

A Rare Case: Submucosal Stone Formation after 20-Years of Dextranomer Hyaluronic Copolymer Endoscopic Sub ureteric Injection for Vesicoureteral Reflux

Aydemir ASDEMİR, Esat KORGALI, Huseyin SAYGIN, Fatih F. ARISOY

Department of Urology, Faculty of Medicine, Sivas Cumhuriyet University, Sivas, Türkiye

ABSTRACT

Dextranomer hyaluronic copolymer (Deflux®) endoscopic subureteric implantation is considered to be safe and effective for vesicoureteral reflux (VUR) treatment. The deflux implantation is popular for its high success rate and minimal complications. A 24-years-old female who underwent prior subureteric endoscopic therapy with deflux for VUR 20-years ago, was investigated for dysuria and mild right renal colic pain. Computed tomography confirmed the presence stones that was retrieved by cystolithotripsy and enucleation of the residue deflux or calcification of it. Although endoscopic subureteric implantation with deflux has a high success rate for VUR resolution, caution during the follow-up period in order to prevent potential long-term complications is required.

Keywords: Laser, Enucleation, Vesicoureteral reflux, deflux

OPEN ACCESS

*Correspondence

Aydemir Asdemir

Email: aydemirasdemir@hotmail.com

Tel: + 90 5068943216

Specialty Section

Medicine section of NJU

Article Metrics

Submitted: 22 Sept 2025

Accepted: 9 Nov. 2025

Published: Jan-June 2026

Journal Metrics

ISSN: p- 2971-7922, e- 2971-7868

Website: njv.org.ng

E-mail: nigerian.j.urology@gmail.com

Publisher: cPrint, Nig. Ltd

Email: cprintpublisher@gmail.com

Access to the article



How to cite this article

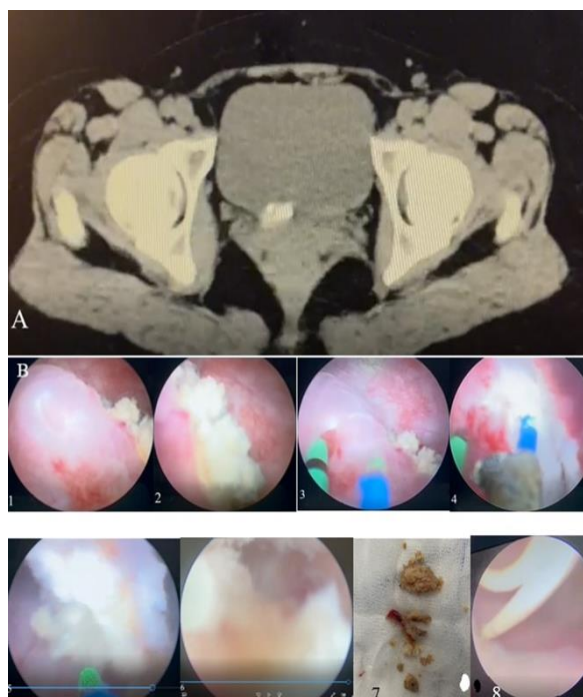
Aydemir Asdemir, Esat Korgali, Huseyin Saygin, Fatih F. Arisoy. A Rare Case: Submucosal stone formation after 20-years of dextranomer hyaluronic copolymer endoscopic sub ureteric injection for vesicoureteral reflux. Nig J Uro, 2026;11(1). 131-134.

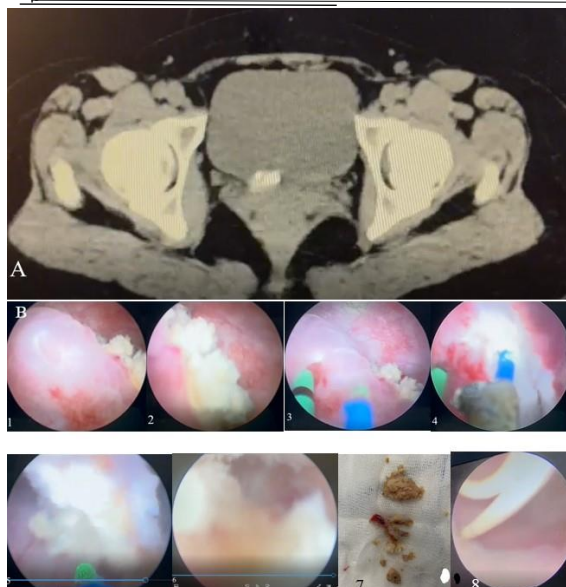
INTRODUCTION

Vesicoureteral reflux (VUR), a common paediatric anomaly with an estimated prevalence of 10%, can cause infection, scarring and end-stage renal disease (1). EAU guidelines suggest us to offer open surgical correction to patients with persistent high-grade reflux and endoscopic correction for lower grades of reflux, and to offer surgical correction, if parents prefer definitive therapy to conservative management and also for in high-risk patients who already have renal impairment, a more aggressive, multidisciplinary approach is needed (2). In AUA (American Urological Association) guidelines high-grade reflux, older age at initial presentation, low probability of spontaneous resolution, breakthrough febrile urinary tract infections despite antibiotic prophylaxis, renal scarring, and parental preference are relative indications for surgical intervention (3). Current surgical treatments of VUR include hydrodistension implantation, endoscopic injection of the bulking agent and open, laparoscopic or robot-assisted ureteroneocystostomy. The aim of subureteric injection is to lengthen the submucosal ureteric tunnel to an adequate length in order to prevent urine reflux (3). Matouschek introduced endoscopic injection with polytetrafluoroethylene (PTFE) paste for VUR treatment in 1981 (3). O'Donnell and Puri described the classic subureteric Teflon injection (STING) technique first in 1984. Different materials are available for subureteric implantation (1, 3, 4). At present, non-animal stabilized hyaluronic acid/dextranomer gel (NASHA/Dx) represents the mainstay bulking agent and is regarded as the safest and most biocompatible material with the least potential for migration from the injection site (5). In this study, we report a case of unusual delayed presentation in the form of dysuria caused by calcified bulking agent dextranomer hyaluronic copolymer (Deflux®) after 20 years.

CASE REPORT

A 24 years-old female presented with dysuria and mild right renal colic pain over the last 2 months. She had a history of right subureteric injection by dextranomer hyaluronic copolymer (Deflux®) at the age of four years. Her computed tomography showed a few bladder stones (A). Cystoscopy showed normal urethra and bladder neck; however, we found a fixed, and partly submucosal bladder stone located medial to the right ureteric orifice (B1-2). Ureter is catheterized with 5fr ureteral catheter. Then for the fixed stone and calcified sub ureteric injection material we did holmium laser enucleation by using a 550µ fiber with settings of 10W 1J and 10Hz (B3-7). Then 4.8fr 24cm JJ stent was inserted. Urethral catheter was taken postop on the fifth day. The patient's condition was good, and she was discharged on the sixth day. She was seen four weeks later and had a normal abdominal ultrasonography (B8).





DISCUSSION

Several materials are available that are used in the endoscopic subureteric injection for VUR treatment. Agents can be autologous, such as fat or collagen, or non-autologous such as polytetrafluoroethylene (PTFE), dextranomer hyaluronic copolymer (Deflux®), and polydimethylsiloxane (Macroplastique®) (4). The ideal injectable agent should be non-toxic, non-migratory, non-antigenic and biocompatible (4). STING with dextranomer hyaluronic copolymer (Deflux®) has acquired acceptance and popularity due to the material's effectiveness and safety. Post-operative complications following endoscopic administration of dextranomer hyaluronic copolymer (Deflux®) are very limited. Complications were found to be urinary tract infection (UTI), ureteric obstruction and stone formations or calcifications of the material (5). Also as long-term complications stone formation and ureteric obstruction may appear (7, 8). Few cases reported stones at the prior STING site several years after dextranomer hyaluronic copolymer (Deflux®) implantation. In our case, we report the longest late presentation (after 20 years) found in the literature of such a complication. The recent guidelines by American Urological Association (AUA) for VUR management recommend a voiding cystography following intervention to ensure resolution (6).

However, recommendations in terms of duration of post-intervention follow-up are still undefined.

CONCLUSION

A vigilant follow-up program for monitoring patients postendoscopic subureteric injection with dextranomer hyaluronic copolymer (Deflux®) need to be defined as long-term complications can appear after several years.

REFERENCES

1. Woolf AS, Lopes FM, Ranjzad P, Roberts NA: Congenital disorders of the human urinary tract: recent insights from genetic and molecular studies. *Front Pediatr.* 2019, 7:136. 10.3389/fped.2019.00136
2. EAU Guidelines, Pediatric Urology, Limited Update March 2022, 3.14 vesicoureteric reflux page 72
3. Sung J, Skoog S: Surgical management of vesicoureteral reflux in children. *Pediatr Nephrol.* 2012, 27:551- 61. 10.1007/s00467-011-1933-7
4. Seo MH, Song JY, Chung JM, et al. Calcified Macroplastique substance: a rare cause of recurrent gross hematuria after endoscopic injection. *Child Kidney Dis.* 2018;242: 71–74.
5. Läckgren G, Kirsch AJ: Endoscopic treatment of vesicoureteral reflux. *BJU Int.* 2010, 105:1332-47. 10.1111/j.1464-410X.2010.0932.x
6. Peters CA, Skoog SJ, Arant BS, et al. Summary of the AUA guideline on management of primary vesicoureteral reflux in children. *JURO.* 2010;184:1134–1144.
7. Biu FA, Han EY, Mialhik SI, Makhija R: A Rare and Late Complication of Subureteric Teflon Injection With Non-Animal Stabilized Hyaluronic Acid/Dextranomer Gel. *Cureus* 15(1): e33238. DOI 10.7759/cureus.33238.
8. Aljumaiah S, Aljuhayman A, Jamalalail Y, Hamri SB: Submucosal stone formation after 14-years of polydimethylsiloxane (Macroplastique®) endoscopic subureteric injection for vesicoureteral reflux: Unusual presentation for a rare complication. *Urology*

Case Reports

<https://doi.org/10.1016/j.eucr.2020.101343>

9. 2010, 105:1332-47. 10.1111/j.1464-410X.2010.09325.x
10. Peters CA, Skoog SJ, Arant BS, et al. Summary of the AUA guideline on management of primary vesicoureteral reflux in children. JURO. 2010;184:1134–1144.
11. Biu FA, Han EY, Mialhik SI, Makhija R: A Rare and Late Complication of Subureteric Teflon Injection With Non-Animal Stabilized Hyaluronic Acid/Dextranomer Gel. Cureus 15(1): e33238. DOI 10.7759/cureus.33238
12. Aljumaiah S, Aljuhayman A, Jamalalail Y, Hamri SB: Submucosal stone formation after 14-years of polydimethylsiloxane (Macroplastique®) endoscopic subureteric injection for vesicoureteral reflux: Unusual presentation for a rare complication. Urology Case Reports <https://doi.org/10.1016/j.eucr.2020.101343>
13. doi: 10.4111/icu.2016.57.6.424