CHAPTER 34

SURGICAL IMPLANTATION OF THE SYNTHETIC SLING (THE 6-POINT FIXATION TECHNIQUE AND WEIGHT-ADJUSTED SPACING NOMOGRAM): TECHNIQUE AND RESULTS

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INTRODUCTION

The pubovaginal sling may be used to correct symptomatic Type I, II, and III female stress urinary incontinence. Autologous, synthetic, and cadaver allografts have been utilized as the supporting material. The most feared complication of pubovaginal slings is urethral obstruction; intractable de novo urge incontinence is a close second. Literature reports that the current incidence of urethral obstruction ranges from 5 to 10%, even in the hands of the most experienced surgeons. Complications unique to synthetic slings include urethral erosion, vaginal granulation tissue formation, and sling infection.

The success of a sling operation is predicated upon achieving clinically appropriate resting urethral closure to restore continence without causing obstruction or de novo urge symptoms. Permanent urethral obstruction and de novo urge incontinence symptoms are more distressing...
to an afflicted female than persistent stress incontinence. De novo urge incontinence occurs because the sling has been tied too snugly. If the sling is tied too tight, complete obstruction of the urethra and subsequent urinary retention will ensue.

Intraoperative measures employed to prevent urethral obstruction include using a plastic spacer, rigid cystoscope, ultrasound monitoring, and vaginal packing.\textsuperscript{1,17,20,25} Although these methods are useful to the authors that have described these techniques, they have not been reliably reproducible for other surgeons. Furthermore, these measures lack scientific basis for their methodology and do not take into account individual variability of a patient’s weight and body habitus.

This chapter will review a new surgical technique (the “6-point fixation” technique and “weight-adjusted spacing nomogram”) that integrates individual’s body weight into the surgical equation, using a scientific methodology. Although this technique was initially described for synthetic slings, this methodology may be adopted for autologous sling surgery, as well.

COMPLICATIONS OF SLING SURGERY

A common caveat in sling surgery is to tie the sling sutures under “no tension” or “minimal tension” to prevent urethral obstruction. In spite of this, well-known complications of pubovaginal slings include urethral obstruction, de novo urge symptoms, and exacerbation of pre-existing urge syndrome. The incidence of permanent urethral obstruction and de novo urge incontinence ranges from 2 to 10\% and 5 to 25\% in the literature.\textsuperscript{3,5,7,8,12,14,16,24} Cross et al\textsuperscript{7} reported that the incidence of urethral obstruction ranges from 5 to 20\% following a stress incontinence procedure. The relative risk of obstructive complications is independent of the sling material used. McGuire et al\textsuperscript{8} reported a 28\% postoperative urgency/urge incontinence rate with 19\% de novo urgency/urge incontinence secondary to fascial pubovaginal sling. Juma et al\textsuperscript{10} reported an 83\% incidence of temporary retention, a 5.5\% rate of urethral obstruction, and a 14.8\% de novo detrusor instability rate after insertion of an \textit{in situ} vaginal sling. Ogundipe et al\textsuperscript{19} reported a 25\% incidence of detrusor instability after a Gore-tex sling was inserted. Thus, all patients contemplating sling surgery must be counseled on the risk of urinary retention and the possible need for postoperative intermittent catheterization. The treatment options of permanent urethral obstruction include life-long self-catheterization, formal urethrolysis, and incision of the sling.