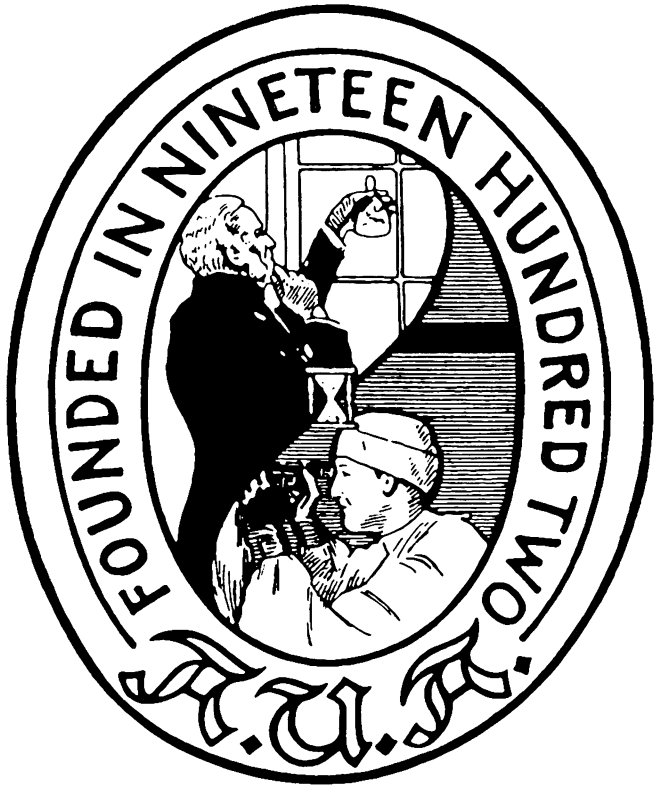
Volume 148 December 1992 Number 6

The Journal of UROLOGY®

Official Journal of the American Urological Association, Inc.
Founded In 1917 By Hugh Hampton Young



Annual Meeting, American Urological Association, Inc., San Antonio, Texas, May 15–20, 1993

The Journal of
UROLOGY®

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0022-5347/92/1486-1901$03.00/0
THE JOURNAL OF UROLOGY
Vol. 148, 1901–1902, December 1992
Printed in U.S.A.

SIGNIFICANT OBLITERATION OF THE URETHRAL LUMEN AFTER WALLSTENT IMPLANTATION

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ABSTRACT

The permanently implanted self-expandable urethral stent (Wallstent*) has found increased use in patients with recurrent urethral strictures because of its simple implantation technique. To date there have been no reports of serious complications. At 6 weeks after stent implantation our patient had complete luminal obstruction. This complication demonstrates the need for short-term controls after implantation of a urethral stent.

KEY WORDS: urethral obstruction, urethral stricture, urinary catheterization, stents

Endoscopic intraluminal implantation of a self-expandable permanent urethral stent (Wallstent) has found increased use in patients with recurrent urethral strictures because of its simple implantation technique.[1] This metallic, self-expanding stent is easily implantated endoscopically.[2] Longer strictures can be treated by 2 overlapping stents.[2,3] In case of complications the stent may be explanted endoscopically.[4] Cystoscopy after stent implantation is possible.[5] No serious complications have been reported after placement of the stent.[3,5–7] Transient discomfort was reported in some patients as well as minor postvoid dribbling after insertion of the stent.[2] More recent studies showed mild hematuria and slight dysuria.[5,7] No stent became obstructed due to tissue proliferation or incrustation.[5]

Current studies in cardiology showed early complete occlusion in 20 to 40% of the coronary artery stents within 14 days after implantation. Furthermore, frequent late occlusion or recurrent stenosis due to intimal hyperplasia was observed. Therefore, early occlusion constitutes an important limitation of coronary artery stents in angiology.[8]

CASE REPORT

A 65-year-old man was hospitalized for recurrent urethral strictures in July 1991. History included pollakisuria with nocturia, as well as prolonged micturition. Since 1976 recurrent episodes of urinary retention secondary to urethral strictures were treated 4 times by endoscopic urethrotomy. Medical history was uneventful except for simple nephrectomy in 1956 for urogenital tuberculosis. The patient had a pathological flow rate with a peak flow of 10 ml. per second. Duration of micturition was 60 seconds with 190 ml. residual urine. Retrograde urethrography showed occlusion of nearly the entire proximal penile urethra (fig. 1).

After informed consent, urethrotomy was done and a 3 cm. stainless steel self-expandable stent was implanted into the proximal urethra covering the entire diseased segment. There were no complications after implantation. The urine was sterile. The peak flow rate was 35 ml. per second and he had no urinary retention at discharge from the hospital.

The patient returned to the outpatient clinic with complete urinary retention 6 weeks after stent implantation. Urethrography showed an extensive obstruction of the stented lumen (fig. 2). Due to complete obstruction endoscopic explantation of the stent could not be done and open revision was necessary. At operation significant obstruction of the entire stent with almost complete occlusion of the proximal end was noted. Obstruction was due to a hyperplastic reaction of the urothelium (fig. 3). The urethra was then reconstructed by end-to-end anastomosis. Convalescence was uneventful and the patient was discharged from the hospital with a normal flow rate (35 ml. per second) without evidence of residual urine and a normal urethrogram (fig. 4).

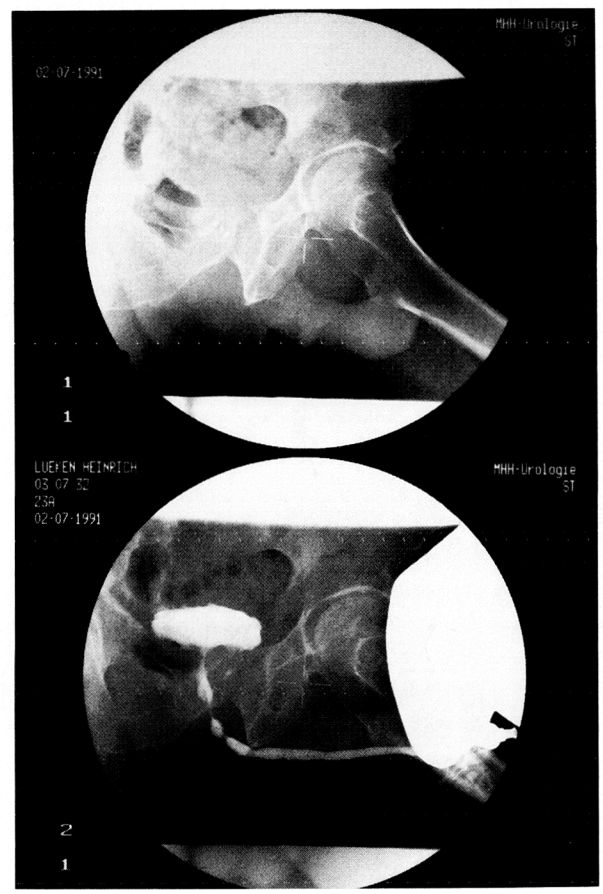

FIG. 1. Retrograde urethrogram before stent implantation

DISCUSSION

Because of the simple implantation technique and the lack of serious complications, the self-expandable stent seems to be an attractive alternative in selected patients with recurrent urethral strictures. As in our patient, endoscopic explantation of an incrustated stent may become impossible in some patients. The reported complete obstruction 6 weeks after implantation demonstrates the need for careful short-term controls. As an analogy, 20 to 40% of all coronary artery stents will show early complete occlusion within 14 days after implan-

Accepted for publication June 26, 1992.
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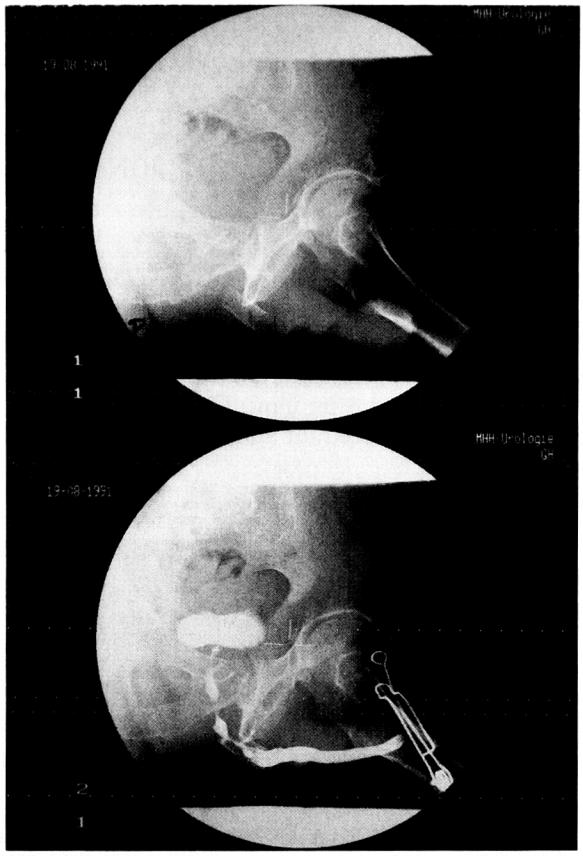

FIG. 2. Retrograde urethrogram 6 weeks after implantation

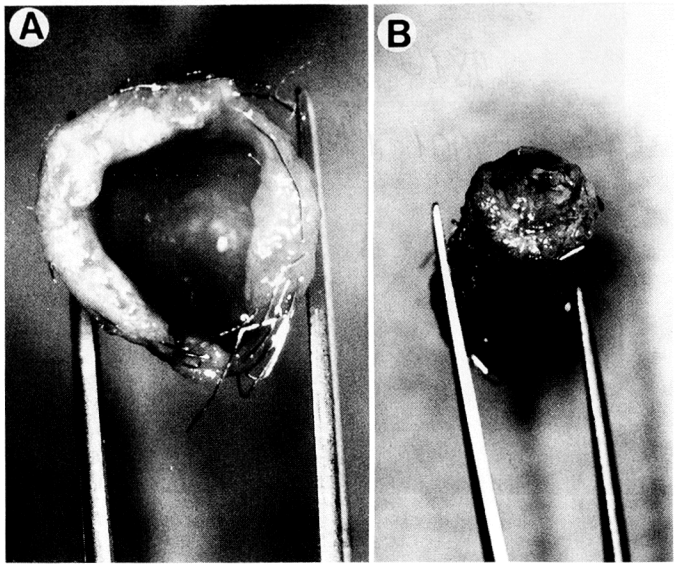

FIG. 3. *A*, obstructed distal end of stent after explantation. *B*, complete obstruction of proximal stent after explantation.

tation, as well as frequent late occlusion. This recurrent stenosis is due to intimal hyperplasia.[8] Therefore, further long-term studies are required for a final assessment of this otherwise promising alternative for recurrent urethral stricture. Our case supports an analogy between urethral and vascular stenting.

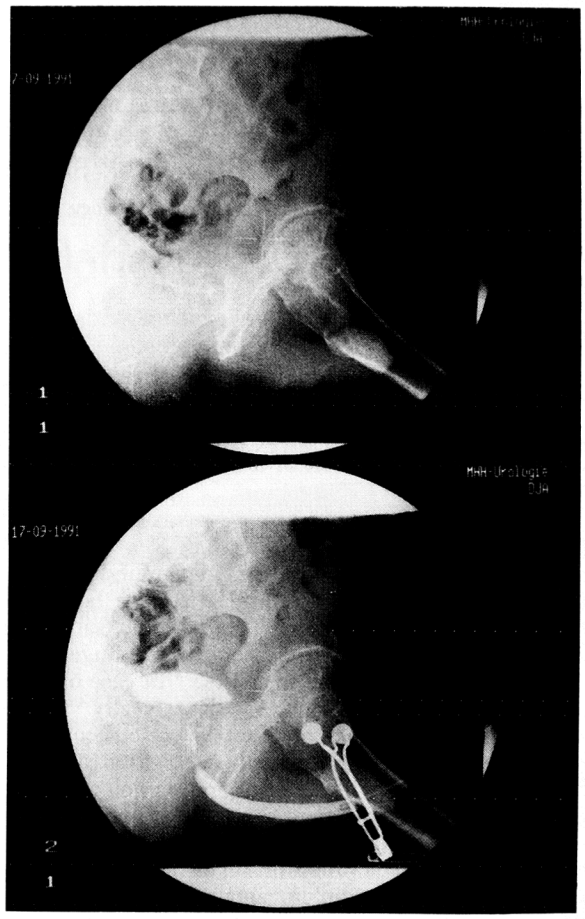

FIG. 4. Retrograde urethrogram after end-to-end anastomosis of urethra.

Due to the aforementioned high incidence of occlusion after coronary artery stenting, we suggest implantation of urethral stents only in the context of careful patient selection and close followup.

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