



# Partial Gland Ablation of Prostate Cancer: Effects of Repeat Treatment

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## BACKGROUND

Partial gland ablation (PGA) is not uniformly successful. Failure, defined as persistence of clinically significant prostate cancer (csPCa) on follow-up biopsies, occurs in 20-30% or more of cases. Repeat PGA is common in large series, but few studies have addressed in detail the effects of secondary PGA.

Functional and short-term oncologic outcomes after secondary PGA has not been well described and would be useful for those considering repeat PGA.

## OBJECTIVES

- To describe near-term adverse events and changes in urinary and sexual function after primary and secondary PGA.
- To describe near-term oncological outcomes, including ablation success rates

## STUDY DESIGN

Subjects were all 30 men who underwent an initial PGA and, because of persistent csPCa on per-protocol biopsy at six months, a second PGA. The 30 men were part of a group of 170 men with GG2 or GG3 lesions undergoing PGA in prospective clinical trials: 120 receiving cryotherapy (NCT03503643) and 50 HIFU (NCT03620786). Repeat biopsies were all performed at UCLA between 2017-2021.

Six months after the primary ablation, 37/170 (22%) had persistent ipsilateral csPCa within or near the ablation zone; 30 with GG2 or GG3 then received a second PGA (24 CRYO, 6 HIFU), 27 with the same modality as initial PGA. None of the 30 received other prostate treatments, including androgen deprivation and radiation therapy, before or during the study.

At three timepoints (baseline and six months after first and second ablations) quality-of-life (QOL) questionnaires (IIEF, IPSS) and MRI-guided biopsies (MRGB) were performed. Biopsies were targeted and systematic at baseline and in follow-up, comprehensively about the ablation zone.

## RESULTS

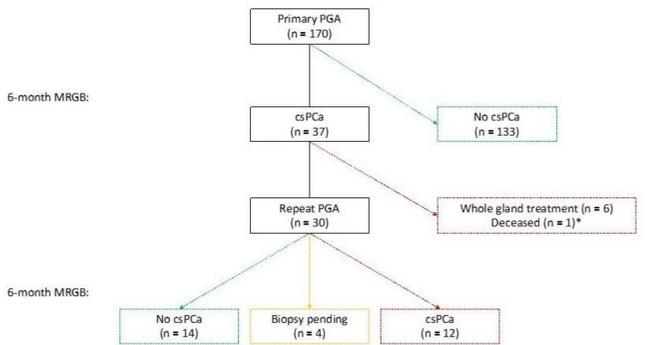


Figure 1: Flow diagram.

Table 1: Baseline clinical characteristics.

	Cryotherapy (n=24)	HIFU (n=6)	Combined (n=30)
Age (years), mean ± SD	68.9 ± 7.4	71.3 ± 6.5	69.4 ± 7.2
Ethnicity, n (%)			
White	21 (87.5)	6 (100)	27
Non-White	3 (12.5)	0 (0.0)	3
Year of Repeat PGA, n (%)			
2017	1 (4.2)	0 (0.0)	1 (3.3)
2018	2 (8.3)	0 (0.0)	2 (6.7)
2019	5 (20.8)	3 (50.0)	8 (26.7)
2020	8 (33.3)	2 (33.3)	10 (33.3)
2021	8 (33.3)	1 (16.7)	9 (30)
Interval between 1 <sup>st</sup> and 2 <sup>nd</sup> PGA (months), mean ± SD	13.8 ± 8.7	9.2 ± 1.3	12.9 ± 8.0
Tumor location, n (%)			
Anterior*	8 (33.3)	2 (33.3)	10 (33.3)
Posterior	16 (66.7)	4 (66.7)	20 (66.7)
Prostate Volume (cc), mean ± SD	39.3 ± 12.8	32.1 ± 5.1	37.8 ± 11.9
ROI diameter (mm), mean ± SD	16.9 ± 6.4	20.0 ± 8.4	17.5 ± 6.8
Grade Group, n (%)			
GG2	18 (75.0)	4 (66.7)	22 (73.3)
GG3	6 (25.0)	2 (33.3)	8 (26.7)

Table 2: Outcomes of PGA.

Functional Outcomes*	Baseline (n = 29)	After 1 <sup>st</sup> ablation (n = 29)	After 2 <sup>nd</sup> ablation (n = 29)	p-value
IPSS (global), mean ± SD	9.1 ± 7.3	6.8 ± 5.5	7.7 ± 7.2	0.4304
IPSS (bother), mean ± SD	1.1 ± 1.6	0.6 ± 0.9	0.7 ± 0.9	0.2242
IIEF, mean ± SD	17.4 ± 8.2	13.9 ± 7.3	12.3 ± 8.5	0.0683
Decisional regret analysis Would choose PGA again, n (%)	---	---	27 (93)	---
Oncologic Outcomes*	Baseline (n = 30)	After 1 <sup>st</sup> Ablation (n = 30)	After 2 <sup>nd</sup> Ablation (n = 26)	p-value
GG, n (%)				
Negative	0 (0.0)	0 (0.0)	14 (53.8)	<0.0001
GG2	22 (73.3)	23 (76.7)	6 (23.1)	
GG3	8 (26.7)	7 (23.3)	4 (15.4)	
GG4	0 (0.0)	0 (0.0)	1 (3.8)	
GG5	0 (0.0)	0 (0.0)	1 (3.8)	
MCCL (mm), median (IQR)	8.0 (6.0, 11.0)	5.0 (3.0, 7.0)	2.0 (1.0, 4.0)	<0.0001
PSA (ng/mL), median (IQR)	7.0 (5.2-10.4)	2.9 (2.0-4.6)	1.9 (0.7-3.6)	<0.0001
Prostate Volume (cc), median (IQR)	35.0 (29.0-43.7)	32.6 (23.0-36.2)	28.0 (21.9-34.3)	0.0156
PSAD (ng/mL/cc), median (IQR)	0.15 (0.11-0.19)	0.11 (0.06-0.18)	0.06 (0.02-0.12)	0.0049
PI-RADS v2 Grade, n (%)				
0-2	0 (0.0)	22 (73.3)	20 (76.0)	<0.0001
3	2 (6.7)	0 (0.0)	0 (0.0)	
4	10 (33.3)	3 (10.0)	3 (12.0)	
5	18 (60.0)	5 (16.7)	3 (12.0)	

\*Functional and oncologic outcomes were reported at baseline and six months after each treatment.

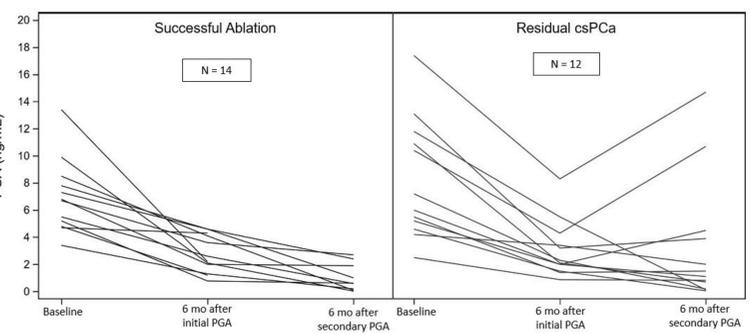


Figure 2: PSA levels at baseline and after PGA.

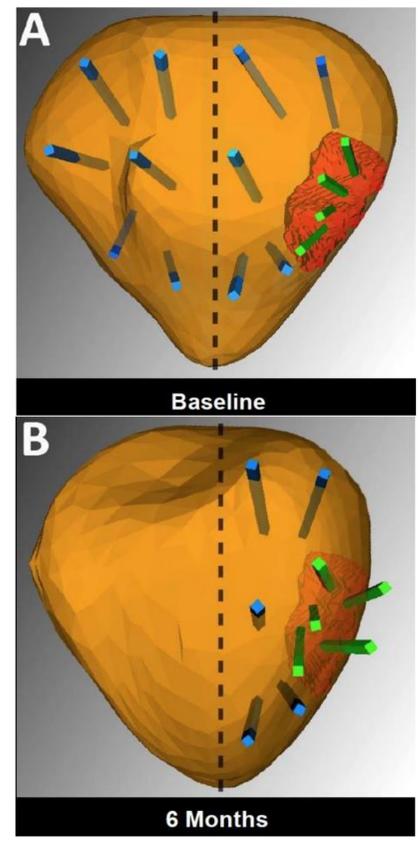


Figure 3: Biopsy schema at baseline and after PGA

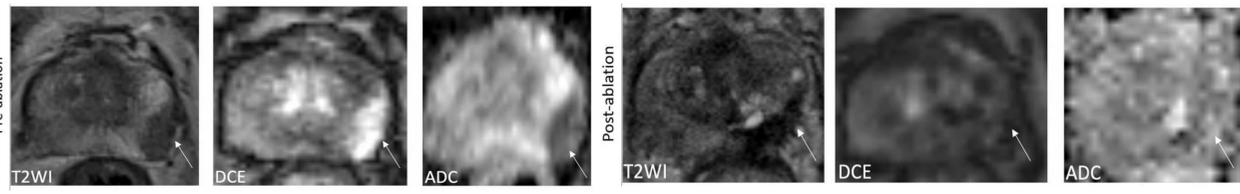


Figure 4: Example MRI study.

## PRINCIPAL FINDINGS

- Mean functional outcome scores (IPSS, IIEF-5) were not significantly different from baseline after the first or second PGA. A decrease in semen volume was reported by 25% of patients.
- No operative complications were encountered.
- 'Decisional regret' was reported in only 2/29 men after the repeat ablation.
- Repeat ablation was successful (absence of csPCa on MRGB) in 14/26 (53%) of men.
- PSA levels decreased and MRI lesions resolved after ablations, but neither was a reliable predictor of biopsy outcomes.

## CONCLUSION

When initial PGA fails, repeat PGA is a reasonable consideration.

In near-term follow-up, secondary procedures appear to be safe, causing only minimal detriment to urinary and sexual function.

csPCa was undetectable by MRGB in approximately half the patients undergoing secondary PGA. PSA and MRI were not reliable predictors of oncologic outcome.

**Patients who fail primary PGA may be candidates for repeat treatment. They should be informed that secondary PGA appears to be safe and does not have appear to have an impact on urinary or sexual function other than potential for decreased ejaculatory volume. Short-term oncologic efficacy approximates 50%.**

## FUTURE DIRECTIONS

Next steps include further studies on why some patients fail focal therapy while others do not.