ACS due to plaque rupture and coronary embolization. Intravascular ultrasound (IVUS) could be used to distinguish between cardiac thrombus formation could help in this situation. Moreover, sis and as we have experienced in our case, the predisposition for arteries due coronary atherosclerosis and other in situ causes. Risk lism originates from the difficulty to distinguish whether the thrombus are rare (5).

result, embolizations to the left system involving the circumflex artery runs at a 90 -degree angle from the left main coronary artery, and as a and high velocity of the flow in the proximal aorta. Circumflex artery behind the cusps of aortic valve, angulations of the coronary arteries coronary emboli is rare due to the origination of the coronary ostia just cases have been reported in literature (4).

Common cardiac causes of systemic embolism are ventricular mural thrombus, LAA thrombus secondary to valvular pathology or chronic atrial fibrillation, prostatic valves or calcified leaflets, cardiac tumors, infective endocarditis, paradoxical embolism through an atrial septal defect or patent foramen ovale (1). In patients with mitral stenosis, systemic embolization of an atrial thrombus is rather frequent and the incidence is 10-20% (2). The risk of embolization increases with atrial fibrillation and age; however, embolization can be seen even in patients with sinus rhythm (3). Prevalence of coro- nary embolization in patients with mitral stenosis is unknown but a few cases have been reported in literature (4).

Although the arterial embolization in mitral stenosis is frequent, coronary emboli is rare due to the orignation of the coronary ostia just behind the cusps of aortic valve, angulations of the coronary arteries and high velocity of the flow in the proximal aorta. Circumflex artery runs at a 90 -degree angle from the left main coronary artery, and as a result, embolizations to the left system involving the circumflex artery are rare (5).

Diagnostic challenge in patients thought to have coronary embo- lism originates from the difficulty to distinguish whether the thrombus had embolized to the coronary bed, or was formed in the coronary arteries due coronary atherosclerosis and other in situ causes. Risk factors, history of hereditary coagulopathies, presence of atherosclero- sis and as we have experienced in our case, the predisposition for cardiac thrombus formation could help in this situation. Moreover, intravascular ultrasound (IVUS) could be used to distinguish between ACS due to plaque rupture and coronary embolization.

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Video 1. On transthoracic echocardiographic examination (TTE), left ventricular ejection fraction was normal but there was mitral stenosis

Video 2. Coronary angiography showed that the patient had normal coronary arteries except for a total occlusion in the distal obtuse marginal branch of circumflex artery

Figure 2. 2D (A) and 3D (B and C) transesophageal echocardiographic views of a thrombus (arrows) in left atrial appendix (LAA)

LA - left atrium, LV - left ventricle, MA - mitral annulus, PL - posterior mitral valve leaflet

Video 3. 2D-Transesophageal echocardiogram showing left atrial appendix thrombus and spontaneous echo contrast in LAA

LAA - left atrial appendix

Video 4. 3D-Transesophageal echocardiogram showing left atrial appendix thrombus and spontaneous echo contrast in LAA.

LAA - left atrial appendix

References

4. Liang M, Kelly O, Puri A, Devlin G. Mitral stenosis as a risk factor for embo- lism myocardial infarction-anticoagulation for some patients, individual treat- ment for all. Heart Lung Circ 2011; 20: 728-30. [CrossRef]
5. Bawell MB, Shrader EL, Moragues V. Coronary embolism. Circulation 1956; 14: 1159-63. [CrossRef]

Psychological problems in patients awaiting coronary angiography: a preliminary study

Koroner anjiyografiyi bekleyen hastalarda psikolojik problemler: Bir ön çalışma

Coronary angiography (CA) is the gold standard for diagnosis of coronary artery disease (CAD) (1, 2). Currently, in many centers in Iran CA has become a main diagnostic procedure for diagnosis of CAD (1). CA is very stressful procedure for most patients (3). Patients experience psychological problems and consequently hemodynamic instability in response to an invasive CA (2, 4). Many studies investigated patients’ anxiety before CA and used of interventions to reduce this problem (3, 5), but assessment of stress, anxiety and depression of patients awaiting elective CA in our country has not yet been investigated.

The present study is a descriptive cross sectional study conducted in southeast Iran. From January to April 2009, patients aged 25 to 75 years, free of known psychiatric disorders, without history of previous CA and free of taking psychotropic drugs recruited for this study. After admission to the ward, the purpose of the study was explained. In addi- tion, informed written consent form was completed by all the patients. Psychological variables as stress, anxiety and depression were collected by interview. The depression, anxiety, stress scale -21 (DASS-21) was used for assessment of psychological problems. This tool is a widely used scale for measuring depression, anxiety and stress in adults (4). For analysis of data, frequencies, mean and standard devia- tion were reported. Chi-square test and correlation coefficient test
were performed to comparison of DAS based on sex, job, marital status and other demographic data. The level of significance was set at $p<0.05$.

The mean and standard deviation age of 128 patients included in this preliminary study was 53.23 (SD=9.51). In the assessment of psychological variables, the results of this preliminary study showed that the abnormal levels of stress, anxiety and depression in patients awaiting CA were 97.6% (40.6% moderate, 57.0% severe), 66.4% anxiety (55.5% moderate, 10.9% severe) and 20.3%, respectively.

The differences between the levels of anxiety and stress in male and female was statistically significant ($p=0.000$) and stress ($p=0.04$). Also, a statistically significant was seen between marital status and anxiety level ($p=0.000$).

The findings of this preliminary study showed that the patients awaiting elective CA experienced higher levels of psychological problems. In other studies results showed that the anxiety and stress of patients before CA was high (3, 5). Harkness et al. (6) concluded that waiting for cardiac catheterization can cause anxiety of patients. In a qualitative study by Beckerman et al. (7), anxiety of patients before cardiac catheterization was related to physical discomfort and fear. Anxiety of patients waiting for CA may be related to lack of knowledge and uncertainty (8). In this study, we assessed the levels of psychological variables at the admission time to the wards and most of the patients were not informed about the procedure of CA.

It is necessary to inform patients waiting for CA about procedure and psychological support for decrease in the levels of anxiety, stress and depression of these patients. The nursing cares before CA should focus on informing and support of patients.

### References

2. Chair SY, Li KM, Wong SW. Factors that affect back pain among Hong Kong Chinese patients after cardiac catheterization. Eur J Cardiovasc Nurs 2009; 8: 150-5. [CrossRef]