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Impact of surgical wait times during summer months on the oncological outcomes following robotic-assisted radical prostatectomy: 10 years' experience from a large Canadian academic center

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INTRODUCTION

- Evidence shows that wait times before cancer surgery have been increasing, and that it can negatively affect outcomes.
- Compared to the other seasons of the year, most Canadian hospitals face significant reductions (30-50%) in operative room access during summer months.
- This reduction leads to increased pre-operative wait times and subsequent surgical delays.

OBJECTIVES

- To characterize surgical wait times in patients undergoing robotic-assisted radical prostatectomy (RARP) in a large academic center.
- To evaluate the impact of extra-wait times during summer months on the post-operative oncological outcomes.

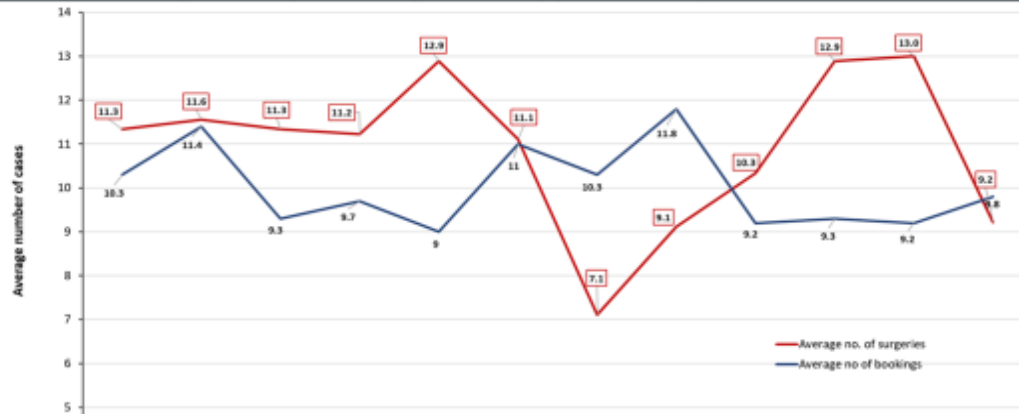
Time characteristics for biopsy, request and surgery

Month of request	Total number of requests (%)	Total number of surgeries (%)	Average time Req-Sx, days (SD)	Average time Bx-Sx, days (SD)
Overall	1057	1057	76.3 ± 49.8	168.9 ± 105.5
January	93 (8.8%)	91 (8.6%)	57.7 ± 30.5	158.0 ± 87.2
February	98 (9.3%)	94 (8.9%)	70.3 ± 42.3	164.6 ± 99.7
March	84 (7.9%)	93 (8.8%)	78.4 ± 52.1	183.5 ± 125.3
April	88 (8.3%)	92 (8.7%)	78.6 ± 59.3	167.6 ± 94.8
May	80 (7.6%)	102 (9.6%)	84.4 ± 54.1	158.9 ± 81.8
June	88 (8.3%)	86 (8.1%)	93.0 ± 69.0	188.1 ± 152.1
July	93 (8.8%)	59 (5.6%)	79.6 ± 55.6	165.0 ± 85.6
August	107 (10.1%)	73 (6.9%)	86.2 ± 54.1	179.5 ± 96.5
September	82 (7.8%)	79 (7.5%)	67.6 ± 38.1	150.3 ± 91.9
October	72 (6.8%)	107 (10.1%)	67.6 ± 39.1	175.1 ± 144.5
November	83 (7.9%)	110 (10.4%)	67.0 ± 34.4	158.1 ± 97.2
December	89 (8.4%)	71 (6.7%)	82.8 ± 43.5	176.5 ± 91.8
p-value			<0.001	0.387

Characteristics of the study population

Cohort:	
- Number of patients:	1057
Age:	
- years: mean, SD	60.9 ± 6.5
Pre-operative criteria:	
- PSA: (ng/ml) mean, SD	6.8 ± 3.6
- Clinical Stage: no, %	
cT1c:	812 (76.8%)
cT2a:	173 (16.4%)
cT2b:	52 (4.9%)
cT2c:	11 (1.0%)
cT3a:	6 (0.6%)
cT3b:	3 (0.3%)
- Gleason Score: no, %	
G6:	265 (25.1%)
G7(3+4):	515 (48.7%)
G7(4+3):	170 (16.1%)
G8:	84 (7.9%)
G9:	23 (2.2%)
- USCF-CAPRA Risk: no, %	
Low:	381 (36.0%)
Intermediate:	567 (53.6%)
High:	109 (10.3%)
- Active Surveillance: no, %	196 (18.5%)
Post-operative criteria:	
- Pathological Stage: no, %	
pT2a:	69 (6.6%)
pT2b:	44 (4.2%)
pT2c:	531 (50.5%)
pT3a:	339 (32.2%)
pT3b:	69 (6.6%)
- Gleason Score: no, %	
G6:	142 (13.5%)
G7(3+4):	632 (59.9%)
G7(4+3):	171 (16.3%)
G8:	61 (5.8%)
G9:	49 (4.6%)
- Gleason score upgrading: no, %	293 (27.8%)
- Pathological specimen findings: no, %	
+Ve Extracapsular extension:	401 (37.9%)
+Ve Seminal vesicle invasion:	68 (6.4%)
+Ve Surgical margins:	227 (21.5%)
+Ve Lymph node invasion:	21 (2.0%)
- CAPRA-S Risk: no, %	
Low:	540 (51.1%)
Intermediate:	407 (38.5%)
High:	110 (10.4%)
- Biochemical recurrence: no, %	122 (11.7%)
CAPRA score difference: no, %	
- Downstaging:	593 (56.1%)
- Neutral:	214 (20.2%)
- Upstaging:	250 (23.7%)

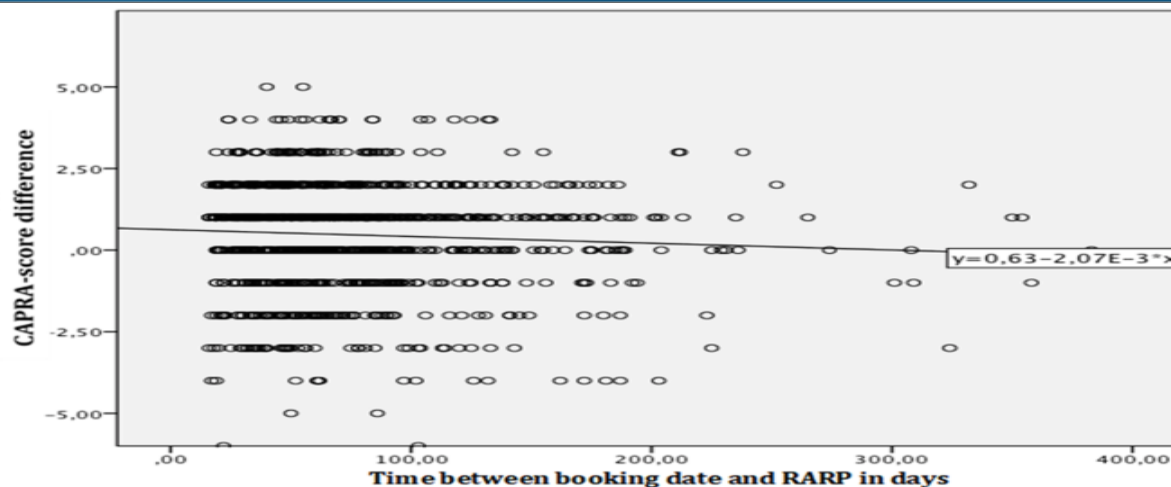
Average numbers of surgeries and bookings per months (Over study period)



	January	February	March	April	May	June	July	August	September	October	November	December
Average no. of surgeries (SD)	11.3 (2.7)	11.6 (3.4)	11.3 (3)	11.2 (309)	12.9 (2.5)	11.1 (2.8)	7.1 (1.8)	9.1 (4.4)	10.3 (2.7)	12.9 (3.9)	13 (2.7)	9.2 (1.4)
Average no of bookings (SD)	10.3 (4.9)	11.4 (4.8)	9.3 (4.4)	9.7 (2.8)	9 (1.4)	11 (4.1)	10.3 (2.3)	11.8 (5)	9.2 (4.6)	9.3 (3.5)	9.2 (3.7)	9.8 (3.7)
Mean days from booking to RARP (SD)	57.7(30.5)	70.3 (42.3)	78.4 (52.1)	78.6 (59.3)	84.4 (54.1)	93 (69)	79.6 (55.6)	86.2 (54.1)	67.6 (38.1)	67.6 (39.1)	67 (34.4)	82.2 (43.5)
Mean days from biopsy to RARP (SD)	158 (87.2)	164(99.7)	183.5(125.3)	167.6(94.8)	158.9 (81.8)	188.1 (152)	165 (85.6)	179.5(96.5)	150.3 (92)	175 (144.5)	158.1(97.2)	176.5 (92.8)

Months over whole study period

Scatterplot and Pearson correlation for the relation between CAPRA score difference and time between surgical booking date and RARP date ($r=-0.062$; $p=0.044$)



CONCLUSION

- Our cohort results demonstrate that conventional RARP wait times are significantly and consistently prolonged during summer months over the past 10 years, with worse post-RARP oncological outcomes in terms of CAPRA score.
- Further multi-specialty and large-scale national studies are required to address these delays in other oncological populations.
- Furthermore, other compensatory mechanisms to sustain consistent yearly operative output should be considered.