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**Introduction & Objectives:** Spacer materials like transperineal applicated balloons or gel systems are used to protect anterior rectal wall during external beam radiation of prostate cancer. We report on our personal findings with these techniques.

**Materials & Methods:** Between 12/2014 and 1/2019 we implanted 130 spacer materials

	Goldmarker only	BALLON + GM	GEL + GM
2014	1	3	-
2015	4	22	-
2016	7	25	-
2017	8	14	30
2018	8	12	26
2019	-	-	7
	28	75	63

All implantations were performed by one urologist under general anaesthesia. 4 Goldmarkers (GM) were transrectal implanted in all patients. Thereafter, a spacer material (BioProtect Balloon system or Space OAR Gel) was implanted transperineally under sonographic control. All patients received a digital rectal exam after the procedure, in 5 patients we performed rectoscopy due to unclear finding. In all patients localisation of the balloon / gel was routinely checked at planning CT prior to radiation.

**Results:** We had no intraoperative surgical complications, particular no rectal wall perforation was noted. In 7.5% (10/75) spacer balloons we experience fluid loss during intraoperative detachment, this was due to a mechanical balloon failure. In 2 cases we were not able to re-implant a new balloon at the same setting. In 3.8% (3/78) we were unable to place a balloon due to excessive scare formation. In 1.6% (1/63) hydrogel injection was difficult to monitor at ultrasonography, maybe due to air contamination during application. Overall, balloons were much more difficult to apply as compared to hydrogel. Postoperatively, no local infections or erosion occurred. There was no migration of either balloons or the hydrogel during FU. The maximum distance achieve was a mean 3mm (range 1-5) higher with the balloons as compared to hydrogel. This however, was not associated with any increased symptoms related to radiation at short term. As for the spacer balloon 33% (25/75) reported on perineal pain (VAS 4.1 range 3-5), 27% (29/75) had minor to moderate foreign body sensation, 4% (3/75) wound haematoma without the need for any intervention. In hydrogel pats 15.4% (10/63) reported on mild foreign body sensations, no other disturbances were reported.

**Conclusions:** Results obtained suggest, that application of the spacer materials used is safe but balloons are more difficult to apply properly. However, the maximum distance achieved with the balloon is higher, which might have a positive effect in the long – term follow up, but not for

the immediate phase. Gel is more difficult to see at CT scan for radiation planning but gel seems to better cover the entire region which should be protected. In addition, the gel is less mobile and remains more reproducible at the site. Therefore, we nowadays prefer the gel system.