A CASE OF SUPPURATIVE COLINEPHRITIS.

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E. C., female, age 29, was admitted to University College Hospital on May 15, 1914. Ten days previously she had been suddenly seized with frequency of micturition, and scalding on micturition; the frequency was half-hourly, day and night, and got worse. Three days after the commencement of the frequency she developed a pain in the right loin, and the same night when going to bed had a shivering fit. The pain had persisted and had been attributed to pleurisy. There had been no hæmaturia. She had wasted considerably. Her last period was two weeks before admission. Four years before, when being treated for her chest in a sanatorium, she had a sudden attack of pain in the right side, shivering, and frequency of micturition with scalding; after two weeks she was well enough to discharge herself, and convalesced gradually afterwards; she regarded this illness as similar to, but slighter than, that for which she applied for treatment. She had been married six months, and had had a white vaginal discharge for three years, which had not altered since marriage. Apart from the two illnesses stated she had never had any urinary trouble.

On Admission.—The temperature was 105°, pulse 112, and respiration 24. The tongue was dry, and there was a patch of herpes on the side of the nose. The whole right side of the abdomen was rigid and tender, the tenderness extending slightly over to the left side. The right kidney was easily palpable, enlarged, and very tender. Urine was turbid with pus, acid, had a specific gravity of 1015, and gave pure *Bacillus coli* on cultivating.

The patient was anaesthetized with ether, and a cystoscopic examination made before commencing the operation. The bladder rapidly washed clear and easily tolerated a 300 c.c. distention. The whole interior of the bladder was deeply injected; the injection was more marked on the base; the mucous membrane was not œdematous. On the base, extending backwards from the urethral opening, was a thin layer of white membrane closely attached to the mucous membrane; nowhere did this membrane exhibit partially detached shreds, and the pale yellow tinge commonly seen in the muco-pus of cystitis was absent. Posteriorly, the membrane had a sharp irregular edge; it extended further back on the left than on the right side, but did not anywhere reach the interureteric bar. The ureteric orifices were normal except for involvement in the general redness. Two clear effluxes were seen from the left side and none from the right. A catheter was passed up the left ureter, and about 3 c.c. of urine came away in ten minutes, after which the flow ceased.

The right kidney was then exposed through an oblique lumbar incision. There was no œdema of the perirenal fat, and the kidney was not unduly adherent, so it was easily stripped from its bed and delivered from the wound. The kidney was enlarged to about one and a half times its normal size; its

surface was purple, and groups of small yellow dots were seen through the capsule. Nephrectomy was performed in the usual way and the wound drained. A culture from one of the subcapsular abscesses gave pure *Bacillus coli*.

May 16, temperature rose to 99·6°.

May 17, temperature rose to 99·4°. A catheter specimen of the urine contained pus and *Bacillus coli*, but no blood or casts.

There was a daily rise of temperature up to 99·4–100° till May 27, after which there was no fever.

June 7. The wound was completely healed. There was no frequency of micturition. The urine was clear, and contained numerous small specks; a culture from it grew pure *Bacillus coli*.

Cystoscopy with a 300 c.c. distention showed slight injection of the whole interior of the bladder, which was not more marked on the base. There was no membrane on the base. The left orifice was slightly more patent than usual, but closed completely on contraction. It contracted actively, but no efflux was seen. The right orifice did not contract.

The patient was discharged on June 9, 1914.

On splitting the removed kidney before it was hardened, dark-coloured areas stood out from the surface of the section. These areas consisted of yellow streaks surrounded by a deep-red zone; the streaks extended through the kidney from the papillæ to the surface, where they appeared as the yellow dots seen at the operation. The areas were more or less wedge-shaped, with their bases at the surface of the cortex; they varied very greatly in size, the largest being about 2½ centimetres in diameter. The kidney substance between the areas appeared normal. The mucous membrane of the ureter and calices appeared normal.

Sections of the kidney stained with hæmatoxylin and orange showed that large parts of it were normal. On approaching one of the streaks seen on macroscopical examination, the vessels were dilated and the tubules became filled with conglutina containing a few cells, chiefly polynuclears; there was some extravasation of blood into the interstitial tissue. Further inwards the interstitial tissue became densely infiltrated with round polynuclear cells and larger irregular mononuclear cells, and the casts in the

FIG. 150.—A slightly oblique, vertical section of the kidney after hardening in Gore's fluid. Before hardening the colours were deeper.

tubules became richer in cells. Further still, the interstitial infiltrate had completely replaced all the normal kidney structure. Areas of definite necrosis were small and infrequent. The glomeruli appeared to survive to a later stage than the tubules; coagulum in the glomerular spaces with a few cells in it was seen, but not to the extent it occurred in the tubules. Desquamation of the tubular or glomerular epithelium appeared to be absent. Sections of the ureter at the point of division, and of the renal calices, showed no signs of inflammation. A few groups of coliform bacilli could be seen between the cells in the infiltrated areas in carbol-thionin sections; but they were not numerous.

Very few cases of acute hæmatogenous pyelonephritis have been published in England, though a fair number of American cases are on record. The special features of interest in the present case are the definite history of a previous acute attack of a less severe nature, and the onset of the acute attack with bladder symptoms. The absence of œdema of the perirenal fat appears exceptional.

In conclusion, I wish to thank Mr. Raymond Johnson for permitting me to publish the case.