complication was ruled out with transesophageal echocardiography. Electrocardiography was normal. A live healthy baby was delivered by caesarean section at 39 weeks of gestation without any complications during the labor and postpartum period.

During pregnancy, echocardiographic cardiac chamber dimensions increase by 2 to 5 mm (4). Cardiac output increase 50% mainly due to an increase in stroke volume. Systemic vascular resistance decreases due to the low resistance in the uterine vessels and elevated levels of vasodilators (2). However, we observed a decrease in cardiac output and an increase in TPR in our patient. Mechanical mitral valve replacement behaves like mild mitral stenosis. Therefore, with increased volume load and tachycardia together may cause the patients to deteriorate and advance from one NYHA class to another. The increased heart rate of pregnancy may limit the time available for left ventricular filling, resulting in increased left atrial and pulmonary pressures and an increased likelihood of pulmonary edema. However, we could not conclude accurate results with only one patient. Therefore, we planned to make a study about this subject with more patients.

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Two-year results of primary coronary intervention performed in a medium-scale primary percutaneous coronary intervention center by two cardiologists who are not formally trained in interventional cardiology

Orta ölçekli bir primer perkütan girişim merkezinde resmi girişimsel kardiyoloji eğitimi almamış iki kardiyolog tarafından yapılan primer PKG'lerin iki yıllık sonuçları

Primary percutaneous coronary intervention (PCI) is the preferred option when it can be performed in less than 90 min after the first medical contact, especially in patients with high-risk features such as cardiogenic shock or hemodynamically significant fatal ventricular arrhythmia in AMI (1). Current recommendations indicate that elective percutaneous transluminal coronary angioplasty (PTCA) be performed by operators with an annual volume of at least 75 procedures in institutions with annual volumes over 400. Furthermore, primary PTCA for AMI should be performed by operators who perform more than 75 elective PTCA procedures per year and at least 11 PTCA procedures for AMI in a year.

The purpose of the present study was to compare angiographic results and in-hospital outcomes in AMI patients undergoing primary PCI at moderate volume hospital by 2 operators without formal interventional cardiology training. From January 2007 to December 2008, 140 consecutive patients (110 male and 30 female) with a diagnosis of AMI, who were admitted to TDV 29 Mayıs İstanbul Hospital for primary PCI within 12 hours of chest pain were enrolled in the present study. We retrospectively analyzed clinical background, coronary risk factors, angiographic findings, acute results of primary PCI, and in-hospital prognosis in patients treated at our hospital. Primary PCI's were performed by two operators without formal interventional cardiology training but with minimum experience suggested in guidelines. Both cardiologists received 5 years of basic cardiology training and acquired angioplasty skills through "on-the-job" experience under experienced supervisors. As of 2011, there is still no formal interventional cardiology training in our country and many physicians are trained through "on-the-job" experience. Data were analyzed using SPSS for Windows release 10 software (Chicago, Il, USA).

The study population consisted of 110 male and 30 female patients with a diagnosis of AMI. Average follow-up was 12.86 +/- 6.43 months. In- hospital mortality was 4.3% and 1- year mortality was 7.1%. Other clinical parameters and angiographic results are given in Table 1.

In some parts of the world, there is still no formal interventional cardiology training programs and coronary angioplasty technique is disseminated informally among physicians who are highly experienced at diagnostic cardiac catheterization. During this period, physicians acquire angioplasty skills through "on-the-job" experience, and no official standards exist for either training requirements or for demonstration of competence. Whether low volume hospitals/operators or operators without formal interventional cardiology training and certification should continue to perform primary PCI or patients receive early thrombolytic therapy is an important issue (2-4). In our small study group average hospital stay (4.14±2.62 days), in-hospital mortality (4.3%), 1 year mortality (7.1%), rate of in-hospital reinfarction (2.9%) and in-hospital cerebrovascular accident (0.7%) were all within acceptable limits. We ascribe these results to obsessive attention of inexperienced operators to optimal anticoagulant, antiaggregant use, detailed no-reflow treatment plan, high quality stent/balloon use, good cooperation with angiography and coronary care personnel. Regular meeting among two cardiologists and cardiovascular surgeons provided a quality check and stimulus for improving practice.

Our data showing low mortality, complication and hospital stay supports that there is not a significant relationship between operator volume over the threshold indicated by the guidelines and primary PCI early outcomes and complications. A minimum of 75 coronary interventions per operator per year may be enough in the future to obtain formal certification where there is no formal interventional cardiology training programs and larger studies are needed.

Table 1. Patients' clinical characteristics

Variables	
Age, years	58.35±11.60
Sex, male, n (%)	110 (79.2)
Diabetes mellitus, n (%)	35 (25)
History of myocardial infarction, n (%)	9 (6.4)
Culprit artery, n (%)	
LAD	64 (45.7)
CX	19 (13.6)
RCA	52 (37.1)
Saphenous graft	2 (1.4)
Side branch	3 (2.1)
No-reflow, n (%)	41 (29.3)
Length of hospital stay, days	4.14±2.62
Creatinine, mg/dl	1±0.29
Killip classification	1.18±0.63
IABP use, n (%)	7 (5)
Duration of chest pain at presentation, hours	3.74±2.53
TIMI flow before procedure	0.5±0.83
TIMI flow at the end of procedure	2.64±0.67
In-hospital mortality, n (%)	6 (4.3)
1-year mortality, n (%)	10 (7.1)
In-hospital stent thrombosis, n (%)	3 (2.1)
In-hospital reinfarction, n (%)	4 (2.9)
In-hospital cerebrovascular accident, n (%)	1 (0.7)

CX - circumflex artery, IABP - intra-aortic balloon pump, LAD - left anterior descending artery, RCA - right coronary artery, TIMI - Thrombolysis in Myocardial Infarction

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"Erzincan'da anjiyografi cihazı kurulur mu?" derken kamudaki ilk radiyal anjiyografi merkezini başlattık

We built the first public radial angiography laboratory contrary to the hesitation that conventional coronary angiography could have been performed in Erzincan

Sayın Editör,

Kardiyoloji uzmanı olarak 2009 yılının Şubat ayı sonunda Samsun'da Sahra Sıhhiye Okulu'nda acemilik eğitimini yapıp, torbacıdan hemen önce Van yerine Erzincan'ı kurada çektiğimde bu ilde Tıp Fakültesi olduğunu dahi bilmiyordum. Merhum Erzincan Üniversitesi Rektörü kuantum fizikçi Prof. Dr. Erdoğan Büyükkasap Erzincan'da anjiyografi merkezi kurulacağını söyleyerek beni Tıp Fakültesine davet etti. "Girişimsel kardiyoloji alanında üstün deneyim sahibi olmak" kriterine göre Erzincan Tıp Fakültesi tarihinin ilk öğretim üyesi olarak göreve başladım.

Erzincan'a geldiğimde üniversitenin uygulama hastanesi henüz yoktu. Üç aylığına Özel Maltepe Üniversitesi Kardiyoloji Anabilim Dalı'na giderek radiyal anjiyografi kursu aldım. Döndüğümde Erzincan Devlet Hastanesi'nde çalıştım. Sonra Mengücekgazi Eğitim ve Araştırma Hastanesi'nde Kardiyoloji ve Kalp Damar Cerrahisi kliniklerinin yapılanmasında görev aldım: İhaleler, soğuk, toz ve inşaat. Aynı zamanda soğuk odamda doçentlik sınavına hazırlandım. Hastanemiz 23 Mayıs 2011 tarihinde üniversite ile afiliye olarak hizmete açıldı. Ben de kardiyoloji doçenti olarak Tıp Fakültesi'nin Kardiyoloji ABD başkanlığını yürütmekteyim.

Koroner anjiyografi Erzincan'a kurulur mu kurulmaz mı? ilin nüfusu bu konuda yetersiz derken ve halkın "hastalarımız Erzurum yolunda Tercan'ı geçemeden ölüyor" isyanı Sağlık Bakanı'nın ikna edilmesi ile Erzincan'a koroner anjiyografi kuruldu. Başkanı olduğum ekip 13 Ağustos 2011 günü Erzincan'da ilk koroner anjiyografiyi iki vaka ile radiyal arterden gerçekleştirdi. İlk vakamız 65 yaşında erkek olup 11 yıl önce baypas ameliyatı olduğundan sol radiyal arterden girerek koroner anjiyografi yaptık. İkinci sıradaki hastamız 83 yaşında ve diyabetik olup, istirahat bacak ağrısı nedeniyle sağ radiyal arterden girerek koroner ve periferik anjiyografi uygulandı. Bundan sonra T.C. Sağlık Bakanlığı kadrosundaki iki uzman doktor tarafından izinli olduğum dönemde femoral arterden 5 koroner anjiyografi ve girişim (2 olguda primer balon anjiyoplasti, 1 olguda doğrudan stent) uygulandı.

"Erzincan'a koroner anjiyografi gerekli midir?" sorusunun yanıtını bana göre hastalar vermiş oldu. Bu yanıta şöyle katkıda bulunuyoruz: "Erzincan'da kamudaki ilk radiyal anjiyografi merkezini kuracağız." Bunun gerçekleşmesinde Erzincanlılar başta olmak üzere, Sağlık Bakanımız, Ulaştırma Bakanımız, eski ve yeni rektörlerimiz çok çalıştılar. Mutfağı hazırlamak benim başkanlığımdaki ekibe kısmet oldu. Ekibim adına tüm Kardiyoloji camiasına da bize verdiği destekten ötürü teşekkür ediyorum.

Erzincan için Tıp Fakültesi olarak başka çalışmalarımız da vardır. Erzincan'a ilk kez eğik masa testi, dış döngü kaydı, olay kaydedici, geçi-