depends not only on relative atelectasis of the dependent lung, but also on the structural integrity of the pulmonary vasculature.

VASCULAR INTERVENTIONAL

THE LONG-TERM FOLLOW-UP OF TRANSFEMORAL EMBOLIZATION OF VARICOCELES

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Since the early 1980's there has been enthusiasm for the transfemoral embolisation of varicoceles as treatment for male subfertility and the relief of discomfort. In this study we attempted to follow-up our first 50 cases (mean 3 years) to judge the technical success rate of the procedure, the effect of the procedure on the varicocele and the benefits to the patient resultant on successful varicocele embolisation. Approximately half our patients were treated for subfertility and half for discomfort.

In the subfertile group ages ranged from 25–47 years and from 14–65 years in the "discomfort" group. The overall technical success rate was 80%, the major reason for failure was anatomical i.e.: numerous collateral vessels. The pregnancy rate in the subfertile group post-procedure was 26%. In the "discomfort" group, 75% of patients on whom long term follow-up was available had a reduction in varicocele size with relief of symptoms.

In conclusion varicoceles can be successfully treated by transfemoral embolisation. The procedure is minimally invasive, relatively cheap, does not require general anaesthesia and the clinical results are comparable to those achieved by surgery.

VIBRATIONAL ANGIOPLASTY: PRELIMINARY CLINICAL RESULTS

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We present the preliminary clinical and experimental findings of a new device which is used to produce a vibratory motion in a standard guidewire used with a catheter in the treatment of chronic coronary artery occlusions. This device also has potential applications in peripheral vascular disease.

The device which is built and developed by MMC Ltd. in Leeds according to a patent held by the author (MRR) consists of a hand held motorised unit which attaches to a standard coronary guidewire and catheter combination produces a reciprocal motion of up to 3 mm. at 30 Hz. and a random motion of up to 5 mm. at 60 Hz.

This device was used in the treatment of 12 cases of chronic coronary occlusion (8 male, 4 female men age 61.8 years, range 49–73). Mean age of occlusion estimated by dating angiography or clinical events was 14.8 months range 7–60 months. In all cases conventional angioplasty with at least two conventional wires failed to cross the lesions. Using the vibrational device all 12 lesions were crossed using either blunt ended (5/12) hydrophyllic (4/12) or floppy (1/12) wires. Following crossing the lesions, successful angioplasty was carried out in 10/12 cases, in 2 cases the balloon could not be passed over the wire.

We conclude that vibrational angioplasty using a simple hand held device can increase the success rate in difficult coronary angioplasty. This device may have applications in peripheral angioplasty.

ASSESSMENT OF THE PULLBACK ATHERECTOMY CATHETER (PAC) IN THE TREATMENT OF PERIPHERAL VASCULAR DISEASE

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Introduction: Percutaneous atherectomy has been proposed as an alternative to balloon dilatation in the treatment of peripheral vascular disease. Avoiding the trauma of balloon dilatation may decrease excessive neointimal hyperplasia formation and thus improve long-term patency. A prospective multi-centre study is being performed to assess whether the Pullback Atherectomy Catheter is a useful atherectomy tool and whether the long-term results are more favourable than those of balloon dilatation alone. We present the results from St George's Hospital.

Subject and Method: The PAC has been used in 28 cases (25 patients) at St George's Hospital. In 23 cases it was used to treat femoro-popliteal occlusive disease. The PAC has also been used in the following: Tibial stenosis (1), Stent recurrence in the external iliac artery (1), Graft anastomotic stenoses (2), Resection of an intimal flap (1).

All patients have been followed up with 24 hour and one month ankle brachial indices (AMI) and an arteriogram at 6 and at 12 months.

Results: Apart from the cases of tibial PAC, stent reccurrence, flap resection and graft anatomoses, all but one case has needed balloon dilatation following treatment with PAC to provide an angiographically adequate arterial lumen. Ten patients have reached 6 month follow-up with recurrence of 2 lesions. Both these patients have undergone a second PAC procedure. A third patient with progressive disease above the site of PAC underwent a second PAC procedure of this new site. 18 cases have reached 1 month follow-up with mean improvement of ABI from .59 to .76. There has been one complication of distal embolisation in a femoral occlusion > 10 cm, which was treated by percutaneous aspiration thrombectomy.

Conclusion: The PAC is a safe and easy atherectomy catheter to use. However, it does not provide an adequate arterial lumen without additional balloon dilatation and therefore it is unlikely to alter the longterm patency rates. Its main role is in the treatment of neointimal hyperplasia (eg stent recurrences and graft anastomatic stenoses) and it can be used to resect intimal flaps following balloon dilatation which may threaten the arterial lumen.

PRELIMINARY RESULTS OF PULL BACK ATHERECTOMY IN PERIPHERAL VASCULAR DISEASE

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Introduction: Pull back atherectomy catheter is a new devise which has been produced to treat peripheral vascular disease. North Staffordshire Hospital is one of the centres taking part in a multi centre trial to assess the results of pull back atherectomy with regard to complications such as perforations, intimal dissections, distal embolisations and restenosis. The results of patients treated at North Staffordshire Hospital will be presented in this paper.

Design: Prospective on going study.

Subject and Method: Patients with symptoms of claudication, rest pain, ulceration and stenoses or occlusions of the superficial femoral and popliteal arteries are included in the study. Patients are commenced on aspirin, warfarin or both following the procedure for at least 6 months. The clinical category, ankle brachial index and the percentage stenosis are measured pre and post procedure. The ankle brachial index is also measured 1, 6, and 12 months following the procedure and follow up angiograms are done at 6 and 12 months.

Results: To date we have treated 10 patients with 15 lesions in the superficial femoral arteries. The age range of the patients were between 48 and 77 years. The average length of the lesion was 2 cms and the average percentage stenosis pre atherectomy was 82%. The average percentage stenosis post atherectomy and at 6 months were 14% and 21% respectively. The pre and post artherectomy average ABI values were 0.63 and 0.83 respectively. The average ABI values at 1 and 6 months were 0.90 and 0.79 respectively.

The follow up angiogram at 6 months showed patency of the vessels treated in all patients but in some there was evidence of progression of disease mainly at other sites. No complications were encountered related to the procedure, but one patient died 3 days after the procedure due to myocardial infarction.

Conclusion: In this limited study of only 10 patients pull back atherectomy has been shown to be a satisfactory method of treatment of stenoses and occlusions in the superficial femoral arteries with no significant complications and satisfactory patency rates at 6 months post procedure.

CLINICAL OUTCOME USING THE HIGH FREQUENCY ABLATOR IN RECANALIZING OCCLUSIVE DISEASE

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The high frequency ablator can be used to cross occlusions where conventional angioplasty has failed. A retrospective analysis of 48 procedures over 4 years was performed. Information regarding technical and clinical success, complications and follow up was obtained.

48 procedures on 46 patients were followed up and the range of occlusion lengths was 1 cm to 40 cm. 28 procedures (58%) were clinical successes at 24 hours. 10 procedures (21%) had insufficient data to assess success. There were no complications requiring surgery.

The mean follow up was 17 months, with 25 out of 28 cases (89%) being patent at the last available follow up. Within the 28 successful cases, 14 had occlusion lengths greater than 10 cm, and 12 of these were patent at the last available follow up. Occlusion lengths were not significantly different in the failed or successful groups with a mean length of 15 cm.

The use of the HAT-100 as an adjunct to conventional angioplasty techniques is safe, cost effective, durable and useful in longer occlusions.

THE VALUE OF PRELIMINARY VENOGRAPHY IN HICKMAN CATHETER INSERTION

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Introduction: The purpose of the study is to establish whether preliminary venography should be carried out routinely prior to insertion of Hickman catheters.

Design: Retrospective study

Subject and Method: Percutaneous insertion of Hickman catheters was carried out under fluoroscopic guidance in 80 consecutive patients. Each procedure was preceded by venography via an antecubital vein. The venograms were reviewed and correlated with each patient's clinical history.

Results: In 6 patients (7%) the preliminary venogram showed significant abnormalities precluding central venous catheter insertion. In three patients (35%) there were significant predisposing factors to venous thrombosis. In the other three (3.5%) the venous abnormality was completely unexpected.

Conclusion: Preliminary venography is useful prior to Hickman catheter insertion to facilitate the puncture and to demonstrate any venous pathology precluding catheterisation.

BREAST

WEST DEVON BREAST SCREENING EXPERIENCE – ARE SURGICAL BREAST CLINICS NECESSARY?

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Since the recommendation of the Forrest report, breast screening is now well established in the UK. We report our results and describe the organisation of the screening programme for the prevalent screening round 1989–1993. This involves a multidisciplinary approach to the diagnosis and management of screen detected breast tumours which utilizes a dedicated operating list. During this period, 31,536 women were screened (74.7% compliance) and 386 biopsies (1.2% rate) performed with a benign to malignant ratio of 0.6/1. The overall cancer detection rate was 7.7/1000 women and a small cancer (< 1 cm) detection rate of 2.4/1000 (Pritchard > 1.5).

Patients recalled are further assessed by a Breast Clinician and Radiologist, who decide with all the information available (including FNAC) if a biopsy is required. Close liaison with the surgeons is vital and they are accessible should the need arise for problem cases. The dedicated operating list is set aside for one afternoon per week and is staffed by 2 general surgeons with an interest in breast disease.

Our experience shows that in a busy district general hospital with no organised breast clinics and with many women living far away, that there is no compromise in the quality of service we provide.

THE ACCURACY OF STEREOTACTIC FINE NEEDLE ASPIRATION CYTOLOGY (SFNAC) IN THE DIAGNOSIS OF NON-PALPABLE SCREENING DETECTED BREAST LESIONS

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Introduction: Stereotactic FNAC of non-palpable breast lesions is used to decrease the number of benign surgical biopsies and to allow a definitive preoperative diagnosis of malignancy to be made. The purpose of this study is to measure the accuracy of the technique.

Design: Retrospective.

Subject and Method: The Study Group consists of 494 women undergoing SFNAC for suspicious nonpalpable breast lesions. For each case, the Outcome (No Surgery, Surgery-malignant, Surgery Benign), the Cytology result (C1 inadequate, C2 Benign, C3 Equivocal, C4 Suspicious, C5 Malignant) and the mammography sign were recorded. Measurements of accuracy were calculated using standard definitions (Guidelines for Cytology Procedures & Reporting in Breast Cancer Screening. NHSBSP Pub.22 Sep.1992)

Results: 350/494 (70.8%) women had surgery (102-benign; 248-malignant) 144 (29.2%) were diagnosed as benign from cytology and mammographic findings and did not have surgery. For SFNAC--

Absolute Sensitivity	= 118/248 (47.6%)
Complete Sensitivity Specificity	= 203/248 (81.8%)
(Surgical biopsy cases only)	= 46/102 (45.1%)
Specificity (All cases)	= 160/246 (65%)
False Negative Rate	= 26/248 (10.5%)
False Positive rate	= 2/248 (0.8%)
Positive Predictive Value C5	= 118/120 (98.3%)
Inadequate Sample Rate	= 62/494 (12.5%)

Conclusion: SFNAC is an effective diagnostic technique but must be considered together with the mammography findings when deciding on management of non palpable breast lesions.

AN ANALYSIS OF THE BENEFIT OF THE SECOND MAMMOGRAPHIC REPORT IN THE PREVALENCE ROUND OF A MAMMOGRAPHIC POPULATION SCREENING PROGRAMME

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Introduction: In the Forrest screening programme financial provision was made for single reading, although the trials used double reporting by radiologists. The present study analyses the benefit of the second radiological report, its cost and the effects of learning in a new team.

Design: In a prospective study 33,731 women were screened in the prevalence round between 11/87 and 3/91. Films were read blind by two radiologists, and statistical analysis was undertaken. The difference in detection rate is used to estimate the cost/benefit of the second report.

Method: For the purpose of comparison, the McNemar paired test has been used. Interval cancers were traced through the symptomatic clinic and the Thames Cancer Registry.

Results: Of the 33,731 women screened, recalls were proposed by the first reader on 2330 women (6.9%), and 239 of these women had cancer. From the second view a further 30 cancers were identified. Senstivity improved steadily and the recall rates declined, both for individuals and the team while maintaining the cancer detection, and with an improving benign to malignant biopsy ratio.

Conclusion: The second radiologist report resulted in an increase of cancer detection of 30 cancers in 269. The cost of the additional report is balanced against the additional costs incurred and the benefits of the improved cancer detection.

WEST DEVON BREAST SCREENING EXPERIENCE OF ULTRASOUND LOCALIZATION OF IMPALPABLE BREAST TUMOURS

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Following screening mammography, accurate preoperative localization of impalpable breast tumours is important for successful excision biopsy. Ultrasound localization has advantages of being simple, quick, noninvasive and less distressing for the patient. We reviewed the units experience with ultrasound localization and subsequent histological evaluation. 69 patients presenting through the breast screening programme (Sept '89–Feb '94) with impalpable breast abnormalities clearly visible on Ultrasound, underwent localization. In all cases the abnormalities were easily identified. 58 out of the 69 biopsies (84%) were malignant lesions. The size of abnormalities on Ultrasound ranged 5–20 mm (mean 11.2 mm). The benign lesions were removed either because the radiological appearances were equivocal or fine needle cytology was inadequate. The technique was not associated with any complications.