865

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A RETROSPECTIVE COHORT STUDY COMPARING SURGICAL OUTCOME OF MINIARC SLING WITH AND WITHOUT CONCOMITANT PELVIC ORGAN PROLAPSE REPAIR

Hypothesis / aims of study

To compare the short-term outcomes of the MiniArc® Single-Incision Sling (American Medical Systems, Minnetonka, MN, USA) procedure for stress urinary incontinence (SUI) performed with and without concomitant pelvic organ prolapse (POP) repair.

Study design, materials and methods

We conducted a comparative cohort study between both groups. Group I consisted of subjects who underwent a MiniArc® sling procedure alone for the treatment of SUI and Group II are subjects who underwent sling placement concomitantly with POP repair. Subjects who had surgery between January 2009 and December 2010 were included. "Cure" was defined as subjects who denied SUI at follow up and have a negative cough test. The primary outcome was cure rates of SUI after sling placement. Secondary outcomes were post operative urinary retention, sling revision rates, sling "pull down" (done in office) rates and complications. Statistical analysis was performed using SPSS 18; chi-square tests, and independent t-test were used as appropriate.

Results

Analysis included 206 patients (45 in Group I and 161 in Group II). There were no differences in age, parity, BMI and hormonal replacement therapy. Fifty one percent (23/45) of Group I were menopausal versus 73 % (117/161) of Group II (p=0.01). The mean follow up was longer in Group I compared to Group II (34 weeks versus 24 weeks, p=0.04). Pre-operative urodynamic studies showed a mean pre-operative post void residuals(PVR) of 60 ml in Group I and 59 ml in Group II (p= 0.94). The mean maximum urethral closure pressure were 62 cm H2O in Group I and 66 cm H2O in Group II (p=0.44). Abdominal/Valsalva leak point pressures were similar between both groups (86 cmH2O versus 82 cm H2O, p=0.67). While detrusor pressure at maximum flow did not differ on pressure flow studies (p= 0.74), the maximum flow rate was lower in Group I compared to Group II (23 ml/sec versus 19 ml/sec, p= 0.03). Cure rates of SUI were similar in both groups, 82 % (37/45) in Group I and 91 % (147/161) in Group II (p=0.10). The length of post operative urinary retention (subjects required catheterization secondary to an unsuccessful voiding trial after surgery) was significantly shorter in Group I (Mean 0.67 ±1.72 days) compared to Group II (Mean 2.09 ± 3.24 days) (p=0.01).The mean PVR at 6 weeks after surgery was similar, 58 ml in Group I and 50 ml in Group II (p= 0.33). There was no difference in sling revision rates, which were 4.4% (2/45) in Group I and 1.9 % (3/161) in Group II (p=0.30). Office "pull down" of the sling were 0% (0/45) in Group I and 3.1 % (5/161) of Group II (p=0.59). Pearson's correlation was performed for the whole cohort showed a statistically significant correlation between a lower maximum flow rate on pressure flow study and a longer length of time for resolution of urinary retention (p=0.03).

Interpretation of results

This study showed that Miniarc sling performed for the treatment of SUI is still effective if done with or without concomitant POP repair. Our overall cure rate was 88%, with an average 29 weeks of follow up, comparable to previously published [1, 2]. Pickens et al. showed is a study of 108 patients, with a minimum follow-up period of 12 month a 94% were cure rate [1]. The overall rate of persistent urinary retention that required sling revision or office "pull down" was 2.3% and this not differ between groups. However, subjects who underwent sling concomitantly with POP repair required a longer period of catheterization secondary to urinary retention, which is most likely due to the increased amount of dissection, and more invasive surgery in this group.

Concluding message

MiniArc® sling performed with or without concomitant POP repair appears to be effective for the treatment of SUI. Patients who underwent concomitant POP repair are at higher risk of developing longer period of temporary urinary retention after surgery.

References

1. Pickens RB, Klein FA, Mobley JD 3rd, White WM. Single incision mid-urethral sling for treatment of female stress urinary incontinence. Urology. 2011 Feb;77(2):321-4.
2. Kennelly MJ, Moore R, Nguyen JN, Lukban JC, Siegel S. Prospective evaluation of a single incision sling for stress urinary incontinence. J Urol. 2010 Aug;184(2):604-9.

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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**