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THE UTILITY OF INTRAOPERATIVE CYSTOSCOPY IN MAJOR VAGINAL AND UROGYNECOLOGIC SURGERIES

Aims of Study

We examined the frequency of significant intraoperative cystoscopic findings during major vaginal reconstructive and urogynecologic surgeries. This study represents the largest series of patients evaluated to date. Our service routinely performs cystoscopy following all anti-incontinence and pelvic reconstructive operations. We hoped to determine what our injury rate is following our procedures, specifically those that would have been undetected without the use of cystoscopy and possibly identify any procedures that might be associated with a particularly high risk for injury. We also attempted to identify characteristics that could predict preoperatively those patients at higher risk for injury.

Methods

The charts of 526 women who underwent anti-incontinence or pelvic reconstructive surgery during the period of January 1, 1997 and April 20, 2001 were reviewed. All of these women had routine cystoscopy with intravenous indigo carmine performed after their anti-incontinence or pelvic reconstruction operation. Transurethral cystoscopy was performed with a 21 French 70° cystoscope. The bladder was systematically inspected for the presence of injury or foreign material. Ureteral patency was assessed after performance of the anti-incontinence procedure, culdoplasty or anterior vaginal wall reconstructive procedure by the strong efflux of indigo-carmine stained urine from both ureteral orifices. We determined the incidence of significant cystoscopic findings and their effect on intraoperative management. Two-tailed t-tests and logistic regression analyses were used to compare characteristics between the groups with and without significant cystoscopic findings.

Results

During the 526 operations, twenty-six significant findings (4.9%) were unsuspected before cystoscopy. Fifteen (2.9%) of these findings were operative injuries that required intervention. Seven of the 15 cases resulting in changes in intraoperative management were caused by anterior colporrhaphy sutures (2.0% of all anterior colporrhaphies). Seven of 184 Burch procedures (3.8%) resulted in injuries to the lower urinary tract, of which three (1.6%) required intervention that were unrecognized prior to cystoscopy. 79 subjects (15.0%) had no anti-incontinence operation performed. Of these patients, there was one partial ureteral obstruction from an anterior colporrhaphy (1.3%). There were no unrecognized injuries that caused morbidity postoperatively. There were no significant differences between patients with abnormal and normal cystoscopic findings in regard to mean age, weight, parity, estimated blood loss, previous surgery, or previous incontinence surgeries. No complications or morbidity occurred as a direct result of intraoperative cystoscopy.

Conclusions

Intraoperative cystoscopy with intravenous indigo carmine is a safe and effective way to detect injury of the lower urinary tract. Cystoscopy detected unsuspected operative injuries in 2.9%. In cases that did not involve anti-incontinence procedures, the rate of injury was 1.3%. Rates of injury are influenced greatly by the individual techniques employed, even for similar procedures. In our series, the anterior colporrhaphy was the most common cause of unrecognized ureteral compromise. Cystoscopy provides an easily performed test that can effectively assess the lower urinary tract, decreasing morbidity by early diagnosis. Because of the elevated risk for ureteral and bladder injury, routine intraoperative cystoscopy should be considered during all anti-incontinence and vaginal reconstructive surgeries.