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Thiel D [1], Petrou S[1]
1. Mayo Clinic Jacksonville

DOES PERI-URETHRAL INJECTION OF COLLAGEN OR DURASPHERE AFFECT SUBSEQUENT PUBOVAGINAL SLING SURGERY DIFFICULTY OR OUTCOME?

Hypothesis / aims of study

Peri-urethral injection of Durasphere injectable bulking agent (DU) and collagen (CO) have been used as initial therapy for stress urinary incontinence. There is no published data regarding pubovaginal sling surgery difficulty or success following peri-urethral injection therapies. We reviewed our experience with female patients who underwent pubovaginal slings with autologous fascia (APVS) following peri-urethral bulking agent therapy to determine if prior injection affected surgical difficulty or surgical outcome.

Study design, materials and methods

With IRB approval charts of all females who had undergone sub-urethral sling surgery by a single surgeon between January, 2000 and December, 2003 were retrospectively reviewed. For standardization purposes, the study population was limited to those patients with APVS. These cases were divided into a virgin group (no previous outlet procedures), a re-do group (pts with previous sling procedures), and patients who had a history of peri-urethral injection with either CO or DU (no history of any other previous outlet procedures).

The single operating surgeon has made it standard practice over the last 5 years to comment extensively on difficulty of vaginal dissection during APVS surgery. Surgical difficulty was scored by an outside blinded reviewer after examination of operative notes. A score of 1 was a standard procedure with minimal, if any adhesions. A score of 5 was given for difficult vaginal dissections secondary to adhesions or bleeding. A score of 10 was given for extremely difficult dissections including heavy bleeding or concrete adhesions. Estimated blood loss (EBL), operating time, and surgical success were also examined. Surgical failure was determined by evidence of leakage on physical exam (Marshall test) more than one month post operatively.

Results

99 APVS were reviewed (mean age 69.8 years). There were 41 virgin procedures, 42 re-do slings, 9 slings following DU, and 7 slings following CO injection**.** See Table for surgical difficulty scores, operative time, EBL, surgical failures, and post-operative de novo urgency for all APVS patients.

Table: Surgical difficulty scores, EBL, operative time, surgical failures, and de novo urgency of autologous pubovaginal sling patients.

	Virgin Sling n=41	Repeat Sling n=42	Sling Following Durasphere n=9	Sling Following Collagen n=7
Surgical Difficulty Scores	3.3	7.1	3.9	6.6
Mean EBL (cc)	160	182	101	165
Mean Operative Time (minutes)	86.4	104	89.5	118.8
Surgical Failure	2/41	4/42	1/9	1/7
De-novo Urgency	1/41	5/42	1/9	2/7

Interpretation of results

Surgical difficulty scores: Virgin slings (3.3) correlated with slings following DU (3.9) and repeat slings (7.1) correlated closely with slings following CO (6.6). **Mean EBL:** There is no statistical difference in EBL between the 4 groups. **Mean operative time:** Virgin slings (86.4 min.) again correlated closely with slings following DU (89.5 min.) while repeat slings (104 min.) correlated with slings following CO (118 min.). There was no statistical difference in **surgical failure** or **de novo urgency** between the 4 groups.

Concluding message

As expected, re-do sling surgery has a higher difficulty score than virgin sling surgery with a longer operative time. Previous CO injection appears to make subsequent APVS surgery close to re-do surgery with regards to difficulty score and OR time. Previous DU injection makes subsequent vaginal dissection only slightly more difficult than virgin cases with minimal impact on operating time. The reason for significant variability in OR time and surgical difficulty between post DU and CO is unclear. Regardless, peri-urethral injection of DU or CO does not appear to affect surgical failure rates following APVS surgery.