



Impact of Partial Nephrectomy and Percutaneous Cryoablation on Health-related Quality of Life Two Years After Treatment – A prospective Comparative Cohort Study

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Background

Partial nephrectomy (PN) is the gold standard for treating stage cT1 renal cell carcinoma (RCC). However, alternative minimally invasive treatment options, such as percutaneous cryoablation (PCA), have been proposed to minimize the adverse effects on patients' health-related quality of life (HRQoL). Therefore, this study aimed to evaluate and compare the HRQoL of patients treated with PN or PCA for stage cT1 RCC two years after treatment.

Methods

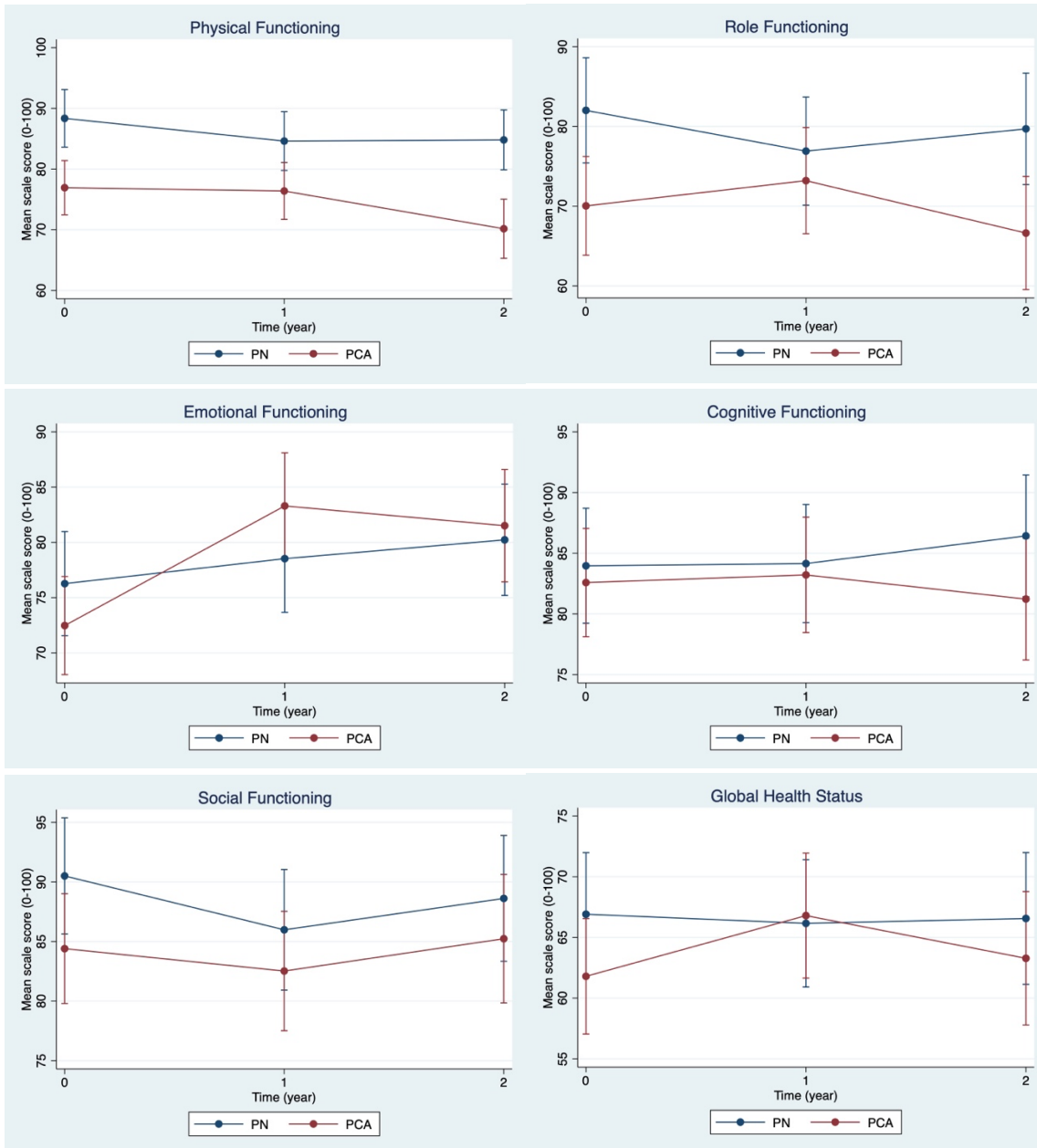
Patients treated with PN or PCA for RCC stage cT1 between 2019 and 2021 at two university hospitals in Denmark were offered inclusion. Exclusion criteria: insufficient understanding of the Danish language, cognitive deterioration, conversion to nephrectomy, or salvage procedures. The EORCT QLQ C30 questionnaire was distributed at baseline (before surgery), and one and two years postoperatively. A linear mixed-effect model was applied to detect any changes from baseline to follow-up and/or between the groups.

Results

The cohort included 168 patients (PN: 79; PCA: 89). The response rate was 100% at baseline and 88% and 74% after one and two years, respectively. Patients receiving PCA were significantly older (median 69.0 vs. 62.1 years), had a significantly higher score on the Charlson Comorbidity index (3 vs. 2), and were treated for significantly smaller tumors (3.06 vs. 3.75 cm) compared to PN. Patients treated with PCA had lower baseline scores on physical ($p=0.001$) and role ($p=0.009$) compared to PN. A significant difference from baseline to one-year follow-up was found for emotional

functioning ($p=0.006$) with the only HRQoL scale favoring PCA over PN. No significant changes from baseline to two-year follow-up were found for any HRQoL scales.

Figure 1: HRQoL scales from baseline up to 2 years postoperatively following partial nephrectomy (PN) and percutaneous cryoablation (PCA)



Conclusions

This study found significant differences between baseline HRQoL between patients treated with PCA and PN. However, no significant differences were observed in any HRQoL scales from baseline to two-year follow-up between the treatment groups.