Non-animal hyaluronic acid/dextranomer gel (Deflux®) endoscopic treatment in grade IV VUR Results after 15–25 years: durable and effective

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INTRODUCTION

• High-grade vesicoureteral reflux (VUR; Figure 1) is associated with a risk of febrile urinary tract infections (UTIs) and pyelonephritis.1,2
• Endoscopic injection is minimally invasive and offers the chance of curing VUR while enabling avoidance of ureteral reimplantation (open surgery).3,4
• Before availability of endoscopic treatment, all patients with pyelonephritis and grade IV VUR received antibiotic prophylaxis for ≥1 year. If dilating reflux persisted, these patients were treated by open surgery.
• We performed a long-term, observational study of children with grade IV VUR undergoing endoscopic injection of non-animal hyaluronic acid/dextranomer gel (Deflux®; Palette Life Sciences) and compared two 5-year treatment periods.5

RESULTS

• Between 1 May 1993 and 30 April 2003, 185 patients (69 boys, 116 girls) were treated endoscopically and included in the current study; 237 ureters with grade IV VUR were treated.
• The mean number of endoscopic treatments per patient was 1.46 (1.50 during the first 5-year study period and 1.40 during the second period).
• The mean volume of Deflux injected was 0.73 mL/ureter – significantly higher during the second versus the first 5-year study period: (0.86 vs 0.64 mL; p<0.0001).
• According to the last VCUG, 69% of ureters showed positive response (VUR grade 0–I), 7% had VUR grade II and 23% had VUR grade ≥III (Figure 2).
• Minimal differences between boys and girls were observed in reflux grade at the last VCUG (Figure 3; p-value not significant).
• Single ureters showed significantly improved response compared with double ureters (Figure 3; p=0.0225).
• Similar patterns were observed when the results were analyzed ‘by patient’ instead of ‘by ureter’.

METHODS

• Children with persisting grade III–V VUR and UTIs attending Uppsala University Hospital routinely received endoscopic treatment with Deflux.
• Inclusion criteria for this study were: children with grade IV VUR diagnosed by voiding cystourethrogram (VCUG); dilating VUR persisting for >1 year; breakthrough febrile UTIs or poor compliance with antibiotic prophylaxis; and treatment with Deflux between 1993 and 2003.
• All study patients were diagnosed with VUR after pyelonephritis.
• Exclusion criteria were: endoscopic treatment with agents other than Deflux; neurogenic bladder dysfunction; previous ureteral surgery; bladder extrophy and urethral valve.
• After endoscopic treatment, patients exhibiting grade ≥III VUR were offered repeat endoscopic treatment (maximum three procedures), or they could choose ureteral reimplantation (open surgery).
• In 2018 (15–25 years after endoscopic treatment), patients’ charts from Uppsala University Hospital and local county hospitals were studied, and post-treatment VCUG results were analyzed.
  – For analyses of reflux grade after endoscopic treatment, any patients/ureters with missing data were excluded.
E D IT O R I A L S U P P O RT w a s p r o v i d e d b y K e n S u t o r o f A s c e n d a n c y M e d i c a l W r i t i n g L t d, w h i c h w a s c o n tr a c t e d a n d c o m p e n s a t e d b y P a l e t t e L i f e S c i e n c e s f o r t h e s e s e r v i c e s . P a l e t t e L i f e S c i e n c e s r e v i e w e d t h e h a n d o u t f o r m e d i c a l a n d s c i e n t i f i c a c c u r a c y .
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