

# Bladder Stone 6 Years after Intravaginal Slingplasty: A Case Report and Review of Literature

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We present a 42 year-old patient with a history of intravaginal slingplasty operation performed 6 years ago admitted with persistent lower urinary tract symptoms, dyspareunia and chronic pelvic pain for almost four years. She had undergone two previous cystoscopies in which only mucosal edema had been reported. After a detailed urogynecological examination, a bladder stone over a mesh at the bladder neck was revealed at her third cystoscopy and was removed. Persistent urogenital symptoms should remind the possibility of unrecognized, intraoperative transvesical passage of the mesh or mesh erosion and stone formation over it even after years and even in the presence of a normal postoperative cystoscopy; a thorough cystoscopic evaluation, particularly paying attention at the urethra and bladder neck, should be performed in any case with a history of sling procedures.

**Keywords:** Bladder stone, Intravaginal slingplasty, Mesh erosion

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## Introduction

Intravaginal slingplasty (IVS) is one of the many different suburethral sling procedures, probably one of the earliest ones.<sup>1</sup> As longer postoperative follow up periods are reported, IVS does not seem to be as safe as mentioned before. In a meta-analysis of randomized controlled trials, complication rates of IVS were as follows; bladder perforation 3,4-8%, bladder erosion 0-1,7%, vaginal erosion 0-9%, hematoma formation 2-3,4 %.<sup>2</sup>

We present a case of bladder stone formation over an eroded mesh 6 years after an IVS procedure.

## Case Report

A 42 year-old woman presented to the department of Urogynecology of Ankara University Cebeci Hospital with suprapubic pain, dyspareunia, frequency, urgency and recurrent lower urinary tract infection lasting for about 4 years. Her history revealed an intravaginal sling operation performed 6

years ago at another clinic for stress urinary incontinence, followed by intraoperative cystoscopy. In the last four years, she had been examined by a repeat cystoscopy at the same hospital; only mucosal edema had been reported.

The initial gynecologic examination revealed an enlarged myomatous uterus and a hard and extremely painful mass under the anterior vaginal wall, about 2 cm proximal to the urethral meatus. Her cough stress test was negative. Urine analysis showed pyuria and calcium oxalate crystals. Transvaginal ultrasonography revealed two intramural leiomyomas 40x45 mm and 33x25 mm in size, and a calcified mass 27x30 mm in diameter located beneath the anterior vaginal wall, close to the bladder neck. Hysterectomy was decided as she had a large myomatous uterus and chronic pelvic pain. A pelvic examination under general anesthesia was performed because of the suspicious painful calcified mass. As the mass was found to be located at the bladder neck, a diagnostic cystoscopy was performed before laparotomy; the mass was found to be a bladder stone over an eroded mesh at the bladder neck.

Cystoscopic lithotripsy was not successful and cystotomy was performed concomitant to the hysterectomy. At cystotomy, a 3 cm stone and the intravesical portion of the mesh were removed (Figure 1).

The patient was relieved of her irritative complaints immediately after the removal of the stone and mesh. She was continent at admission and remained continent after the operation. The patient is free of her previous complaints at 2 years follow up.

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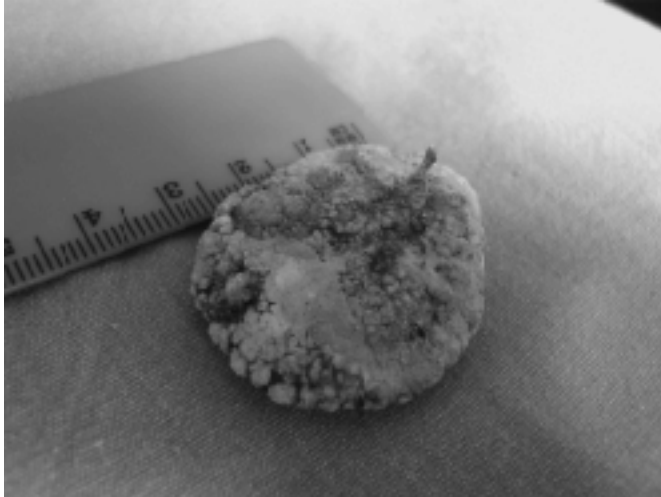


Figure 1: The removed mesh and bladder stone

## Discussion

Bladder stones may form after suburethral sling procedures; most cases have been reported after tension-free vaginal tape (TVT) placement and presented at 12-132 months postoperatively.<sup>3-11</sup> To our knowledge, this is the first case after an IVS procedure and was diagnosed 6 years after the operation.

Intraoperative unrecognized perforation of the bladder or gradual erosion of the mesh to the vesical mucosa may predispose to stone formation after suburethral sling procedures.<sup>3</sup> The surgical technique (i.e., excess tension applied or overdissection and devascularisation of the urethra or inadvertently submucosal placement of the mesh), high abdominal pressure, estrogen deprivation and recurrent surgery have been reported as risk factors for mesh erosion.<sup>12,13</sup> In this case, the complaints of the patient started 2 years after the IVS procedure and the postoperative cystoscopy did not reveal any perforation; thus, gradual penetration and erosion of an inadvertently submucosally placed mesh might have been the predisposing factor. Less likely, a perforation could have been missed during the initial cystoscopy because of its localization at the bladder neck.

Another risk factor for erosion is the type of the mesh. The microporous, multifilament threads used in IVS have a higher risk of infection and erosion.<sup>13,14</sup> Macroporous monofilament threads are the preferred mesh materials in sling procedures.<sup>15,16</sup>

The eroded mesh materials may either be removed partial (only the intravesical portion) or complete. Partial removal has been preferred by some authors in order to prevent recurrence of incontinence, considering that leaving the extravascular portion in place would support the bladder neck.<sup>3,6</sup> In this

case the mesh was removed partially leaving the extravascular part behind with the same concern, and the patient remained continent. However, it is not possible to draw definite conclusions as data is limited. The reported cases are few, and the continence status for these cases is different; some are already incontinent before the removal of the mesh,<sup>4</sup> and some have not reported whether patients were continent or not.<sup>5</sup>

The presence of persisting urogenital tract symptoms after suburethral sling procedures should remind the possibility of mesh erosion even after years and even in the presence of a normal postoperative cystoscopy. Stone formation may occur over the mesh in years as in this case. Thus, a thorough cystoscopic evaluation, particularly paying attention at the urethra and bladder neck, is mandatory both immediately after the sling procedures and in any case with a history of mesh procedures and persisting irritative symptoms.

## İntravajinal Slingplastiden 6 Yıl Sonra Mesane Taşı: Olgu Sunumu ve Literatürün Gözden Geçirilmesi

Bu olgu sunumunda 6 yıl önce intravajinal slingplasti geçirmiş ve 4 yıldır persistan alt üriner sistem semptomları, dispareni ve kronik pelvik ağrısı olan 42 yaşında bir hasta sunulmaktadır. Hastanın öyküsünde, daha önce yapılmış olan iki sistoskopiye sadece mukozada ödem varlığı rapor edilmiştir. Ayrıntılı bir ürojinekolojik incelemeyi takiben yapılan üçüncü sistoskopiye, mesane boynunun hemen arkasında mesane taşı saptanmıştır. Subüretral meş uygulanan hastalarda persistan ürogenital semptomlar, yıllar sonra ortaya çıksa ve intraoperatif sistoskopi normal olsa dahi, intraoperatif mesane yaralanması veya meş erozyonu ve mesane taşı oluşumu olasılığını akla getirmelidir; bu olgularda mesane boynunun hemen arkasının özellikle incelendiği dikkatli bir sistoskopi yapılması önem taşımaktadır.

**Anahtar Kelimeler:** İnvajinal slingplasti, Mesane taşı, Meş erozyonu

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