

## CYSTOSCOPY WITH FULGURATION FOR THE TREATMENT OF RECURRENT URINARY TRACT INFECTIONS DUE TO TRIGONITIS IN WOMEN

### Introduction

Recurrent urinary tract infections represent a difficult clinical and therapeutic challenge, [1] especially in older women among whom several have either resistant strains or antibiotic allergies that limit their antibiotic therapy. We review the technique of cystoscopy with fulguration of trigonitis in those women, as well as our longterm experience with this simple outpatient procedure. [2]

### Design

This video describes the treatment of a 67 year old women with a history of recurrent urinary tract infections not responding to several courses of antibiotic treatment. Cystoscopy under light general anesthesia with a 17.5 French female cystoscope or urethroscope surveys the lesions of trigonitis. (Fig. 1a and b) The trigone is covered by inflammation, pus pockets, bullous lesions, and small encrustations that are frequently found in these chronically infected women.

A fine tip bugbee electrode is introduced to cauterize these lesions over the trigone. The cautery is set up on 20 to limit the depth of penetration. The ureteric orifices are identified. The edges of the trigonal surface to be cauterized are marked starting from the ureteric orifice down to the bladder neck area, and then across the bladder neck area without involving the urethra to avoid a bladder neck contracture. Next the inter-ureteric ridge is cauterized by starting medially to the ureteric orifice and travelling to the other side. Finally the whole infected trigonal surface circumscribed by these margins can be safely cauterized.

The procedure ends when all lesions have been cauterized. The white fluffy trigonal shedding can be irrigated out. The cauterized trigone will take 6 months to heal completely and be replaced by a nice shiny and pink surface with no residual infection sites on flexible cystoscopy. (Fig. 2a and b)

### Results

We recently reported on the long-term efficacy of this procedure in a cohort of women treated between 2004 and 2008, who had a mean follow-up of 4 years.

In this IRB approved study, fulguration of trigonitis was performed on an outpatient basis in non-neurogenic women with recurrent urinary tract infections who had at least 1 year followup and who underwent an office cystoscopy at 6 months after fulguration to verify trigonal healing.

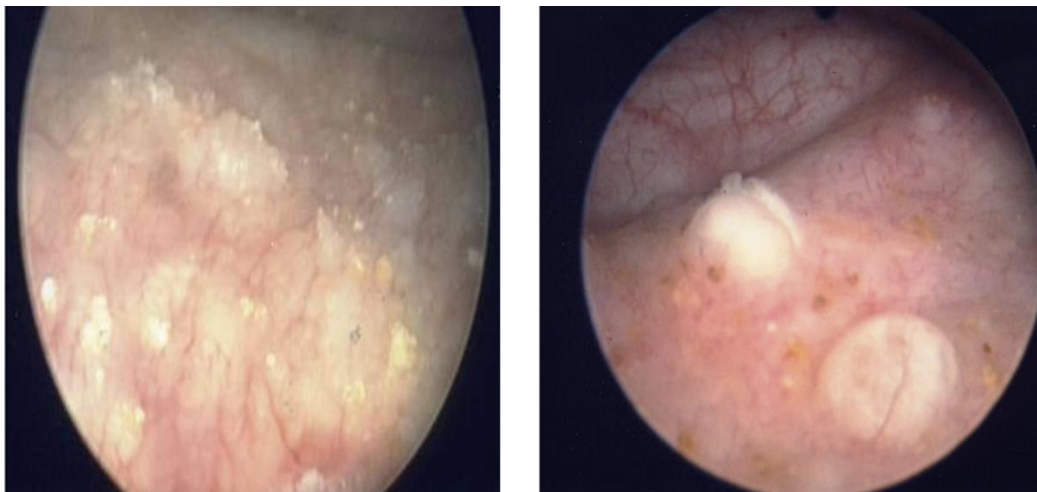
The primary outcome for success was a completely healed trigone with no evidence of any residual trigonitis. The secondary outcome included repeat episodes of urinary tract infections documented by either urine cultures or any antibiotic courses prescribed for lower urinary tract symptoms suggestive of a urinary tract infection.

Three quarter of these women with proven resolved trigonitis had very few infections over the ensuing years, whereas those with residual areas of trigonitis had more frequent infections than the cure group, although less so than at baseline before the trigonitis fulguration.

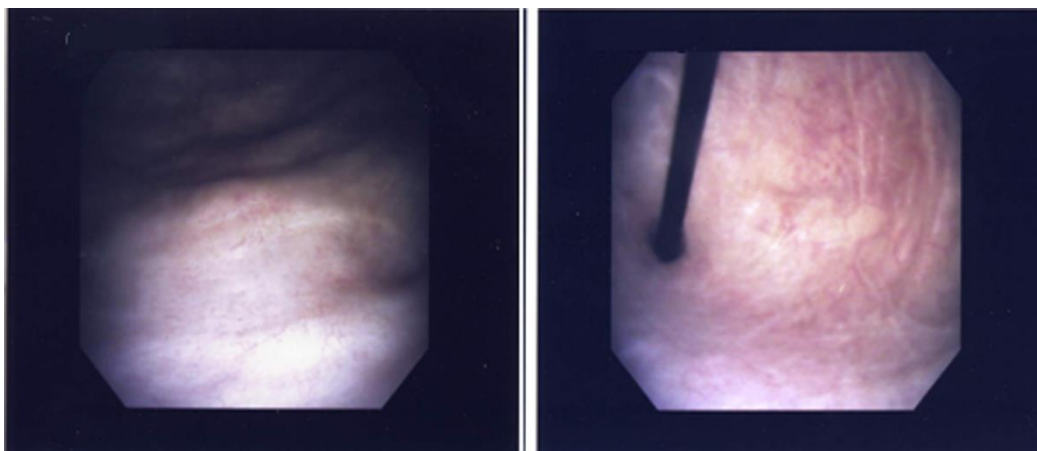
### Conclusion

This simple procedure can assist in the challenging management of recurrent urinary tract infections in women with extensive trigonitis by eradicating these presumed sites of bacterial persistence in the bladder wall.

**Figure 1:** Flexible cystoscopy performed prior to fulguration reveals characteristic Trigonitis with bullous edema and submucosal calcifications (left). A closer view of trigonal inflammation shows two large mucosal pus containing pockets (right).



**Figure 2:** At 6 month following cystoscopic fulguration of trigonitis, office cystoscopy reveals a well healed trigone with no areas of residual trigonitis.



#### References

1. Glover M, Moreira CG, Sperandio V, et al. Recurrent urinary tract infections in healthy and nonpregnant women. *Urological Science*, 25:1, 2014.
2. Hussain SA, Alhalabi F, Zimmern PE. Long-term efficacy of fulguration of trigonitis for recurrent urinary tract infections in women. *Urological Science*, 26:197, 2015.

#### Disclosures

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