**Purpose/Objective(s):**
To determine if the use of fiducial markers are superior in accuracy, precision and compared to the SBRT frame set-up procedure that was developed at our institution in 1991.

**Materials/Methods:**
Twenty patients with abdominal tumors underwent SBRT according to our routine methods with the Elekta body frame. The fine needle marker, Gold Anchor, is implanted in the tumors percutaneously, without the need of anesthesia before treatment planning using ultrasound or CT-guidance. Patients were accurately positioned in the treatment room by using the X, Y, Z coordinates on the frame according to the dose plan protocols. A CBCT was then performed to verify the location of the Gold Anchor in relation to the set point in the treatment plan.

**Results:**
The average interfraction tumor deviation in X, Y and Z for all patients with 94 fractions with the frame position to the fiducial marker were measured. The sum-vector represents the true deviation and is larger than the separate coordinates X, Y and Z. In the same sequence one fraction showed a deviation of 4 mm, 6 mm and 5 mm. The sum-vector is then 8.8 mm. Maximum deviation of the sum-vector in this study was 17.5 mm as shown in the graph.

**Conclusions:**
Positioning of the target with orthogonal images or CBCT with the Gold Anchor fiducial marker insertion is intuitive and easily accomplished for safe positioning. Excellent accuracy and precision can be achieved without the need of positioning patients in stereotactic whole body frames.

The total cost of treatments with the Gold Anchor technique is less than with the use of the stereotactic coordinate set up due to less time needed in the treatment room and for preparations. However, a fixation system may be essential to minimize body movements during treatment.

**Author Disclosure:**
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