

## **THE INFLUENCE OF PROPHYLACTIC DEXAMETHASONE ON EDEMA FOLLOWING PROSTATE BRACHYTHERAPY**

Edema associated with prostate brachytherapy causes a prostate volume increase of 117 – 160%. This work evaluates the prophylactic administration of dexamethasone to determine its effect on post-implant edema, dosimetric quality and catheter dependency.

22 unselected patients were placed alternately into either a dexamethasone or control arm. The 11 patients in the experimental group were administered a total of 40 mg dexamethasone in a 6 day regimen. Within 2 hours following implantation, a CT scan was obtained for postoperative dosimetric evaluation of the implant. Averaging 131 seeds per patient, the implanted seeds served as accurate and redundant markers for temporal changes in prostate volume. The seed coordinates were evaluated via orthogonal films on day 0, 3, 14 and 28. The product of the standard deviations of seed positions in 3-dimensions is a volume which scales as the implanted volume and follows the course of edema.

There was no statistically significant difference in volume between the experimental and control groups on either day 0 or day 28. Accordingly, the day 0 dosimetric parameters and short term catheter dependency were equivalent in both patient groups. However, the patients receiving dexamethasone had a significantly altered pattern of edema resolution compared to those in the control arm. The dexamethasone cohort had markedly lower volume on day 3, but 9 of 11 rebounded from the anti-inflammatory to have a greater volume on day 14 than on day 3.