Does Advanced Reconstruction of Vesicourethral Support affect de novo OAB occurrence after robot-assisted radical prostatectomy?

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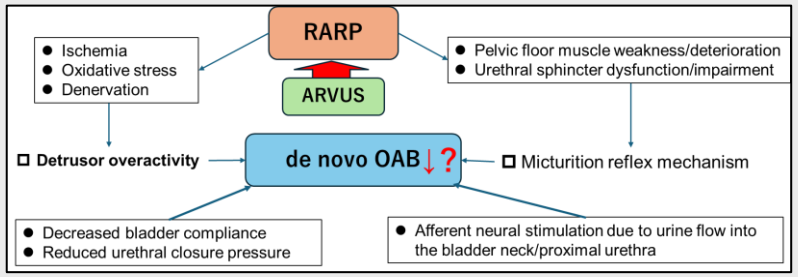
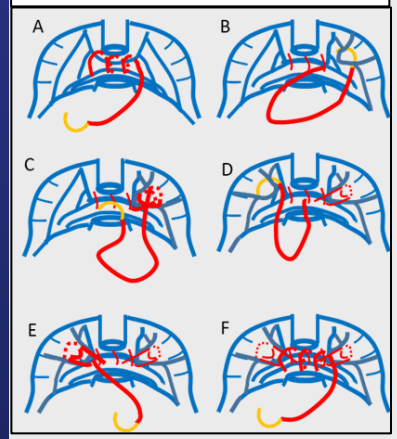
Background

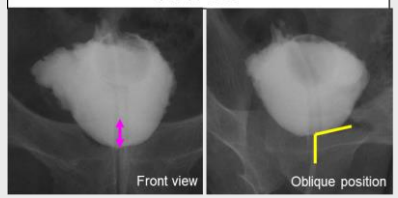
De novo OAB following radical prostatectomy is considered to have multiple causative factors. We hypothesized that ARVUS would sharpen the posterior urethrovesical angle, reducing urine outflow to the urethra and suppressing detrusor overactivity



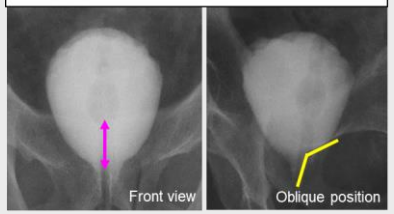
ARVUS procedure method



ARVUS



Non–ARVUS

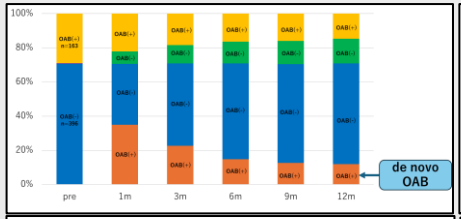


Methods

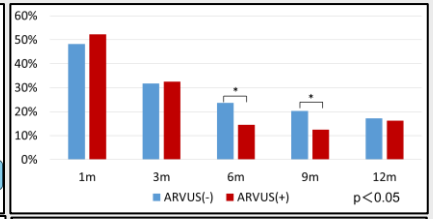
From 2010 to 2023, 799 patients underwent RARP at our institution. After excluding patients, 559 cases were analyzed. OAB was diagnosed when OABSS question 3 scored ≥2 points and total score was ≥3 points. De novo OAB was defined as the occurrence of OAB postoperatively in patients without preoperative OAB.

Results

When comparing de novo OAB rates by groups, the ARVUS group was significantly lower at 6 and 9 months postoperatively. Multivariate analysis showed that nerve-sparing approach and preoperative urethral length were significant factors associated with de novo OAB development at 1 and 3 months postoperatively. At 6 months postoperatively, the posterior urethrovesical angle was a significant factor. Regarding urinary incontinence, the ARVUS group was also significantly lower at 6-12 months postoperatively.



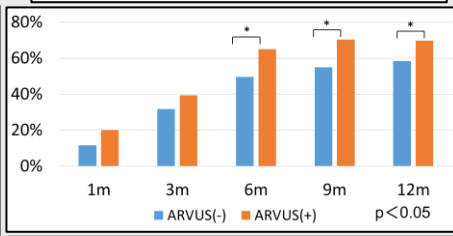
Changes in OAB after RARP



Differences in de novo OAB rates with ARVUS

Factor		Univariate P-value	Multivariate OR	Multivariate 95%CI	Multivariate P-value
Age (years)	< 68 vs ≥ 68	0.483			
Prostate Volume (mL)	< 40 vs ≥ 40	0.542			
BMI (kg/m²)	< 23.6 vs ≥ 23.6	0.497			
Clinical Stage (cT)	≦cT2 vs ≧cT3	0.220			0.426
DM	(-) vs (+)	0.258			0.217
HL	(-) vs (+)	0.253			0.455
Pre IPSS	≦7 vs ≧8	0.781			
Membranous urethral length (mm)	< 11.9 vs ≥ 11.9	0.800			
Levator thickness (mm)	< 11.5 vs ≥ 11.5	0.212			0.518
Distance from the upper margin of the pubis to the neck of the bladder (mm)	< 12.9 vs ≥ 12.9	0.943			
Posterior urethrovesical angles (degree)	< 136 vs ≥ 136	0.017	2.266	1.145-4.486	0.019
ARVUS	(-) vs (+)	0.042			0.732
Hood technic	(-) vs (+)	0.760			
Nerve sparing	Bilateral or Unilateral vs Non-nerve	0.977			

Factors Predicting de novo OAB at 6 month postoperatively



Urinary continence rates ARVUS vs no ARVUS (non-NS only n=257)

Implications

The results suggested that nerve preservation and preoperative urethral length may influence the development of de novo OAB at 1 and 3 months postoperatively. ARVUS may be involved in the suppression of urinary incontinence and de novo OAB.