

# ORIGINAL

## Bilharzial Anuria

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### ABSTRACT

In a series of 451 patients affected with bilharzial ureteric strictures, anuria developed in 24 cases (5.3%). All patients were males with a mean age of 35 years. Five of the cases had previous unilateral nephrectomy. Two had middle third ureteric strictures, while all others had lower third strictures. On admission all patients appeared ill and had their blood urea and serum creatinine around 300mg/100 ml and 12.5 mg/100 ml respectively. Nephrostomy was performed in all cases. Following this, one patient died, 3 had complications and 8 out of 19 cases who had bilateral nephrostomy were discovered to have a unilateral functioning kidney. After an average period of two weeks, their general condition was improved and all 23 patients were operated on to rectify their ureteric strictures. Following this, 3 cases developed wound infection and there was no mortality. When they were discharged, all patients had improvement in their renal function. Within one month 2 cases had normal levels of their blood urea and serum creatinine, which remained so over two years follow up. While in all other patients, after an initial improvement in their blood urea and serum creatinine, continuation of these tests showed above normal levels during the period of follow up. It was observed that preliminary percutaneous nephrostomy in anuric bilharzial patients improves renal function significantly. Surgery should always be attempted and long term results depend on the quality of preserved renal tissues.

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Although medical treatment may control the early stages of urinary bilharziasis, it proves ineffective in the presence of established complications<sup>8,9</sup>. This is especially the case when reinfestation is likely to occur. Ureteric strictures are the most common and serious sequelae of the disease. When neglected, progressive deterioration in renal function following obstruction, infection and stone formation is inevitable<sup>5,7</sup>. More serious developments occur when the condition is allowed to proceed to the stage of anuria. Here we report our experience in the surgical management of those patients who developed bilharzial anuria in our series.

### METHODS

In a review of 451 patients with bilharzial ureteric strictures treated over an eight year period from June 1975 to June 1983 in our units at Port Teaching Hospital (Basrah-Iraq) and Amirie and Al Sabah Hospitals (Kuwait), anuria developed in 24 cases (5.3%). All patients were males with an age range between 20-45 years and a mean age of 35 years.

After thorough history and clinical examination, blood and biochemical tests were completed. Plain abdominal films were routinely carried out on all patients and a note was taken of the presence of bladder/ureteric calcification and any associated calculi. During the last few years we have had the advantage of ultrasonographic studies and therefore, some of the cases had their urinary system studied with this device.

When the diagnosis of anuria was established, all patients were put on scheduled I.V. fluids regime, input-output chart and other routine general measures together with regular monitoring of biochemical studies. Following that and within a maximum period



of 1-2 days, all 24 cases had nephrostomy. This was bilateral in 19 patients and unilateral in the other 5 cases. The latter have previously had unilateral nephrectomy for varying reasons. The nephrostomy was percutaneous in 21 patients and it was open (surgical) in the other 3 cases. Following that, regular urine quantitative studies were performed, together with frequent biochemical tests to check the improvement in renal function. Through the nephrostomy tube, an antegrade urography was carried out on all patients to clarify the status of the urinary tract and verify the site of obstruction in the ureter. Although some of the cases had renogram and renal scan studies, this was taken as additional information but did not change the next step in management. When an appropriate time was reached in which the general condition of the patients and their urine and biochemical studies improved significantly, surgical exploration to rectify the ureteric strictures was carried out. Those who had positive urine cultures received pre and postoperative antibiotics accordingly.

## RESULTS

On admission all patients appeared ill and had their blood urea and serum creatinine ranging from 250 - 350 mg/100 ml and 10 - 13.5 mg/100 ml respectively. By plain abdominal films, co-existing ureteric calculi were found to be present in 6 cases (25%). After nephrostomy positive urine culture was found in 10 patients (41.7%). The organisms detected were *E. coli*, *Klebsiella*, *Proteus* and *Pseudomonas*. One patient developed high fever, septicaemia and eventually died. In two cases there was recurrence of the infection and in another case bleeding at the site of nephrostomy occurred. All 3 cases were treated accordingly and their condition stabilised. Eight out of 19 patients who had bilateral nephrostomy were discovered to have unilateral functioning kidneys.

By carrying out an antegrade urography of the 23 patients remaining alive, it was found that 21 had strictures of the lower third of the ureters and the other 2 had their strictures situated in the middle third.

Within 2-3 weeks after nephrostomy the general condition and renal function improved significantly. Therefore, all 23 patients were surgically explored to correct their ureteric strictures. One case had excision of the stricture with end to end anastomosis, another case had excision and replacement with ileal loop and in the other 21 patients (depending on the site and type of their lower third ureteric strictures) some form of ureteroneocystostomy was performed. Following this there was no mortality. However, 3

patients developed wound infection. In some of the cases the nephrostomy tube was used to decompress the kidney after surgical exploration. Within 5-6 days this was removed and all 23 patients when they were discharged within two weeks postoperatively, continued to have clinical and renal function improvement. During follow up and within one month 2 cases showed normal levels of blood urea and serum creatinine which remained stable for up to two years. However, in the other 21 patients, although clinically they improved and there was an initial improvement in their blood urea and serum creatinine, these levels continued to be higher than normal until the patients were unavailable for follow up.

## DISCUSSION

Ureteric strictures have been recognised as biliary complications for many years<sup>3 4 6</sup> and although any part of the ureter can be affected, probably over 80% occur in the pelvic area<sup>5 1 2</sup>. The condition will be more complicated when there are co-existing calculi. In a previous report we found that this was present in 58.2% of our cases<sup>2</sup>. The degree of renal function impairment will therefore depend on the severity of the back pressure effects, the presence of infection and the time when the patient seeks medical advice. As expected, the outcome will be life-threatening when both ureters or one ureter in a single functioning kidney become completely obstructed. This leads to anuria and the state of uraemia. During the last few years and especially after the use of ultrasound became popularised and widely used in this country, many obstructive uropathy cases were subjected to percutaneous nephrostomy. These were routinely performed by our radiologists. This procedure proved to be very useful, safe and gives little discomfort to the patient. It allowed continuous monitoring of the urine quantity and quality which certainly reflects the renal function reserve. By doing an antegrade urography, precise location of the obstruction in that side of the tract can be identified and therefore, proper planning to rectify the strictures can be applied. With regard to the patient whom we lost after the nephrostomy, his death was not directly related to the procedure but he was severely ill and every attempt to save his life was in vain.

## CONCLUSION

**We found that as soon as the diagnosis of anuria was confirmed, an immediate nephrostomy is the answer. Many of these were carried out in a state of emergency. Although the general condition of the patient dramatically improves a few days after the**



nephrostomy, we noticed that a delay of 2-3 weeks after the procedure enables a better recovery of the kidney and the tube can also be used for drainage for a few days after surgical correction. Since we were dealing with life-threatening condition, the findings at renal scan and renogram did not discourage us from correcting the obstruction. As we reported previously, depending on the site and extent of the stricture, many types of operation can be chosen to deal with these strictures<sup>2</sup>. It was clear that the late results will depend on the preserved renal function. From such a large series of 451 patients who were affected with bilharziasis, only 24 cases (5.3%) developed anuria and uraemia. We assume this is probably because Kuwait is not an endemic area and infestation is impossible from inside the country. The incidence of this serious complication might be much higher in endemic areas, for example in Egypt.

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