

**Friday, July 17, 1981**

## Oral Presentations

### Thrombosis, Clinical – XI

#### Arterial

08:00–09:30 h

### Thrombosis, Clinical – XII

#### Arterial Thrombosis Treatment

09:45–11:00 h

#### Cinema 1

**0813**

08:00 h

COMPUTERIZED AXIAL TOMOGRAPHIC (CAT) DIAGNOSIS OF VASCULAR THROMBOSIS AND PATENCY OF AORTO-CORONARY BYPASS GRAFT. Rogelio Moncada, Matias Salinas, Robert Churchill, Leon Love, Carlos Reynes, Jawed Fareed, Zaheer Parvez, Harry L. Messmore, Loyola University Medical Center, Maywood, IL 60153, U.S.A.

During the past decade, aorto-coronary bypass surgery (ACBS) has been widely prescribed as treatment of angina pectoris. Dysfunction or closure of an aortocoronary bypass graft (ACBG) is generally suggested by a number of vague subjective complaints and few, if any, objective signs derived by history, physical examination, resting and stress E.K.G., and lately by Thallium<sup>201</sup> regional myocardial perfusion studies. Definitive confirmation of graft closure or stenosis has traditionally required post operative selective catheterization and angiography of the grafts in question. We have utilized CAT to determine patency of an ACBG with encouraging results. Biological motion has been the principle deterrent to the use of CAT in evaluating the coronary arteries and cardiac chambers. Third and fourth generation scanners have been employed to explore the feasibility and potential use of CAT in imaging cardiac structures. Surprisingly, excellent quality images are currently being obtained with exposure times of one to five seconds, even though some of these images are reconstructed from repetitive data obtained during one or more cardiac cycles partially degrading the image. CAT demonstration of the cross-sectional anatomy combined with simultaneous contrast media enhancement represents the basic ingredients utilized to demonstrate the patency of ACBG. Sixty-five patients have undergone this procedure after single or multiple revascularization procedures. Eighteen of these patients, with a total of thirty-three grafts, had correlative selective angiography of the individual venous grafts. Twenty-two grafts proved to be patent with both techniques while ten of eleven thrombosed grafts were properly predicted by CAT. The benefits of this relatively non-invasive, safe, repeatable, and accurate method for detecting ACBG is presented.

**0815**

08:30 h

DETECTION OF HYPERCOAGULABLE STATE BY MEASURING MECHANICAL IMPEDANCE OF CLOTTING WHOLE BLOOD. K. Sugiura, M. Handa, Y. Yoshii, Y. Ikeda, K. Toyama, F. Ono, K. Watanabe and Y. Ando. Department of Internal Medicine and Department of Clinical Laboratory, School of Medicine, Keio University, Tokyo, Japan.

The transition of mechanical impedance of clotting whole blood was determined by Sonoclot (Scienco Inc. U.S.A.) in 22 normal individuals, 14 patients with arterial thrombosis and 20 patients with venous thrombosis. Sonoclot primarily senses loss modulus and records entire coagulation process continuously. Peak g represents the maximum mechanical impedance of clot and slope i represents the rate of gelling process. Sixty-five per cent of cases with venous thrombosis and 36 % of cases with arterial thrombosis showed abnormally high values either in g or in i. In venous thrombosis, there were positive correlations between hematocrit and i, and between fibrinogen and g ( $r=0.6$ ,  $p<0.01$ ). In arterial thrombosis, there were positive correlations between platelet count and g ( $r=0.6$ ,  $p<0.05$ ) and negative correlations between fibrinogen and g and also between fibrinogen and i ( $r=-0.6$ ,  $p<0.05$ ). In normal individuals, no significant correlations were noted between any two of these parameters.

Our results suggest that analysis of clotting process from the biophysical aspect is important to demonstrate hypercoagulable state and that mechanical impedance can be a common indicator of hypercoagulable state.

**0814**

08:15 h

THE APPLICATION OF COMPUTED TOMOGRAPHY IN THE DIAGNOSIS AND MANAGEMENT OF DISSECTING AORTIC ANEURYSMS. Rogelio Moncada, Matias Salinas, Harry L. Messmore, Jawed Fareed, Zaheer Parvez, Leon Love, Carlos Reynes, T. Demos, and Robert Churchill. Loyola University Medical Center, Maywood, IL 60153, USA.

Dissecting aortic aneurysm (DAA) is a well recognized clinical entity with a dramatic pathologic presentation and potentially lethal outcome. The diagnosis is generally suspected by a spectrum of classical symptoms and physical signs. Confirmation of this vascular disorder is usually accomplished through aortography. We have utilized computed tomography of the torso combined with simultaneous intravenous bolus injection of radiologic contrast media in sixteen patients suspected of having dissected aorta. All patients had subsequent correlative percutaneous aortography within twenty-four hours of the initial examination. Of the sixteen patients examined, four proved to be normal, one had an aneurysm of the thoracic aorta and eleven had aortic dissection; five Type I and six had Type III dissection. All eleven patients with aortic dissections were diagnosed by computed tomography and angiography; nine had spontaneous dissection and two had iatrogenic injuries to the aorta. Early experience with computed tomography-enhancement technique has reliably demonstrated normal as well as pathologic aortic wall morphology. We recommend that a CT enhancement study be the preliminary screening in all suspected cases of aortic dissection. Furthermore, this technique can be used for evaluation after medical or surgical treatment or in patients suspected of having rapid aortic expansion or rupture of the paracardium or the pleura.