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# Factors associated with positive surgical margins among Chinese men undergoing robot-assisted radical prostatectomy

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## Introduction

Robot-assisted radical prostatectomy (RARP) has been increasingly adopted since the introduction of da Vinci Surgical System back in 2001. This technology incorporate the minimally-invasive advantage of laparoscopic radical prostatectomy with 3D vision, greater degree of freedom of motions and improved surgeon ergonomics. These have shown to improve patient outcomes with regards to blood loss, transfusion rate and functional outcomes.<sup>1</sup> Despite advancement in surgical techniques and methodologies, positive surgical margin after RARP is not uncommon and it is associated with biochemical recurrence.<sup>2</sup>

This study aims to review the factors associated with positive surgical margin in men who underwent robot assisted radical prostatectomy for localised prostate cancer.

## Patients & Methods

This is a retrospective cohort analysis reviewing all patients with localised prostate cancer who underwent robot assisted radical prostatectomy from 09/2011 to 06/2023 by our centre's surgeons. The patient's clinical, biochemical and pathological parameters were reviewed via the electronic patient record system. Positive surgical margin (PSM) was defined as the presence of cancer at the inked surface of the specimen.

## Results

210 patients with localised prostate cancer who underwent robot assisted prostatectomy were identified and reviewed. The overall PSM rate was 119/210 (56.2%). The PSM rate for pT2 & pT3 disease were 38.5% (47/122) and 80.7% (71/88) respectively. The most common site of PSM was apex 82/118 (68.6%). In univariate analysis the overall PSM was associated with serum PSA level, preoperative prostate size, PSA density, percentage of positive cores & ISUP grading in prostate biopsy and pathological staging on histopathology of prostatectomy specimen.

N= 210	Margins involved (n =119)	Margins not involved (n = 91)	p
Mean age	67.6	66.6	0.084
Mean PSA	15.2	11.3	0.001
Prostate size	41.2	59.6	< 0.001
PSA density	0.41	0.24	< 0.001
Percentage of positive core in biopsy	42.9	29.5	< 0.001
Pathological stage			
T2 stage	47	75	<0.001
T3 stage	71	18	
ISUP grading in biopsy			0.025
GG1	42	54	
GG2	29	22	
GG3	19	12	
GG4	20	2	
GG5	9	1	

## Conclusion

The apical margin was the most common location of positive surgical margin among Chinese patients undergoing robot assisted radical prostatectomy. Serum PSA level, preoperative prostate size, PSA density, percentage of positive core & ISUP grading in prostate biopsy and pathological staging on histopathology of prostatectomy specimen are found to be associated with positive surgical margin in robot-assisted radical prostatectomy for localised prostate cancer.

## Reference

1. Chau, H. L et al. (2022). Radical prostatectomy for prostate cancer: Hong Kong status in the era of Surgical Outcomes Monitoring and improvement programme. *Surgical Practice*, 26(2), 108–114.
2. Sooriakumaran P, Dev HS, Skarecky D (2016) The importance of surgical margins in prostate cancer. *J Surg Oncol* 113(3):310–315.