AbstractID: 4378 Title: A New Nomogram for Determining I-125 Prostate Seed Implant Activity

Purpose:

To reduce the number of seeds returned to the vendor after prostate implants by devising a new nomogram for predicting activity.

Method and Materials:

During 2005, we implanted 36 patients. Pre-implant volumes were determined ultrasonically by measuring the ellipsoidal diameters. The mean pre-implant volume was 35.1 cc while the implant measurement was 38.5 cc, a difference of 9.7% which correlates with the 10% volume increase used for ordering. We plotted the volumes against the activity. These data were fitted to a linear function. The function was further modified by increasing the activity in order to accommodate all of the clinical cases.

Results:

We used the new nomogram to predict the required activity first by using the pre-implant volumes, and second by using volumes with the minimum volume being 30 cc. The former predicted an excess activity of 219.7 mCi compared to the actual excess of 279.4 mCi. The difference resulted in a savings of 145 seeds (0.413 mCi/seed). The latter produced an excess of 231 mCi; 48.8 mCi (118 seeds) less than ordered.

Conclusion:

Our study of patients implanted in 2005 resulted in the generation of a new nomogram, showing a linear relationship between volume and activity. Had we used this function and the unadjusted pre-implant volumes in 2005, we would have saved 59.7 mCi, about 145 seeds.

Conflict of Interest (only if applicable):