**Purpose:** To study the relationship between SV volumes versus dose to SV, rectum and bladder during 81 Gy IMRT to prostate, either excluding SV or including SV to 45 or 81 Gy.

**Method and Materials:** SV, prostate, rectum and bladder were contoured on CT images. Proximal SV was defined as SV including 2-cuts superior to prostate. Prescription with two IMRT plans was 45 and 36-Gy to prostate+SV and to prostate, respectively, with 0.5-1 cm margins. Dose-volume constraints were to keep dose to 70%, 50% and 30% of bladder and rectum less than 30%, 50% and 70% of 81-Gy. Priority: PTV>rectum>bladder. DVH data from plans with no SV, or SV to 45 or to 81-Gy were compared for 42 patients. Linear regression and paired ‘t’ test were used for statistical analysis.

**Results:** Mean (±SD) and (range) of volumes (cc): SV: 11.7±5.14, (1.9-22.8); prostate: 53.3±24, (17.2-139); rectum: 124±24, (50-235), and bladder: 207±129, (25-561). Dose to rectum and bladder was not related to SV volumes (P>0.05). Inclusion of SV to 45-Gy increased dose to rectum and bladder up to 30% but not at 10% volume. Dose (Gy) to 30% bladder, and rectum with no SV: B-27.8±16.8, R-40.4±6.7; SV to 45-Gy: B-35.6±14.2, R-44±5.2; and SV to 81-Gy: B-42.4±14.7, R-48.9±5.5, respectively. **Excluding SV spared bladder (53%) more than rectum (21%) at 30% volume (P<0.001).** Mean dose to SV to 45-Gy: entire SV - 68.3±6 (57.4-79.4) and proximal SV - 74.5±2.5 (66.8-79.4). For small SV volumes, dose to bladder and rectum was same with SV to 45 or 81-Gy.

**Conclusions:** Margins, priority and inverse-optimization might be reasons for sparing bladder more than rectum with SV exclusion during IMRT. Single plan to 81-Gy for small SV cases would reduce planning and QA time to half. These results suggest reevaluation of reasons for inclusion/exclusion of SV during IMRT.