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Yong C[1], Carey M[1], Al-Salihi S[1]
1. *Royal Women's Hospital, Melbourne*

LAPAROSCOPIC AND ROBOTIC SLING SACRAL HYSTEROPEXY FOR UTERINE PROLAPSE

Hypothesis / aims of study

Suspension of the uterus from the sacral promontory with mesh (sacral hysteropexy) is an option for women with pelvic organ prolapse wishing to conserve their uterus (1,2). Our technique is novel in that a U-shaped mesh placed around the cervix and attached to the sacral promontory using either laparoscopic or robotic approach (Sling Sacral Hysteropexy; SSH) with post-operative vaginal splinting for 5 weeks. The main points of fixation are the anterior cervix and sacral promontory. This study is aiming to describe the SSH and report the objective and subjective outcomes.

Study design, materials and methods

A clinical audit of patients who underwent laparoscopic or robotic SSH between January 2014 and December 2015 was undertaken. SSH involves reflecting the bladder off the anterior cervix and upper anterior vagina and creating windows in each broad ligament. A U-shaped mesh is attached to the anterior cervix; the mesh straps are passed through the broad ligament windows and attached to the sacral promontory. The mesh is then reperitonealised using barbed sutures. A trans-vaginal repair and mid-urethral sling are performed as indicated. A surgical pelvic organ pessary (S-POP) was placed in the vagina at the completion of surgery for a period of 5 weeks to support the position of the mesh. Subjects were assessed at baseline, 5 weeks, and 12 months. POP-Q examination was performed and Pelvic Floor Distress Inventory Questionnaires (PFDI-20), Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaires (PISQ-12) and Euro-Qol Health Questionnaires (EQ-5D) were administered at baseline and 12 months. The primary outcome was 'success' defined as: POP-Q C-point above the hymen; absence of vaginal bulge symptom; and no repeat prolapse surgery or placement of a pessary. Secondary outcomes were patient's subjective improvement in bladder, bowel sexual function, quality of life using validated questionnaires and complications.

Results

Ninety-three subjects (63 laparoscopic, 30 robotic) underwent SSH with 70 (75%) returning for follow-up. The median age was 50 years (range 34-71) and median follow-up was 12 months. Of the 70 subjects analyzed, 47 (67%) completed the questionnaires at follow-up. Forty-seven subjects (67%) had both anterior and posterior colporrhaphy, 4% and 23% had anterior and posterior colporrhaphy alone respectively. Only 6% of participants did not require additional vaginal repair and 29% had a mid-urethral sling. The overall surgical success was 96% (67 of 70 subjects) based on the primary composite outcomes. There was no objective evidence of prolapse recurrence seen throughout the follow-up period (Table 1). Three participants complained of bulge sensation in the vagina but no prolapse seen on clinical examination, hence no further intervention was required. Subjective improvement in prolapse symptoms, bladder, bowel function and quality of life were observed but minimal changes seen in sexual function (Table 2). There were no reported intraoperative complications or mesh exposure. Conservative management was offered to 10 patients who developed de novo urinary incontinence during follow up.

Table 1: Objective outcomes of laparoscopic and robotic SSH

	Preop		Postop		Change	
POP-Q	**Mean**	**Median**	**Mean**	**Median**	**Mean**	**Median**
Aa	0.7	1	-2	-2	-2.8	-3
Ba	1	1	-2	-2	-3.2	-3
C	-1.1	-1	-7.9	-8	-7.1	-7.5
Ap	0.8	1	-2.6	-3	-3.4	-4
Bp	0.8	1	-2.6	-3	-3.5	-4
D	-2.6	-3	-7.9	-8	-5.6	-6

Note:
Negative change in score indicates objective improvement in prolapse for the respective compartments

Table 2: Subjective outcomes of laparoscopic and robotic SSH

	Preop			Postop			Change in score		
Questionnaires	**Mean**	**Median**	**Range**	**Mean**	**Median**	**Range**	**Mean**	**Median**	**Range**
PFDI-20	87.9	90	20.8 to 170.8	35.6	25	0 to 143.8	-52.5	-59.4	-162.49 to 58.33
PISQ-12	29.5	33	0 to 43	28	36	0 to 45	-1.4	0	-40 to 38
EQ-5D	73	75	10 to 100	83.9	85	20 to 100	11.5	5	-55 to 75

Note:
A reduction in PFDI-20 score indicates subjective improvement in prolapse, bowel and bladder symptoms.
A positive change in PISQ-12 and EQ-5D score indicates subjective improvement in sexual function and quality of life.

Interpretation of results

Women who underwent SSH have demonstrated improvement in both objective and subjective outcomes. A small but clinically insignificant worsening of sexual function was observed at follow-up compared to baseline. The surgery has high success rate with minimal complications.

Concluding message

Laparoscopic or robotic sling sacral hysteropexy (SSH) and surgical pelvic organ pessary is a safe and effective surgical option for management of uterovaginal prolapse for women wishing to conserve their uterus. We believe the SSH approach is likely to provide more durable and neutral uterine support than currently used method of sacral hysteropexy. However, comparative studies are required to estabilish the role of SSH compared to exising techniques.

References

1. BJOG 2010; 117:62-68
2. EJOG 2017; 208:71-80

Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** It is a prospective clinical audit that has received local ethics committee waiver **Helsinki not Req'd:** study subjects received appropriate treatment as per usual recommendation with no additional risks or disadvantages. **Informed Consent:** No