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Early diagnosis of Alzheimer's disease and the differentiation from normal aging

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ARTERIAL HEALING RESPONSE TO CATHETER INDUCED LASER THERMAL AND MECHANICAL WALL DAMAGE IN THE RABBIT.

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Pulsed lasers are being promoted because they produce virtually no thermal damage to the vessel wall. We investigated the actual harm of thermal damage in comparison with mechanical damage in the iliac arteries and abdominal aorta of the rabbit. We therefore deliberately induced massive thermal injury using three techniques: (a) electrical spark erosion (ESE, n=41), (b) the metal laser probe with a cw Nd-YAG laser (MLP, n=15) and (c) the sapphire contact probe with the cw Nd-YAG (SCP, n=21).

Angiographic and histologic results of these procedures were compared with those of balloon angioplasty (BA, n=22), after 1,3,7,14,21 and 56 days survival. Five perforations (ESE:2, MLT:3) were seen angiographically, another 10 microscopically (ESE:6, MLT:3, SCP:1). Except for 2 cases with macroscopic perforation, all arteries were patent 1-56 days after the intervention, without late perforation or aneurysm formation.

Microscopically, full thickness medial necrosis was found after 1-21 days and myointimal proliferation after 7-56 days. Although wall injury tended to be more conspicuous after thermal interventions, wall healing was adequate and strikingly similar in all events. Evaluation of myointimal proliferation (up to 380 μm), revealed no major differences between the four groups. In conclusion, the normal rabbit artery recovered well from thermal transmural injury. The wall healing response is largely nonspecific.

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Saphire-Probe Laser-Angioplasty: 3-Years Results

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Laser-angioplasty was performed in 338 patients with femoro-popliteal artery occlusions. The mean length of the occlusions was 8.5 cm. The initial recanalization rate was 85%. The initial success rate was significantly dependent upon the length of the occlusion. Occlusions less than 3 cm in length were recanalized in 90%. Occlusions more than 7 cm in length were recanalized in 78%. Complications occurred in 15%, but emergency surgery was required in only 1,5%. Perforations were observed in 4% The long-term patency of the successfully recanalized arteries was 57% after three years. The long-term patency was significantly dependent upon the outflow, but independent upon the length of the occlusion and the long-term therapy (anticoagulation versus platelet inhibition). In patients with 2-3 patent tibial arteries the 3 years patency was 63%, in patients with 0 - 1 patent tibial artery the patency rate was 52%.

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ASYMPTOMATIC PATIENTS WITH RESTENOSIS AFTER CORONARY ANGIOPLASTY : LONG-TERM FOLLOW-UP

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There are only few data available concerning the treatment decision in asymptomatic patients with restenosis after percutaneous transluminal coronary angioplasty. We report the long-term follow-up of 33 patients who had angiographic evidence of restenosis (diameter reduction > 50 %) at the control angiogram (performed at 6,7 months [4-11 months] after PTCA). The mean ($\pm$ SD) value of diameter stenosis was 83 $\pm$ 7 % before PTCA, 29 $\pm$ 7 % immediately after PTCA and 61 $\pm$ 9 % at control angiography. The mean follow-up after control angiography is 22.3 months (9-73 months). All patients had a maximal thallium exercise test at the time of the control angiogram (at least 80 % of the predicted heart rate during upright bicycle exercise). By definition, no patient had chest pain during the exercise test. We decided not to redilate despite significant ECG changes in 4 patients during the exercise test and despite ischemia (related to the dilated artery) at scintigraphy in five patients.

21 patients are still asymptomatic (4 extracardiac deaths occurred respectively at 15, 30, 30, and 32 months without premonitory cardiac symptoms). 8 patients became symptomatic. Eight of these symptomatic patients had a second control angiogram (26 months after the first control). Two patients underwent new PTCA at the same site because of progression of the stenosis. In the six remaining patients, the severity of the stenosis at the site of PTCA was unchanged, but occurrence of angina was due to progression of coronary artery disease in other segments. Thus, during a follow-up of two years, only two patients (6 %) needed a repeated angioplasty at the same site. The low rate of cardiac events in case of angiographic restenosis seems not to justify a new PTCA. The restenosis discovered at systematic control angiography seems to be a stable lesion.

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A STUDY WITH DUPLEX AFTER VASCULAR RECANALIZATION OF FEMORO-POPLITEAL OCCLUSIONS

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Aim of the study was to investigate with Duplex whether when and where restenoses develop after laser percutaneous transluminal angioplasty of femoral artery occlusions. The peak systolic velocity (PSV)at the site of the stenosis was compared with the PSV in the proximal segment and expressed as an increase in percentage. We defined a stenosis as a PSV increase in excess of 100%. After PTLA of the occlusions (1-30 cm mean 6,75 cm) in the mean follow up period of 8 month's, 34 stenoses were found in 32 patients. The femoro popliteal artery traject was divided in 3 segments. A. The region of the former occlusion 25 stenoses were found. 19 stenoses were found within 1 day after PTLA. In the follow up 6 of these disappeared, 3 remained stable while 10 during the next 3 month's increased. B. The region outside the occluded, inside the dilated segment, developed 7 stenoses, 4 within 24 hours after the procedure. C. In the region outside the former occluded or dilated segment 2 stenoses developed. In segment A rest stenoses seems to play a role in restenosis while in segment B the dilatation seems to cause stenoses.

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DEMENTIA AND ALZHEIMER'S DISEASE: FACTORS INFLUENCING THE DIAGNOSIS.

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The diagnosis of dementia, Alzheimer's Disease (AD), multiinfarct dementia (MID) and rather related disorders is largely based on a broad clinical assessment involving several disciplines. In a previous study, the diagnosis of dementia and/or its specific cause was found to be misdiagnosed in up to 45% of the patients referred to our memory clinic, in which an systematic multidisciplinary diagnostic model is adhered. The aim of the present study is to explore further whether there were differences between the relevant disciplines in interpretation of available data and to investigate which factors are of influence on the diagnosis.

Therefore, 458 participants of a Dutch consensus conference on dementia were asked to formulate their diagnosis in 10 case descriptions of patients with dementia and forgetfulness with varying etiologies and complexity. Each description included all necessary data for a diagnosis according to well-accepted research criteria. The diagnosis of a "golden standard committee" of 3 renowned Dutch researchers was used as a reference.

Ninety participants responded. The overall correctness of the responses for the diagnosis of dementia was 77% with no differences between the disciplines. The correctness for the etiological diagnosis was 53%; neurologists and psychologists did significantly better than psychiatrists. The presence of depressive symptoms influenced negatively the correctness. A strong correlation was found between correctness and degree of deterioration.

This study showed clearly the shortcomings of a monodisciplinary approach. Especially in the case of mild dementia or in the presence of depressive symptoms, a broad multidisciplinary approach based on strict criteria is a prerequisite.

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EARLY DIAGNOSIS OF ALZHEIMER'S DISEASE AND THE DIFFERENTIATION FROM NORMAL AGING.

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The present paper discusses the possibility that the early stages of Alzheimer's disease might be characterised by the presence of particular cognitive dysfunctions, personality characteristics and/or biological risk factors. In the first place, experimental evidence is given that healthy normal subjects which have been subjected to a risk factor for brain dysfunction perform inferior on complex tests of memory; (Houx et al); this might predispose them to accelerated cognitive aging and - possibly - Alzheimer's disease. In the second place, middle-aged subjects suffering from either dysthymia or Age Associated Memory Impairment perform inferior to healthy control subjects on information processing tasks (Reyersen et al.). It is probable that particular cases might in fact suffer from early Alzheimer's disease. In the third place, the notion is defended that early detection of Alzheimer's disease is relevant from a health care perspective: Although there is at present no cure for the condition, care can be improved both for the patient and his/her social support system. Fourth, early and differential diagnostic issues will be confirmed by the experimental data obtained with an Expert System for dementia diagnostics which was recently developed by our group (Plugge et al.).