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3:46 PM Abstract No. 114

Prostate artery embolization: control of refractory prostate origin hematuria secondary to BPH and prostate cancer in complex vascular patients without interruption of medically necessary anticoagulation

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Purpose: Selective prostate artery embolization (PAE) has been shown to be effective for prostate origin hematuria. These patients often have multiple cardiovascular comorbidities requiring ongoing anticoagulation. There is little published data concerning the effectiveness of PAE in this subset of patients in whom anticoagulation cannot be discontinued.

Materials: Three patients underwent bilateral or unilateral PAE with 300-500 micron Embospheres over a 7 month period. All had prostate origin hematuria documented by cystoscopy and were embolized without discontinuance of anticoagulation. The 1st patient had a left ventricular assist device and BPH, he was on aspirin and Coumadin. The 2nd patient had BPH, coronary disease, and atrial fibrillation. He was on aspirin and clopidogrel and failed continuous bladder irrigation (CBI) and fulguration. The 3rd patient had prostate cancer and stroke. He was on aspirin and clopidogrel and failed CBI. Patients were followed for hematuria and complications of PAE.

Results: All patients stopped bleeding after PAE without interrupting anticoagulation. Bilateral PAE was performed in the first patient with no hematuria at 11 months. The 2nd patient underwent unilateral PAE. He represented 2 weeks later with urosepsis and DVT. He was switched to heparin with transient hematuria (5 days) attrbutable to cystitis which resolved with IV antibiotics and manual bladder irrigation. He was switched to coumadin with no further bleeding, expiring 1 month later. The 3rd patient underwent unilateral PAE and contralateral prostate artery parent vessel occlusion. He had recurrent strokes and was switched to rivaroxaban. After 3.5 months he developed brief hematuria (3 days) attributable to cystitis, it stopped after 2 days of oral antibiotics, no further bleeding at 6 weeks. No PAE complications.

Conclusions: Refractory prostate origin hematuria can be effectively managed with PAE without interruption of medically necessary anticoagulation in complex vascular patients. PAE should be contemplated as first line therapy in this often fragile subgroup of patients requiring ongoing anticoagulation. Alternative even minimally invasive therapies are often contraindicated in this population.

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3:55 PM Abstract No. 115

Comparative cost analysis of prostate artery embolization to modern surgical techniques in the treatment of symptomatic large volume benign prostatic hyperplasia

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Purpose: Prostate artery embolization (PAE) for benign prostatic hyperplasia (BPH) is gaining traction as an effective alternative to surgery in medically refractory BPH. Although there is data to suggest that it is at least as effective as surgery, a cost comparison between PAE and surgery has not been performed (1). We hypothesize that PAE is less expensive than surgery in the treatment of medically refractory BPH with prostates >90 g.

Materials: The literature on PAE for prostate size >90g was reviewed for the range and mean amount of materials consumed and room time utilized (1). A PAE procedural cost estimate was derived using the authors' institutional purchasing data for the materials used in PAE, professional fees, and room time costs. The U.S urologic literature on HoLEP and open prostatectomy was reviewed to determine the cost of the surgical alternatives, which includes OR time, professional fees, material use, and days of hospitalization (2). Cost data for PAE and surgery was compared in the cost context of academic tertiary referral centers. While there is a greater breadth of cost data in the European urologic literature it was excluded because of the inherent cost differences between the two regions would obfuscate a direct comparison between PAE and surgery. A cost comparison analysis between the IR and surgical management of BPH was performed. All cost figures were generated in U.S dollars.

Results: The estimated mean total cost of PAE is $3341.87. The U.S urologic literature indicates that the estimated mean total cost of HoLEP is $8380 and open prostatectomy $5861.78 (2, 3).

Conclusions: Prostate artery embolization for medically refractory BPH is a substantially less expensive treatment compared to the surgical alternatives for large prostates. PAE demonstrates cost savings on multiple levels including operative costs and postoperative hospitalization days. Notably, there is a paucity of U.S urologic literature on the raw costs of surgical intervention for medically refractory BPH (4). Given that the projected costs of PAE are based on a research cohort, it is feasible that further cost reductions can be achieved with increased experience as PAE becomes more widespread.

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