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Palliative ureteral stent placement is effective in relieving obstructive renal impairment, especially that precedent to malignant spreading, and can take the place of surgical intervention. Furthermore, cutaneous antegrade and/or endoscopic retrograde stenting can be indicated for other pyelo-ureteric operations and prevent their complications, but it has its consequences: We experienced three cases in which stenting had to be repeated because of its obstruction. The stent catheter blockage is discussed.

Key words: Ureteral stent, Complication
stent was functioning, care on hydration and infection was performed to prevent the same inconvenience after reinsertion of the stent.

Case 3.

A 68-year-old man underwent cutaneous colostomy for advanced rectosigmoid cancer three months ago and has since been receiving immunotherapy while in hospital. Acute event of anuria, and fever with chill had obligated him to try catheterization, because he had normal volume of urine till then. Although the stent brought on sufficient outflow of urine, it became obstructed by an unknown cause on the second day. A 4 F whistle tip ureteral catheter used instead of the double pigtail stent, drained well despite annoying flush irrigation of the lumen several times during three weeks of chemotherapy the next effective restenting.

**DISCUSSION**

Since Brown and Harrison reported the facilities of plastic for ureteral catheterism, various kinds of ureteral catheters have been devised and ameliorated to indwell. The ureteral stenting is more reasonable and ideal than surgical diversion in rescuing merely the urinary outflow from the collecting system.

If there is a choice between the stent and surgical diversion, many clinical investigators, nowadays, prefer the former. There are many cases of stenting required for hydronephrosis, especially preceding extrinsic factors of malignant disease, involved in urological patients.

Singh and his associates, however, showed 20% blockage of the stent as a complication in its use. Gerber and Narayana, on the other hand, described two cases of difficulties; stent dysfunction. This is a clinical problem awaiting solution.

Singh et al. did not note the cause of stent blockage in detail, and Gerber could not detect the cause in his two cases.

In two of the cases we experienced, the cause of difficulty was identified as the presence of mucoid materials inside the lower third of the stents, and vesical mucosae became hemorrhagic in both.

In the third case, the patient who had suffered from severe pyelonephritis, maintained urine outflow and physically returned to normal only by stenting, which resulted in flush irrigation onto the whistle tip ureteral catheter several times till replacement.

Only previously reported cases revealed anuria in our series, and we can suggest that they are attributable to some factors of infection to make occlusion respectively. And, we have to recognize that patent stent is confirmed by reflux on cystogram.

Furthermore, some authors have suggested that strikingly severe ureteral reaction to ureteral intubation may occur.

In addition, we have often experienced obstruction by fibrin clots in peritoneal dialysis in which larger multiple holes are provided on the peritoneal catheter than in the ureteral stent. This phenomenon has occurred at the initial stage of dialysis, and subtle peritoneal infection.

On the basis of our experience, most of the causes for encrustations were considered to be blood clots, mucoid materials as exudative protein from upper urinary tract infection and ureteral reaction, and fibrinoids from hemorrhagic cystitis. Our experience indicate that the previously mentioned problems cannot be resolved based on the size and number of holes of the stent.

In predicting results of stent occlusion, reinstillation in a retrograde manner may be avoided in the patient who has severe upper urinary tract infection, and pyeloureteric reconstruction should be used if successful placement is to be achieved.

It would be a clear-cut advantage to employ a long sized silicone ureteral stent with a single pigtail as nephrostomy and ureteral sprinting, which can be flushed out, and changed easily to short double pigtail stent afterwards.

And, irrespective of grade and cause of ureteral obstruction, and complication of the catheter itself, it is, at first, desirable and better to provide merely the
ureteral stent to make the pathway, to avoid permanent-urinary diversion surgically, so far as we recognize. In fact, we experienced many other cases of satisfactory stent placement without any sign of failure.

REFERENCES

2) Brown HP and Harrison JH: The efficacy of plastic ureteral and ureteral catheters for constant drainage. J Urol 66: 83~102, 1951

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