Hydrogel Spacer Injections for Prostate Cancer Patients Undergoing Proton Beam Therapy

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Various studies have evaluated the efficacy of hydrogel spacer in prostate cancer treatment and have demonstrated that hydrogel spacer is useful and safe. Meanwhile, various anesthetic techniques are used for its injection, and the related pain, regarded as an associated problem, has not been studied in detail.

Methods: This survey was conducted on 200 prostate cancer patients who received hydrogel spacer injections. After local anesthesia was applied to the perineum (20 mL of 1% lidocaine), a gold marker each was placed with a 22-gauge needle via the transperineal approach. Then, the fat between the prostate and rectum was punctured with an 18-gauge needle, and hydrodissection was performed using physiological saline; this was followed by an injection of 10 mL of hydrogel spacer composed of polyethylene glycol. Immediately after completion of the procedure, the degree of the pain severity was rated on pain scales and recorded by the patients themselves. The numerical pain scale (0-10) was used to assess pain severity (Fig.1).

Results: Hydrogel spacer injections were successfully administered to all 200 patients. The median and mean pain scores were 5 and 5.2. At completion of the procedure, hypotension due to vagal reflex was observed in 10 patients. In all these patients, blood pressure recovered after only a few minutes of rest.

Conclusion: Although hydrogel spacer injection before proton beam therapy for prostate cancer is a safe procedure, it often causes moderate pain that lasts for a short period of time.

MR sagittal view after spacer injection has more than 10 mm of space at any of apex, center and bottom levels

1. Insert with 18G-needle
2. Hydrodissection
3. Space OAR

Fig.1 Pain score sheet

Fig.2 Pain score distribution

The distribution has two peaks