. Son kılavuzlarda yüksek risk kriterlerine sahip hastalarda erken perkütan koroner girişim uygulanması önerilmektedir. Situs inversuslu kararsız anjinalı hastanın tedavisi başarılı stent implantasyonu uygulaması olarak rapor edilmiştir. Bu çalışmada, situs inversus ve dekstrocardili "non-ST elevation myocardial infarction (NSTEMI)" geçiren hastada iki damara başarılı perkütan koroner girişim uygulanması anlatılmıştır. Sonuç olarak dekstrocardili bir hastada standart görüntüler elde edilerek, kateterlerin ters rotasyonu ile ve standart judkins kateterler kullanılarak perkütan koroner girişimin güvenilir bir şekilde yapılabileceği gösterilmiştir.

Anahtar Kelimeler: Dekstrocardi; akut koroner sendrom; perkütan koroner anjiyoplasti

Türkiye Klinikleri J Cardiovasc Sci 2009;21(1):94-6

Dextrocardia is a rare clinical phenomenon with a reported incidence of one in 10.000.¹ Consequently, Non-ST elevation myocardial infarction (NSTEMI) in such patients is rare. Invasive treatment is the preferred treatment for high-risk acute coronary syndrome.² Recent NSTEMI treatment guidelines suggest early reperfusion by percutaneous intervention (PCI) in high-risk patients.³ Previous case reports have shown successful attempts at reperfusion one coronary artery percutaneously.⁴ This report describes successful two-vessel angioplasty and stenting with NSTEMI.

CASE REPORT

A 46-year-old man with known dextrocardia presented with the complaints of chest pain at rest for the last two hours. He was a heavy smoker. Physical examination revealed a right sided apex beat and chest radiography confirmed the presence of dextrocardia (Figure 1). A 12-lead electrocardiogram showed normal sinus rhythm, a reduction in R-wave voltage across the chest leads, and a corresponding increase in R-wave voltage across the right sided chest leads. ST segment depression and T-wave changes in the V4-6R leads consistent with ischemia were also present. His troponin level was high (troponin level: 0.68 mg/dL). He was admitted to coronary care unit with diagnosis of non-ST-elevation acute myocardial infarction. An early invasive management was decided. Coronary angiography, performed from the right femoral artery. The right-sided anatomical left coronary artery (LCA) was cannulated by advancing a 7 Fr Left Judkins 4 cm (JL 4) catheter in the anteroposterior (AP) projection. The left-sided anatomical right coronary artery (RCA) was cannulated with a 7 Fr Judkins 4 cm (JR 4) catheter. There were 90% stenosis in the proximal left anterior descending and right coronary arteries. (Figure 2 A-B). The anatomical right coronary artery stenosis was stented



FIGURE 1: Chest roentgenogram (anteroposterior view) obtained on admission shows dextrocardia.

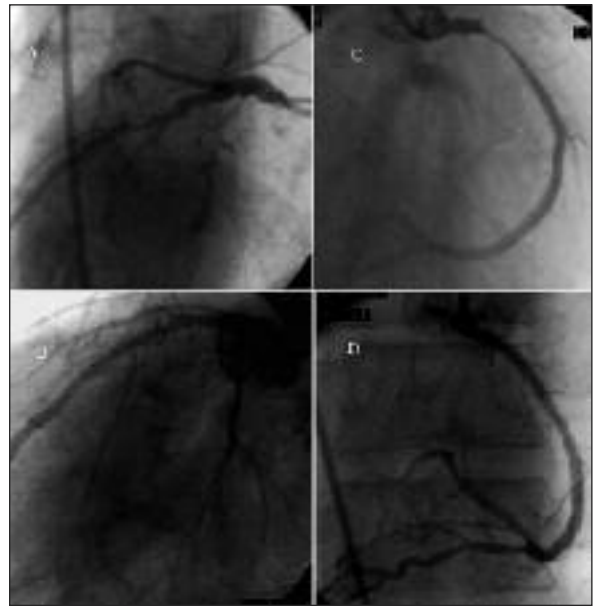


FIGURE 2: A: Pre-intervention left coronary artery angiograms and sub-totally occluded proximal left anterior descending artery B: Post-intervention left coronary angiograms in the same views as above showing successful stenting of the proximal left anterior descending (LAD) artery C: The right coronary angiography in a left anterior oblique view before intervention D: The right coronary angiography in a left anterior oblique view after intervention

with a 3.0 x 24 mm Ephesos stent (Nemed Corp. İstanbul, Turkey) and the left anterior descending artery was directly stented with 3.0 x 18 mm Ephesos stent, both with good angiographic results. His chest pain was relieved and ST depressions were improved after the procedure (Figure 2C-D). The patient was discharged the following day.

DISCUSSION

Dextrocardia with complete situs inversus is a rare condition, occurring in about 2 in 10.000 live births.⁵ Patients with situs inversus and mirror-image dextrocardia have normal longevity and are thought to have coronary disease with no more frequency than the normal population.^{6,7} There have been few reports of PCI's in these patients. Although several cases of dextrocardia have been described and reviewed.^{1,2,6,7} This case is of interest as it is involved two vessel angioplasty. Primary angioplasty and upfront stenting have become the preferred mode of reperfusion in acute coronary syndrome. Saha et al reported successful PCI of the

LAD and RCA in acute coronary syndrome with dextrocardia.¹ Our report shows a successful PCI using upfront stenting of the LAD and RCA, and no difficulty using standard catheters for cannulation of the coronary arteries by rotating the catheters in the opposite direction.⁴ This report confirms the utilization of a conventional modern technique for mechanical revascularization in patients with dextrocardia and situs inversus and shows a clear

anatomic, electrocardiographic and clinical improvement for successful myocardial reperfusion. Our report demonstrates the safety and feasibility of PCI with dextrocardia with use of standard Judkins catheters, standard image acquisition, and counter rotation of catheters.⁸ In summary we report an extremely rare case of the percutaneous treatment of a coronary stenosis in dextrocardia and situs inversus.

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