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Introduction & Objectives: Open and Laparoscopic Colposuspension are well recognised treatment modalities for female urodynamic stress urinary incontinence (SUI) in the United Kingdom. Robotic assisted laparoscopic surgery is reported to reduce complication rates, duration of hospital inpatient stay and blood loss as compared to the open technique. We report on the outcomes of a new service of Robotic-assisted laparoscopic colposuspension at a London Tertiary Hospital, reporting on safety, efficacy, and technique.

Materials & Methods: A prospective review of all patients was conducted from April 2019 to November 2020 at a tertiary London hospital. Cases were performed through a transperitoneal four port technique using the daVinci Si system. Port placement included a supra-umbilical camera port, 2 robotic arms and a 12mm assistant port. The bladder was dropped, the urethrovessical angle was identified along with Cooper's ligament. 3 tensioned sutures were placed bilaterally suspending paravaginal tissue, incorporating the obturator shelf. Cystoscopy was performed at the end of the procedure to ensure no sutures in the bladder. Patients had urodynamics prior to surgery. Prospective data on demographic details, pre-operative and post-operative pad usage, and urinary incontinence short form (ICIQ-UI-SF) and overactive bladder questionnaires (ICIQ-OAB) were gathered to assess symptom severity and impact on quality of life. Information on patient satisfaction was acquired through PG-II scores. Paired T test analysis was conducted.

Results: 24 patients were identified, with a mean age and BMI of 49 years and 28kg/m² respectively. Mean follow-up period was 10 months(range 1-18 months). 16(66.7%) patients had pure SUI, while 8(33.3%) patients had mixed urinary incontinence (MUI). 8(33%) were recurrent SUI after previous SUI treatment. 8 had previous SUI treatment, out of which 7 had a urethral bulking procedure and 1 had a Transvaginal Synthetic Tape. The average operating time was 126 minutes. The mean 24-hour pad use reduced from 4.9 pre-procedure to 1.3 pads post-procedure whilst mean ICIQ-UI-SF scores improved from 17.6 pre-operatively to 9.6. These were significant changes using paired t-tests for ICIQ-UI-SF scores (p=0.001) and pad usage (p=0.001). There was no significant change in the mean ICIQ-OAB scores from 6.0 pre-procedure to 5.0 post-procedure. The average PGII score was 2.78. The mean Length of stay was 2 nights. The mean blood loss was 20.1mls. The lone intraoperative complication was a bowel injury that was repaired intraoperatively. There were no significant post-operative complications.

Conclusions: This report is the largest UK series to date of its kind. 8 patients had previous treatment for SUI. There was significant improvement in pad usage and quality-of-life scores. Robotic Colposuspension is a viable minimally invasive option for female SUI and would benefit from a longer term evaluation with a larger volume of patients.