DOES USE OF AORTIC ULTRASOUND DECREASE STROKE RATE IN CORONARY ARTERY BYPASS GRAFTING (CABG) SURGERY?

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One hundred ninety-five consecutive patients undergoing coronary artery bypass grafting (CABG) between July 1, 1992 and June 30, 1993 (study group) were evaluated for atherosclerotic disease of the ascending aorta by intraoperative aortic ultrasound examination to determine if the information thus obtained could influence the incidence of postoperative stroke. Outcomes were compared to a similar group of 164 consecutive patients who had CABG between July 1, 1991 and June 30, 1992 (control group) in whom the ascending aorta was assessed by inspection and palpation only.

In the control group, a change in technique to no cross-clamping of the ascending aorta was made in two patients, and a single cross-clamp technique in one patient. Five strokes occurred in this group. Six patients died (6/164, 3.6%), one in whom the stroke directly contributed to the cause of death.

In the study group, the ultrasonic findings were: normal to mild changes in 168 patients, moderate changes in 20 patients, and severe changes in seven patients. These results led to a modified technique in 19 patients, including no cross-clamping in 14 patients, modification in placement of proximal anastomoses in two patients, and modification in cross-clamp or aortic cannulation site in three patients. No strokes occurred in this group ($p < 0.01$, Fisher's exact test). Five patients died (5/195, 2.6%).

These data indicate that intraoperative ultrasound of the ascending aorta with simple modifications in operative technique reduces stroke in CABG surgery.

A STRATEGY OF AGGRESSIVE REGIONAL THERAPY FOR ACUTE ILIOFEMORAL VENOUS THROMBOSIS USING CONTEMPORARY VENOUS THROMBECTOMY AND/OR CATHETER DIRECTED THROMBOLYSIS

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INTRODUCTION Occlusive iliofemoral venous thrombosis is associated with morbid short and long-term consequences. Having been disappointed with standard anticoagulant therapy and systemic fibrinolysis, we embarked upon an aggressive multi-disciplinary regional approach to treat these patients, with the goals of therapy being: 1) to eliminate iliofemoral venous thrombus 2) to provide unobstructed venous drainage from the affected limb; and, 3) to prevent recurrent thrombosis.

MATERIALS AND METHODS Twelve consecutive patients were treated for extensive iliofemoral venous thrombosis. Each had thrombus from their infrapopliteal veins through their iliofemoral system and four had vena caval involvement. Eleven patients failed to improve when anticoagulated and five failed prior systemic fibrinolysis. The treatment strategy includes catheter directed thrombolysis with intrathrombus infusion of the plasminogen activator or operative thrombectomy and/or venous bypass with a permanent 4 mm arteriovenous fistula (AVF)

RESULTS Nine of twelve patients had a good or excellent clinical outcome (mean follow-up 25 mos.), which correlated with restored unobstructed venous drainage from the affected limb. Seven patients had catheter directed lytic therapy attempted. In five the catheters were appropriately positioned and lysis was successful. Five of the eight patients operated upon had successful procedures. Two of the three patients with poor operative outcomes had residual thrombus in their iliac veins or vena cava following thrombectomy (without bypass). The third patient, in whom anticoagulation was contraindicated, had an initially successful thrombectomy and AVF, however developed vena caval thrombosis two months post operatively. No patient had symptomatic pulmonary emboli and routine post-treatment ventilation-perfusion lung scans were not performed.

CONCLUSIONS 1) An aggressive multi-disciplinary regional approach to patients with obliterative iliofemoral venous thrombosis, designed to remove thrombus and provide unobstructed venous drainage offers substantially better clinical outcome compared to systemic fibrinolysis and standard anticoagulation. 2) Catheter directed thrombolysis is successful if the catheter is appropriately positioned within the thrombus. 3) Contemporary venous thrombectomy which includes thrombus removal, completion phlebography, arteriovenous fistula and cross-pubic bypass when necessary, is associated with high success rates. 4) Failures can be anticipated and avoided in most patients.

REPORTING THE HIGHEST RATES OF, AND ADDRESSING THE UNDER-UTILIZATION OF, BREAST-CONSERVING SURGERY WITH RADIATION THERAPY AMONG WOMEN WITH STAGE TIS, I, OR II BREAST CANCER.

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Introduction: The National Institutes of Health consensus panel in 1991, concluded that "breast-conservation treatment, with axillary dissection and radiation therapy, is an appropriate method of primary therapy for the majority of women with stage I and stage II breast cancer and is preferable because it provides survival rates equivalent to those of total mastectomy and axillary dissection while preserving the breast." Despite this supporting clinical evidence, the overall rate of acceptance and actual practice of breast-conserving surgery with radiation therapy (BCS) has remained low. We present the highest rate of BCS to be performed on women with stage TIS, I, or II breast cancer, without additional rates of recurrence.

Methods & Patient Population: Over the past 6 years, from mid 1987-mid 1993, we treated 178 cases of Stage TIS, I, or II breast cancer in women. We retrospectively and concurrently reviewed the records of all patients diagnosed with stage TIS, I, or II breast cancer, and found 24 cases (13.5%) were stage TIS, 50 cases (28%) were stage I, and 104 cases (58.5%) were stage II. Tumors were staged according to the criteria of the American Joint Committee on Cancer. The patients were all women, averaging 61 years of age (range 28-91). We considered a number of factors, including: race, height, weight, marital status, family history of cancer, alcohol, tobacco, or hormone use, menstrual status, and cholesterol levels. In addition we studied correlations of important tumor factors, including size, location, micro-histological features, nodal status, tumor receptor status, and forms of adjuvant chemo-, radiation, and hormonal therapies used. Treatment of breast cancer was done in a staging, two step process, with a review of tumor factors and recommendation from a multi-disciplinary approach, leading to a well-informed patient decision. BCS was defined as lumpectomy, quadrant resection, or partial mastectomy; all with or without nodal dissection. Mastectomies were defined as simple and modified radical. Patients were not considered candidates for BCS if they presented with multi-centric tumors in separate quadrants, gross multi-focal disease, diffuse micro-calcifications, or extensive intraductal carcinoma (EIC).

Results: We present the highest rate of BCS to be reported, and the only study where a majority, 53%, of all cases of stage TIS, I, or II breast cancer received conservative treatment. The individual breakdown, showed that 70% of stage I, 50% of TIS, and 46% of stage II tumors, were treated with BCS. According to the criteria detailed above, 75 cases were not considered candidates for BCS, and underwent mastectomy. In all, 103 of 178 cancers (57.8%) were candidates for conservative treatment and 94 of these 103 cancers, 91.3%, eventually chose BCS over mastectomy.

Discussion: Recent studies have begun to address the list of factors causing an underutilization of BCS performed on women with early-stage breast cancer. Numerous clinical studies have shown that the BCS is preferable to mastectomy; as it does not sacrifice the breast, does not place the patient at increased risk of recurrence, but does improve her quality of life and self-image after surgery. To date this, the rate of BCS has not seen widespread national expansion and acceptance; perhaps physician bias towards mastectomy, or uninformed patients and physicians. Through a multi-disciplinary panel approach, we are able to give the patient the best recommendation and recommendation; leading to a well-informed patient choice. We performed the highest rate of BCS for stage I and II breast cancers.

Conclusion: In summary, we believe BCS produces equivalent rates of morbidity as mastectomy, and that BCS is preferable because it can preserve the breast for those patients who present with stage TIS, I, or II breast cancer.

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COMPARISON OF MORBIDITY, MORTALITY, AND OUTCOME FOLLOWING AORTIC AND INFRAINGUINAL BYPASS

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Purpose: To compare the incidence of perioperative major organ system morbidity, mortality, outcome, and preoperative comorbidity associated with reconstructive surgery for aortoiliac occlusive disease and for infrainguinal arterial occlusive disease.

Methods: We reviewed 163 consecutive patients who underwent direct reconstruction of the aorto-iliac-femoral (n=55) and femoro-popliteal-tibial (n=108) arterial segments for incidence of graft complications, morbidity, and mortality.

Results: In the aortic group, limb-threatening ischemia occurred in 41.8%. There was one postoperative death (1.8%). Total cardiac morbidity was 18.2%; pulmonary morbidity 21.8%; renal failure 3.6%; CNS and metabolic morbidity, tissue necrosis requiring major amputation, and graft complications 3.6% each. Few patterns of association between postoperative morbidity and preoperative comorbidity emerged. In the infrainguinal group, the incidence of preoperative limb-threatening ischemia was 65.7%. There were two postoperative deaths (1.9%). The incidence of immediate graft complications (6.5%) and metabolic imbalance (5.6%) were higher, but the incidence of total cardiac morbidity (13%) and pulmonary morbidity (4.6%) were lower than in the aortic group. The incidence of renal failure, stroke, and tissue necrosis were also lower. Closer correlations were found between the presence of smoking, heart disease, and diabetes in postoperative outcomes.

Conclusions: Morbidity and mortality are comparable following both aortic and infrainguinal arterial reconstructive surgery for occlusive disease. Diabetes and heart disease have a greater influence on morbidity following femoro-popliteal-tibial bypass, while lung disease is greater following aorto-iliac-femoral bypass. Implications regarding preoperative testing and intraoperative monitoring are discussed.

TITLE: The Effect of Aging on the Lymphocyte Response to Trauma

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PURPOSE: Studies suggest that immunosenescence appears to be most severe in the T-cell compartment of the immune system. We hypothesized that age related alterations in lymphocyte immunophenotypes as well as interleukin-2 (IL-2) production would be further exacerbated by traumatic injury. This was investigated in an animal model.

METHODS: Fisher 344 X Brown-Norway F1 hybrid rats were used to compare elderly (24 - 28 month old) to young (6 - 8 month old) animals. Traumatic injury was induced by laparotomy with 40% liver resection under general anesthesia, while controls received general anesthesia only. Blood was obtained after 24hrs. for analyses. Serum IL-2 was measured by the "antibody sandwich" ELISA technique. Flow cytometry was used to identify lymphocyte phenotypic subsets by cell surface expression of CD3, CD19, CD4 and CD8 antigens.

RESULTS: There was no significant difference in IL-2 levels between elderly and young control animals (3.1 +/- 0.5 vs 4.2 +/- 1.6 pg/ml). However elderly rats had a diminished IL-2 response to traumatic injury compared to young rats (3.3 +/- 2.5 vs 6.3 +/- 1.3 pg/ml; $p<.01$ by t test). A trend toward increase in CD8 with trauma was seen in both elderly and young rats but there was no age related statistically significant difference. Trauma resulted in a significant difference in the percentage of CD3 (49.7 +/- 7.8 vs 36.4 +/- 7.1; $p<.05$) and CD19 (36.5 +/- 4.3 vs 26.7 +/- 8.6; $p<.05$)(t-test).

CONCLUSIONS: IL-2 is increased in response to trauma in the young but not in the elderly. Aging does not alter the expression of CD4 and CD8 after traumatic injury.

ULTRASOUND GUIDED FINE NEEDLE ASPIRATION CYTOLOGY - EARLY EXPERIENCE WITH A NEW AND LOGICAL APPROACH

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The current accepted practice for evaluation of masses that are not simple cysts by ultrasound criteria is to refer them for a needle localized open biopsy. To evaluate our experience with ultrasound guided fine needle aspiration, we took 68 consecutive women, ranging in age from 32 to 88 (mean 50.9), who had a new mass by mammography without associated calcifications. All masses were hyperechoic, or complex, and did not meet the criteria for being a simple cyst by ultrasound. Under local anesthesia and with continuous monitoring, using a 7.5 MHz hand-held, flat linear-ray transducer, the masses were then aspirated using a 22 gauge needle. Four passes were made as the echogenic portion of the needle was visualized on the screen. If fluid was evacuated, a follow up unilateral mammography was repeated to evaluate resolution of the mass by mammography. The contents of the aspiration were subsequently evaluated using carbowax technique. 34 (50%) of the masses had either partial or complete resolution following fine needle aspiration, and 30 (57%) of the aspirations had an associated fluid component. Cytologic examination identified 2 patients (3%) with carcinoma, and subsequent diagnoses were confirmed by biopsy as infiltrating ductal and infiltrating lobular carcinomas. 4 patients were found to have atypical cells on aspiration cytology; all underwent needle directed open biopsy, with 2 patients having fibroadenomas and 2 having fibrocystic change. The remaining 62 patients had essentially negative fine needle cytologies.

We also evaluated the cost of ultrasound fine needle cytology, which in our Breast Center (including all charges) comes to $478.00 per case. The cost per case of doing the same patients, using a needle localization and segmental resection technique averages $5,377.00, again including all physician and hospital charges. This represented a total of $367,636.00 that would have been spent had each of these 68 patients undergone needle localization and biopsy vs $32,504.00, using ultrasound guided FNAC. The difference in making a diagnosis per cancer therefore, was $183,818.00 per cancer diagnosed using open biopsy techniques vs $16,252.00 per cancer using ultrasound guided FNAC, a savings of over 90%.

We conclude that ultrasound guided percutaneous aspiration is invaluable in the nonsurgical differentiation of malignant and benign masses. This technique not only reduces the number of benign breast biopsies, but assists in patient management at decreased cost and morbidity.