Medical Memorandum

A Case of Renal Moniliasis

Recent literature indicates that the successful use of antibiotics against bacterial infections may provide conditions in which the normal commensals, particularly yeasts, become dangerously pathogenic. Whether this is due to direct stimulation or to the eradication of competitors for sustenance is doubtful, but cases have been described of septicaemia with candida in metastatic abscesses in the brain and renal cortex and of fatal pulmonary moniliasis. All of these followed antibiotic treatment for bacterial infections.

In the urinary tract, monilial infection of the bladder gives rise to cystoscopic appearances resembling those of oral thrush with a white curdy membrane (Sauer and Metzner, 1948), but we have been able to find only one paper (Albers, 1953) describing moniliasis of the renal pelvis. Albers reported two cases of unilateral monilial infections of the renal pelvis. Both followed antibiotic treatment of bacterial infection, one associated with calculus and the other following renal colic. In both cases nephrectomy was performed, but this did not effect a complete cure in the second case, which nevertheless became symptom-free.

It is interesting to note that the post-nephrectomy pyuria of the second case not only did not respond to sulphonamides but the drugs seemed to provoke a recrudescence of monilial growth. One of these cases had passed a whitish membrane loaded with candida before operation. In both cases the removed kidneys showed pyelonephritis with leucoplakia in the pelvis.

CASE REPORT

The patient, aged 51, an active wife of a restaurateur, was rather obese. In 1952, having had right renal pain for nine years, she was referred for surgical opinion. An intravenous pyelogram showed a silent right kidney containing calcified shadows; cystoscopy revealed a few tuberculous ulcers in the bladder, and tubercle bacilli were found in the urine. The left kidney was normal. After removal of the right kidney, which was disorganized by tuberculous disease, streptomycin and isoniazid produced a satisfactory result. The bladder became normal, and at no time since have any tubercle bacilli been found in spite of repeated culture and inoculation of guinea-pigs.

After three months at a sanatorium her health in general recovered fully and remained good. She did, however, complain of slight renal pain on the left, but the urine remained sterile and free from pus. An intravenous pyelogram showed rather poor concentration, but the outlines of the pelvis and calices appeared normal. There was some stress incontinence and this was treated by a gynaecologist in May, 1955.

In March, 1956, she sought advice after having become seriously ill over some weeks with left renal pain, low-grade pyrexia, general malaise, and vomiting. The urine contained some pus but was sterile. An intravenous pyelogram still did not concentrate well, so a retrograde pyelogram was carried out. This showed some rather curious filling defects in the pelvis and major calices which at the time were attributed to the presence of air or possibly blood clot. Although a clinical diagnosis of renal tuberculosis was made and appropriate treatment (streptomycin and isoniazid) initiated, no tubercle bacilli were found and symptoms abated. Convalescence was slow.

Three months later there was a recurrence. A catheter specimen then contained pus cells and culture yielded a mixed growth of *Escherichia coli* and candida-like organisms. The coliform organisms were found to be sensitive to oxytetracycline, and this drug was accordingly prescribed; she had provisionally been given chloramphenicol, which was

then stopped. Again symptoms receded for a short while, to recur a fortnight later when a catheter specimen produced a pure growth of candida-like organisms. Mycostatin ("nystatin") was then prescribed at 1,000,000 units thrice daily. This rapidly controlled the symptoms but made little difference to the bacteriological findings. In addition, she again suffered increasingly from vomiting, so that she was readmitted to hospital (October 15). She then began to show signs of renal insufficiency: blood urea had risen from 30 to 44 mg./100 ml., and was later to rise to 63 and 75 mg./100 ml. The bladder was normal on cystoscopy, but urine from the left ureter was opalescent and contained small particles. Large numbers of candida-like organisms were found in it, and another retrograde pyelogram showed the same filling defects as before. It seemed likely that this filling defect was due to a "whitish membrane loaded with candida" similar to that passed by Albers's patient.

Attempts were made to wash out the renal pelvis, but with no success, and a little gentian violet was injected. This was a rather unfortunate procedure, as it made her quite ill for a few days, and a repeated straight x-ray film showed definite calcification of the "filling defect" in the renal pelvis. Pyelotomy was then decided upon. The pelvis was opened with some difficulty owing to the hypertrophy and perinephritis. The "calculi" consisted of a soft whitish mud. As much as possible was removed and the pelvis washed out. This mud was found to consist of a structureless debris, some calcareous deposits, and vast numbers of candida. The patient was not much upset by the operation, and her urinary output remained satisfactory.

A few days later the pelvis was washed out again with solution G, a solution of magnesium citrate (Kayser's solution). This procedure was unfortunate, too, as it apparently resulted in blockage of the ureter by some of the debris. Happily her urinary output was unimpeded by this, as she developed a leak through the lumbar incision. Some days later the ureter was easily catheterized and the pelvis washed out with solution G. This was repeated several times with solution G and 1:10,000 merthiolate, and throughout the urinary output was maintained either through the lumbar wound or per vias naturales, and eventually the wound healed completely. Convalescence proceeded slowly, mainly under cover of a prolonged course of mycostatin. The blood urea level fell gradually to 45 mg./100 ml. and later to 39 mg./100 ml. On January 8, 1957, she passed a small "stone" consisting chiefly of protein with a small amount of ammonium urate: no nucleus and no candida.

At the time of writing she had only minimal symptoms, and a catheter specimen showed a few pus cells and *Staphylococcus albus* only. An intravenous pyelogram showed a filling defect in the lower half of the pelvis only and none in the calices. Concentration was good. No further treatment was contemplated at the time unless the symptoms underwent exacerbation.

A culture of the urine was sent to Dr. C. F. Barwell, of the London Hospital, who agreed that the organisms belonged to the genus *Candida*, but said that they were not *C. albicans*.

It is suggested that the finding of candida in infected urine should lead to the administration of mycostatin as well as the antibiotic appropriate to the bacterial infection.

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