

The value of computer-aided ultrasonography in the detection and evaluation of prostate cancer.



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Introduction & objectives

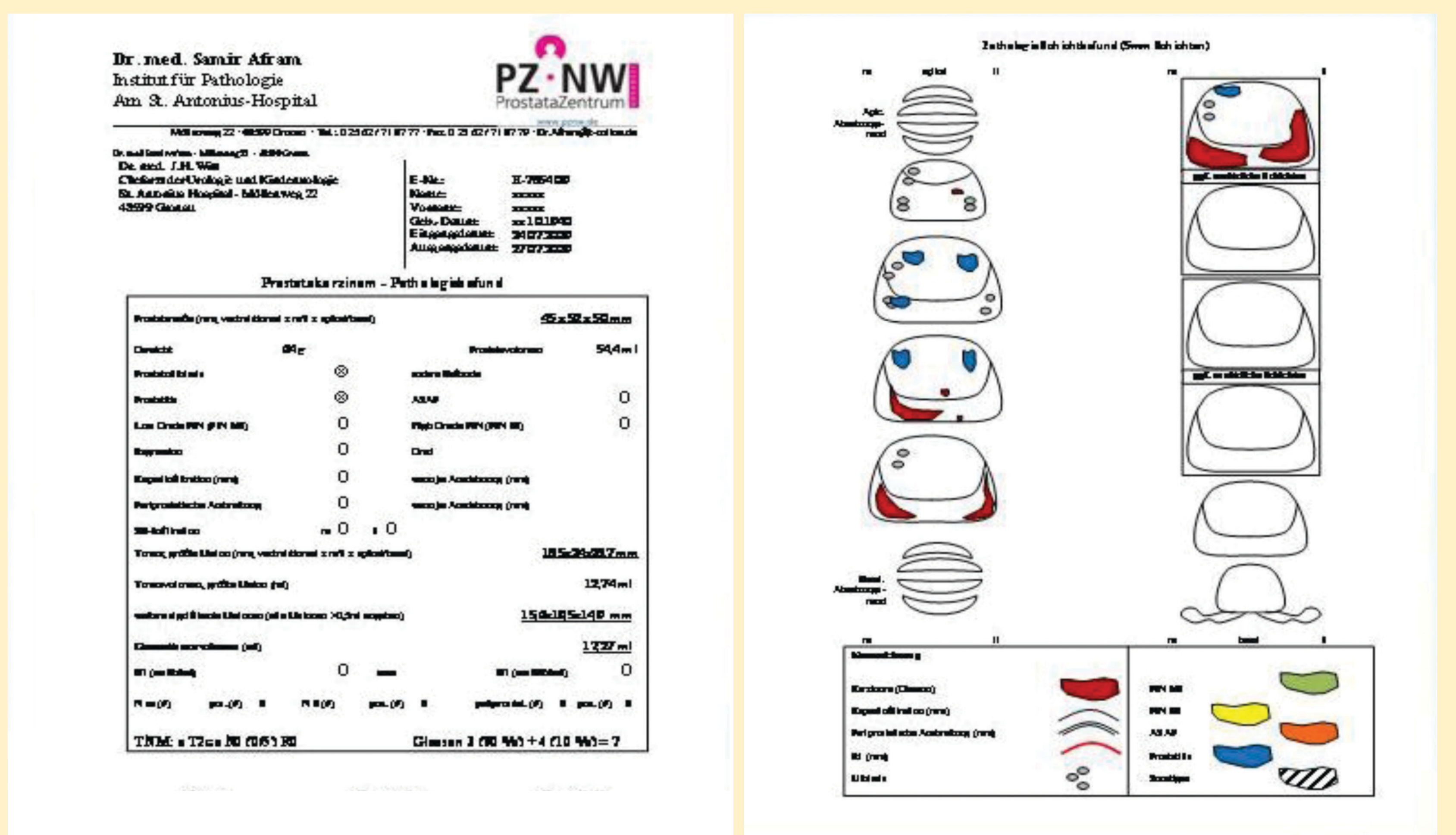
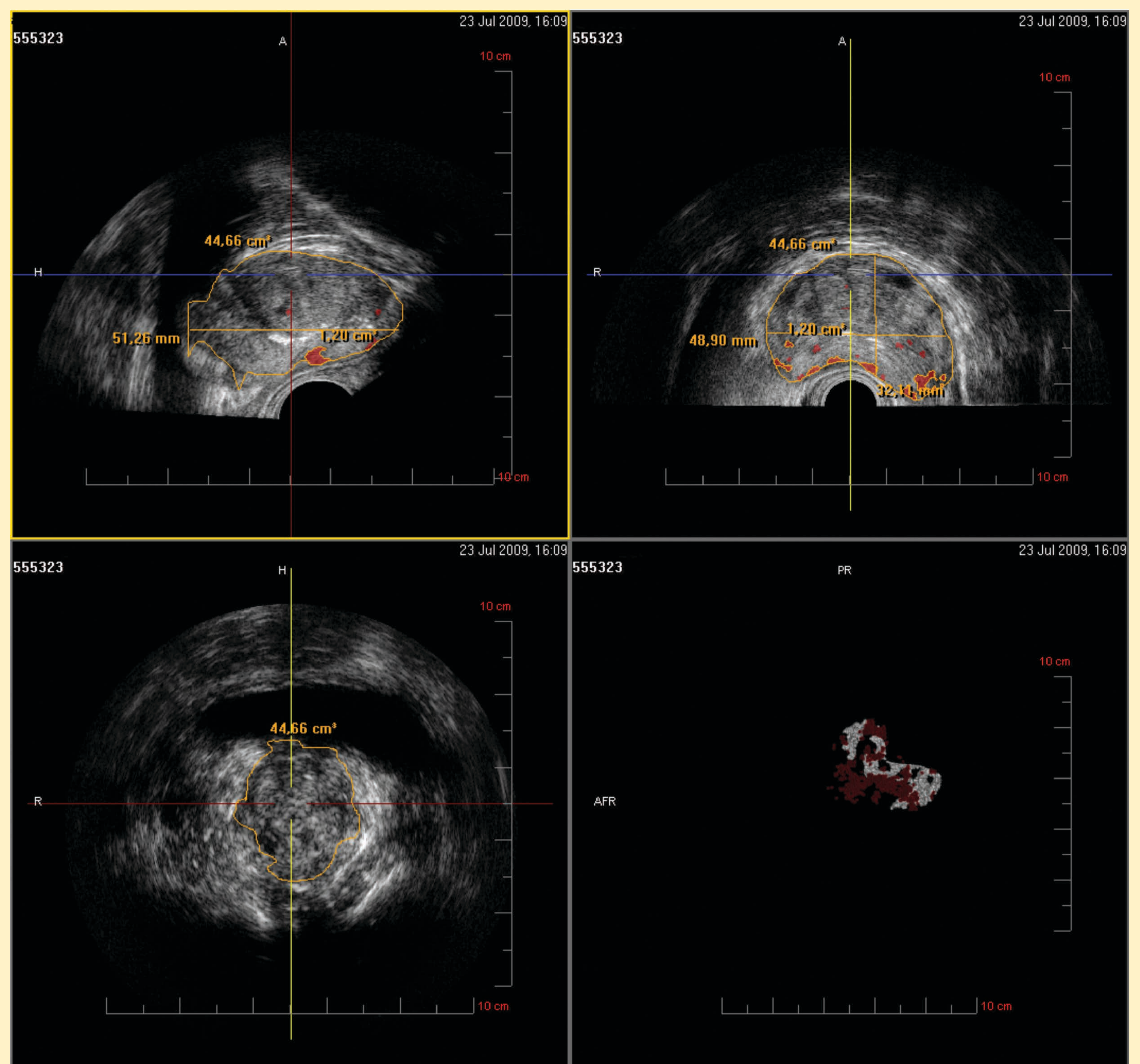
The objective of this study was to assess the value of computer-aided ultrasonography (HistoScanning™) in the detection of prostate cancer (PCa) by comparing images with step-sectioned robot-assisted laparoscopic radical prostatectomy (RALP) specimens.

Material & Methods

- A prospective review of N=85 patient records with a histological confirmation of PCa who underwent RALP between October 2009 and October 2010 at a tertiary academic center was conducted.
- All patients underwent prostate HistoScanning prior to their scheduled RALP.
- A three-dimensional raw (RF) data set required for HistoScanning analysis were acquired by transrectal ultrasonography, and analysed using organ-specific tissue-characterization algorithms which form the core of the HistoScanning technology.
- The HistoScanning™ analysis results were compared with the histology of the whole-mounted prostate, step-sectioned sagittally at 5-mm intervals, and each slide analysed by 5 x 5 mm grid analysis to predict tumour localisation and volume.

Results

- The median age of the patients was 65.2 years old (43-76) and median PSA value 7.4 ng/ml (1,1-15,6 ng/ml).
- The positive predictive PCa rate was 80%. An exact correlation of tumour localisation was noted in 77.6% of patients.
- An exact correlation of tumour volume was noted in 71.2% of patients.



Conclusion

Computer-aided ultrasonography appears to be promising in the detection and evaluation of PCa. Although these results are encouraging, further studies are warranted to assess the impact of these results on clinical practice.

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