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FREE COMMUNICATIONS IX

Thrombosis: Pathology and Blood Changes.

IN VIVO FIBRINOPEPTIDE A GENERATION INDUCED BY ANGIOGRAPHIC CATHETERS. G.D. Wilner, W.J. Casarella, C. Fenoglio and R.E. Baier. Columbia University College of P & S, New York, N.Y. and Calspan Corporation, Buffalo, N.Y., U.S.A.

The use of fibrinopeptide A (FPA) levels to assess the hemostatic biocompatibility of prosthetic devices has been evaluated. Commercial angiographic catheters (7 French) of 5 different materials were introduced percutaneously 10 cm retrograde into the femoral arteries of anesthetized mongrel dogs. Catheter lumens were continually flushed with saline (1 ml/min). At intervals over a 30 minute period, saline flow was stopped and blood samples were withdrawn through the catheter lumen for FPA assay. Clot formation in catheter lumens was evaluated by scanning electron microscopy (SEM). The catheters could be divided into three groups based on FPA level generated and deposition of fibrin and platelets in the lumen. Group I (the PERT catheter) caused no increase in FPA (mean level 0.5 pmol/ml, equal to the level in the absence of any catheter), no fibrin deposition, and moderate platelet deposition. Group II (Torcon and Teflon catheters) caused moderate FPA generation (mean 7.1 pmol/ml), moderate fibrin deposition, and moderate platelet deposition. Group III catheters (polyurethane and Dacron) caused marked FPA generation (mean 26.2 pmol/ml), marked fibrin deposition, but variable platelet deposition. Thus mean FPA levels over the 30 minute experimental period correlated well with intraluminal fibrin deposition; FPA measurements should be useful in assessing the degree to which different catheters stimulate fibrin formation. FPA levels did not correlate with intraluminal platelet deposition and thus will not reflect platelet contributions to thrombus formation.

EFFECT OF ANGIOGRAPHY ON BLOOD COAGULATION. W.H. Krause and A. Lang. Dept. of Internal Medicine, J. Liebig University, D 63 Giessen, Klinikstr. 36, Germany

It is known, that angiographic contrast media have an anticoagulant activity in vitro. The purpose of the present study was, to investigate this effect in vivo. The catheter was introduced percutaneously according to Seldinger into the femoral artery. The prothrombin time, activated thromboplastin time (APTT), thrombin time, reptilase time, fibrinogen, plasminogen, antithrombin III, platelets, fibrin/fibrinogen degradation products (FDP), haematocrit and contrast media concentration were studied in a series of 50 patients before and following abdominal aorto-arteriographic procedures up to 6 hours. Thrombin time and reptilase time were prolonged significantly 30 and 60 minutes after angiography. There was a correlation between clotting times and contrast media concentrations. Prothrombin time, APTT, and platelet counts remained unchanged. Fibrinogen, plasminogen, and antithrombin III levels showed a significant reduction after 30 minutes. FDP concentrations were increased significantly up to 6 hours, there was no correlation between contrast media concentrations and split products. The results were corrected for contrast media dilution according to the haematocrit. No thromboembolic complication was observed. The results suggest that angiographic procedure may initiate an intravascular coagulation with an activation of the fibrinolytic system. In addition the contrast media showed an inhibition of fibrin polymerization in vivo.