

A Case of Bilateral Bilharzial Stricture of the Upper Ureter

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Bilharzial infestation of the upper ureter and renal pelvis is rare, and it was therefore considered that a single case should be recorded.

The patient was a European girl, aged 15, first seen in September, 1962, who gave a history of recurrent attacks of pain in the right loin for about five years. These had been infrequent at first, but in the past year or so they had come more often and were more severe. She could not remember having any urinary symptoms, although urinary bilharziasis had been diagnosed elsewhere five or six years ago and she had been treated at that time. Her general health had otherwise been very good and she was physically active at games and other school activities.

Clinical examination revealed no physical signs, and in particular there was no renal tenderness on that occasion. The child looked fit and well.

An intravenous pyelogram (Fig. 1) showed good function in both kidneys, and on the right side there was a minor degree of duplex pelvis, both segments of which, including the calyces, were moderately dilated. Although the ureter was not well defined, the films indicated a constriction at the pelvi-ureteric junction. On

the left side the renal pelvis and calyces were normal, and again there was the appearance of constriction at the pelvi-ureteric junction.

A cystoscopy and retrograde pyelogram were therefore done on 12th September, 1962. The bladder was of normal capacity and the mucosa showed a moderate bilharzial infestation, with many tubercles scattered mainly in the vault. Although it is difficult to assess the activity of bilharziasis by cystoscopic inspection, it did not look active in this case. Both ureteric orifices were normal in site, appearance and function and there was no evidence of bilharziasis in the mucosa surrounding them. Both ureters were catheterised easily, and on the right side the catheter was arrested at 23 cm. The left catheter passed easily to 26 cm. and into the renal pelvis.

Retrograde pyelograms (Fig. 2) showed, on the right side, an irregular, tight stenosis of the upper ureter extending for about 4 cm. down from the pelvi-ureteric junction and through which the catheter would not pass. Only a small quantity of contrast medium could be injected through the stricture, and as a result only the lower segment of the pylon duplex was filled. This confirmed the dilatation seen on I.V.P. The right lower ureter appeared

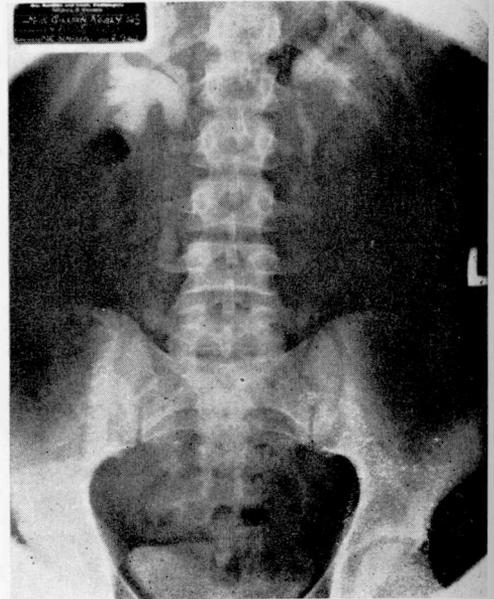


Fig. 1—I.V.P. showing bilateral stricture at pelvi-ureteric junction.

normal and showed no radiological evidence of bilharziasis.

On the left side there was, perhaps, a little pelvic dilatation on complete filling, and just below the pelvi-ureteric junction there was an irregular stenosis of the ureter about 1½ cm. long. Below this the left ureter was normal as far as the brim of the pelvis and the lowest segment was not outlined.

A urine from the cystoscope showed no ova and there was no growth of organisms on culture.

A biopsy of bladder mucosa was reported as showing "a well-marked bilharzial cystitis. There are many ova present, of which the majority are degenerate, and there are a few which appear viable."

TREATMENT

On 14th September the right kidney was exposed through the bed of the twelfth rib. The kidney was normal in size and appearance and it was mobilised to expose the renal pelvis and upper ureter. No aberrant lower polar vessel was found and the ureter immediately

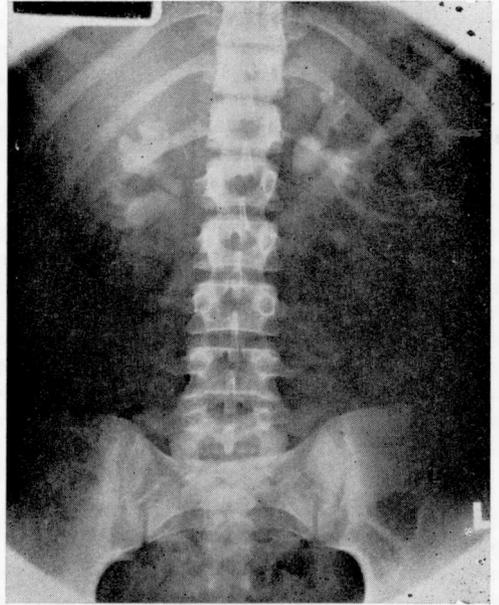


Fig. 3—Post-operative I.V.P.

below the pelvi-ureteric junction was thickened and nodular for a distance of 4 cm. Below this segment the ureter appeared completely normal. The surface of the renal pelvis had a slightly rough, granular appearance closely resembling the "sandy patch" lesion of the bilharzial bladder.

It was obviously essential to remove the stenosed segment of ureter and, after estimating that sufficient mobility for anastomosis could be obtained, this was done and continuity re-established by an Anderson-Hynes anastomosis of ureter to renal pelvis. No ureteric splint or nephrostomy drainage was used. The kidney was fixed in position by a suture to quadratus muscle fascia and the wound was closed with a latex tube drain.

Post-operative progress was uneventful; there was no urine leak from the wound, which healed quickly, and the patient left hospital on 30th September with normal micturition and no discomfort other than the usual slightly tender scar.

In the short follow-up period since then she has remained well, and an I.V.P. on 10th December (Fig. 3) showed that while the renal pelvis and calyces had not yet become normal, there was some reduction of the dilatation and good function.

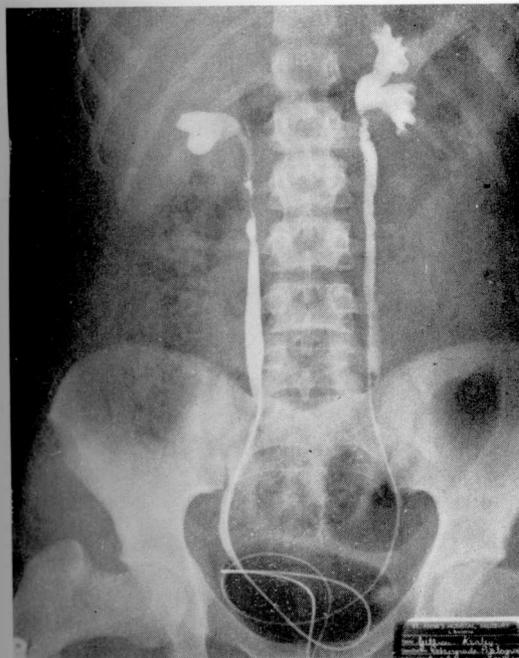


Fig. 2—Retrograde pyelograms, showing lesions at pelvi-ureteric junctions and normal ureters below.

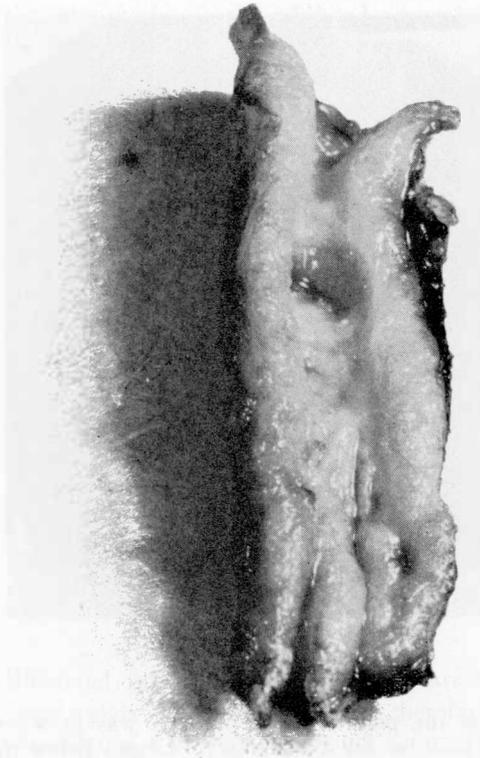


Fig. 4—Longitudinal section of stricture of bilharzial ureter immediately below pelvi-ureteric junction.

The specimen removed at operation is seen in Figs. 4 and 5 and the pathological report on it is as follows: "Segment of upper ureter one inch long with thickening towards one end with stenosis. Longitudinal section shows there to be a chronic bilharzial ureteritis with marked fibrosis. The ova are degenerate and many are calcified."

DISCUSSION

This case illustrates an unusual site for bilharzial involvement of the ureter and is particularly interesting in that the condition affects the upper ends of both ureters without demonstrable lesions in the middle and lower ureters. In his monograph on schistosomiasis Gelfand (1950) discusses the distribution of ureteric lesions, and found that when the upper third is affected it is usually a direct extension along the wall of the ureter from below, i.e., with demonstrable lesions along the whole length of the ureter. In this case one can only say there is no radiological evidence of involvement of the middle and lower ureters, in contrast with the gross changes in the upper third, and at operation the ureter below the lesion appeared normal so far as it could be seen in this exposure.

Makar (1948) described the mode of infection of the ureters as being, on the right side, through branches from the ileocaecal radicles

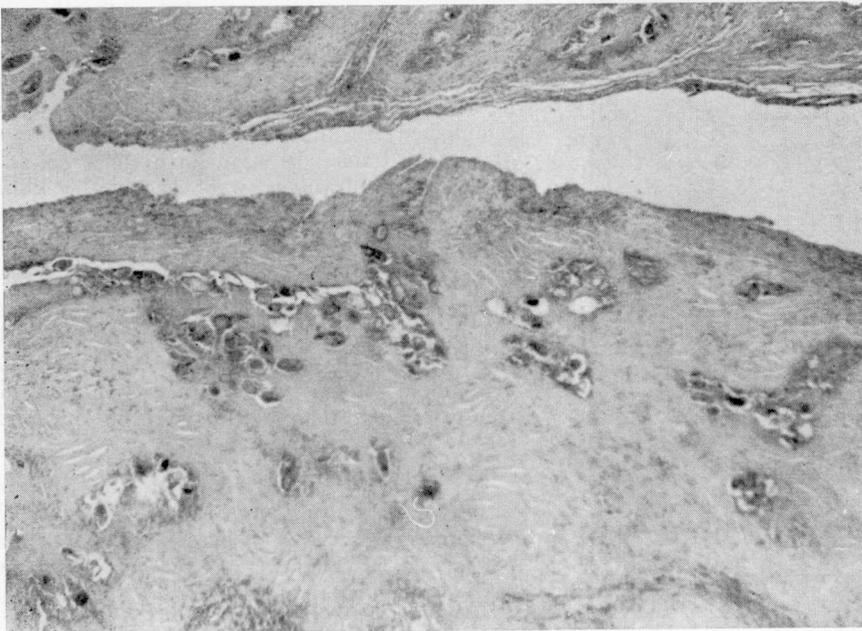


Fig. 5—Section shows loss of mucosa with dense fibrosis of ureteric wall and numerous degenerate and calcified bilharzia ova.

of the superior mesenteric vein to the right ureter, and on the left side through an anastomosis between branches of the inferior mesenteric vein and the veins of the left ureter. He stated that these anastomoses lay at the level of the third and fourth lumbar vertebrae and, in addition, he described communications between the portal and systemic systems in the plexus of veins overlying the lowest two to three inches of the pelvic ureters. However, he does not mention a possible blood-borne route to the upper ureter only. In this case there is, presumably, an unusual anastomosis between the vessels of the upper ureter and the portal system, or possibly communications at this level between the ureteric and ovarian veins.

The nature of the ureteric lesion is also of interest. It is predominantly a fibrosis and thickening of the ureteric wall with narrowing and distortion of the lumen. There is dilatation of the renal pelvis and calyces above the lesion, presumably due to obstruction, but no dilatation of the affected ureter itself. As Gelfand points out, it is commoner to find the affected segment of ureter dilated as a result of destruction of its muscular wall, and of course both dilatation and stenosis can occur in different segments of the same ureter.

At present there have been no symptoms on the left side, but it seems likely that progressive fibrosis at the site of involvement below the pelvi-ureteric junction will sooner or later begin to cause pelvic distension and pain, so that surgical intervention will also be required on this side.

REFERENCES

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Acknowledgments

I wish to thank Dr. G. V. Blaine for the pathological reports and Drs. Burrows and Smith for the intravenous pyelograms.
