condition. The lesions in the area where the eruption was confluent showed some tendency to ulcerate, but ultimately complete healing took place and the patient was discharged on July 30th without any complications having occurred. There also appeared to be some diminution in the size of the enlarged glands in the axillae at the time of her discharge.

As far as I have been able to ascertain from a fairly extensive investigation of the literature, this patient appears to be the oldest one in whom varicella has occurred, though doubtless older persons have been attacked without their histories having been reported.

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THE DESIGN OF DIRECT PEDICLE FLAPS

BY

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The purpose of this communication is to describe a simple technique for the accurate design and transference of a full-thickness pedicled flap from one part of a patient to another without danger to the blood supply. The use of the direct flap method instead of the tube pedicle type of graft is to be preferred wherever possible, because it reduces the number of essential operations to two, with an interval of two to three weeks, thus shortening the period of stay in hospital very considerably.

The principle of the method is to imagine the operation completed and to reverse the steps of the procedure of transferring the flap, using as a model an exact jaconet or linen pattern of the defect to be covered. It is thus possible to arrive with speed and accuracy at the correct topographical origin of the flap to be cut from the donor area. Suppose that there is a rectangular area over the posterior surface of the elbow-joint to be covered by a direct flap taken from the side of the abdomen. After the usual pre-operative preparation of the patient and sterilization of the pattern, the elbow is flexed and approximated to the side, bringing the defect as close as possible to the donor area. The pattern is now fitted accurately to the defect. The assistant holds the lateral edge carefully in position while the medial edge is turned over on to the abdominal skin and held by the surgeon in the position which it naturally takes, so as to leave the intervening portion comfortably slack. The lateral edge of the pattern is then released and the arm moved away from the side, while the surgeon smooths the remainder of the pattern over the abdomen. The skin outlined by the pattern is marked by scratching, and dissected up to form a flap, the attached side of the flap on the abdomen corresponding to the edge of the pattern first shifted to the body. It is necessary in some situations to allow enough extra at the base of the pedicle to ensure a sufficiently large area of the flap being sutured in position. After two to three weeks the attached end of the flap is divided and sutured into position on the arm. The line of division can be readily marked out by placing the pattern in position over it.

The advantage of the method will be realized in direct transfers from limb to limb, such as calf or ankle to opposite leg or thigh. It will be found a great comfort to know that the flap will fit its new bed accurately without it having to be pulled into place by overstretching some portions or inserting stitches, which exert considerable tension. Gangrene and removal of stitches are thus largely avoided.

The same principle of reversing the operation is applicable in making the design for all tubed pedicle transfers, but is not quite so essential owing to the great mobility and vitality of these flaps.

A PATIENT WITH FOUR URETERS

BY

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(With Special Plate)

A double ureter on one side is among the more common abnormalities of the urinary tract, and is not infrequently associated with a hydro-ureter or other congenital defect on the opposite side. The two ureters arise from separate pelves and commonly fuse at some part of their course, being seldom completely separate for their entire length. Most often they join shortly above the bladder, which they enter by a common orifice. The union may take place soon after leaving the kidney, a single ureter continuing to the bladder, though it may again bifurcate and enter the bladder by two openings.

Two ureters on both sides, each entirely separate through its whole length, with four separate openings into the bladder, is a condition so rare as to make such a case worth recording. There is no example of this condition in the museum of the Royal College of Surgeons, or in the museum at the Hospital for Sick Children, Great Ormond Street.

HISTORY OF THE CASE

A girl, aged 8 years and 11 months, had a first attack of pyelitis in June, 1928, lasting three or four weeks. She had similar attacks each year until August, 1931. Since then attacks have been more frequent. The main features of the illness were fever and increased frequency of micturition; there was no pain.

The patient is rather pale, but of normal development. There is no abdominal tenderness. The lower pole of the left kidney is palpable.

SPECIAL INVESTIGATIONS

Blood urea was 29 mg. per 100 c.cm. Urea concentration: before urea, 2.15; first hour, 2.55; second hour, 2.40; third hour, 1.40. Examination of a catheter specimen of urine showed: specific gravity, 1020; turbid; alkaline; fair number of leucocytes and organisms, an occasional bladder cell, and a few amorphous phosphates. Culture of the specimen resulted in a profuse growth of *B. coli*.

X-ray photographs (see Plate) taken after the injection of 13 c.cm. of uroselectan reveal the presence of two pelves to each kidney, opening into separate ureters. The lower pelvis on the right side is slightly dilated, but the calyces appear normal. The other three pelves are not dilated. The two ureters on the right side can be traced separately as far as the bladder. On the left side the shadows overlap, and only a single shadow can be traced to the bladder.

On cystoscopic examination (five-ounce distension) the following points were noticed: Bladder surface was normal. Two gaping ureters were seen on right side at same level. On the left side two openings were seen, the outer one small and retracted at a slightly higher level than the median opening, which appeared as a narrow slit. Indigo-carmin (1 c.cm.) was given intravenously, and showed in good colour in nine minutes, with a strong efflux from the outer ureter

on the right side and the median opening on the left. No urine was seen coming from the median opening on the right side or from the outer orifice on the left. Catheters were passed without difficulty up all four ureters.

DIFFERENTIAL URINE ANALYSIS

Catheter Specimens from Right Kidney

Right Outer Ureter.—Urine somewhat blood-stained; specific gravity, 1012; acid; urea, 1.16 per cent. White blood cells +, red blood cells ++. Gram-negative bacilli and a few streptococci present. Culture yielded a heavy growth of *B. coli*.

Right Median Ureter.—Urine slightly turbid; acid; urea, 1.63 per cent. White blood cells +, red cells ++. Gram-negative bacilli and a few streptococci present. Culture yielded heavy growth of *B. coli*.

Catheter Specimens from Left Kidney

Left Outer Ureter.—Urine turbid and very blood-stained; faintly acid; specific gravity, 1010; urea, 0.70 per cent. Very few white blood cells, and many red cells. No organisms seen. On culture there was a heavy growth of *B. coli*.

Left Median Ureter.—Urine turbid; amphoteric; specific gravity, 1006; urea, 0.43 per cent. Many white cells but very few red cells present. There were some Gram-negative bacilli. On culture there was a heavy growth of *B. coli*.

The urine from all four catheters correspond closely, all being heavily infected and showing a low urea content, the right side being a little the better.

RESULTS OF TREATMENT

As the patient did not appear to benefit under the usual urinary antiseptics, a trial was made of the ketogenic treatment. At first the organisms per cubic centimetre of urine diminished from being uncountable to about 1,000 per c.cm. at the end of a week, but at the end of a fortnight a sudden increase took place, and the daily count varied from 15,300 per c.cm. to approximately 100,000,000,000 per c.cm. After about four weeks, therefore, the diet was discontinued, as it was clearly doing no good.

During the ketogenic treatment one or two evening rises of temperature occurred, associated with some headache, otherwise the general condition of the patient seemed unaffected. She was subsequently discharged to the country branch of the hospital at Tadworth, where her general health improved considerably, though the condition of the urine remained unchanged.

MONILETHRIX*

A GROUP OF TWENTY-TWO CASES

BY

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(With Special Plate)

In emphasizing the infrequent incidence of monilethrix O'Donovan¹ cites the experience of J. Schutz, who, during seventeen years' hospital practice in Frankfort, saw only one case of this affection. Up to the present time I am unaware of ever having encountered the condition save in the group, including five generations, which forms the subject of this communication.

THE SON

Early in May of this year a boy, aged 5½ years, was sent to me as a possible sufferer from tinea tonsurans. His hair, however, had not been examined microscopically. At first sight the scalp posteriorly certainly suggested ringworm, but the furfuraceous scaling which so often accompanies that

disease was not in evidence. About the occipital protuberance, which was sparsely covered, and suboccipital region stumps of hairs—some of which were twisted—and short hairs were seen, while keratosis pilaris was well marked on the nape (Fig. 1 on Plate) and very slightly present on arms and forearms. His father, who accompanied him, strenuously asserted it was not ringworm, and said that he himself was similarly affected, as was his small daughter, aged 7½ years, who was with them. Microscopical examination of hairs from the boy's scalp revealed the pathognomonic features of monilethrix. The boy has to have his hair cut in front only. The macroscopical appearance—stumps of hairs, some of which were twisted, and short hairs, distributed in a patchy manner with keratosis pilaris roughly simulating a mycelial sheath—might quite well have led a busy physician to a hasty diagnosis of tinea tonsurans.

HIS FATHER

Some weeks later, after several unsuccessful attempts owing to the father's occupation as a miner, I saw the three subjects for further investigation. Microscopical examination of the father's scalp hairs showed profusion of nodes in the occipital ones. Frontally, where the hair was longer, they appeared to be more elongated. Axillary hair showed some irregular variation in diameter. Hair from the arm exhibited nodes, and in one hair from that region the medulla was broken up into distinct islets, while at one area between two islets some narrowing of the capillary calibre was suggested, raising the question of whether the malformation might originate in the medulla. Hair from the pubis showed definite nodes. No nodes were detected in lanugo hairs from the trunk. The affection in this subject was situated, in so far as short hairs are concerned, mainly posteriorly and on the vertex. He stated that the hair anteriorly, although much longer (two inches at least) tended to break, that he had only once had it cut—while recuperating after a war wound. At the time of examination infiltrated erythematous elevations were noticed on the nape, which he stated were the result of midge bites. As pediculosis capitis was detected, however, it is quite possible that they were due to the latter condition, and were urticarial in nature. No keratosis pilaris was present except on the thighs. With some hesitation a biopsy was suggested, to which he most readily and generously agreed.

THE DAUGHTER

On his daughter's scalp short hairs occurred mainly in the suboccipital and extreme frontal regions; some of the hairs were twisted and were very easily broken. The pigmentation in some parts appeared to concentrate half nodally and half internodally. Keratosis pilaris was profuse on the nape and occiput, and also present on the thighs and legs, and very slightly on the arms and forearms. Pediculosis capitis was noticed, as was abortive impetigo contagiosa on the face. This was also evident in the son.

FAMILY HISTORY

The father told me he had other relatives similarly affected. Their family physician kindly assembled them, and, accompanied by my house-physician, I visited them, removing hairs from the scalps of fourteen other persons, varying in age from 1½ to 77 years. Microscopical examination of the scalp showed pathognomonic hairs in every case. The septuagenarian—the grandfather of the boy sent for diagnosis—said that both his father and grandfather had been similarly affected. His alopecia was almost absolute. He wore a wig. He was the only one of seventeen children to be affected. His father, who had the disease, had never spoken of a sister or brother, and was probably an only child. His grandfather also had the disease; here again there is a doubt as to whether he had brothers or sisters. He himself has had fifteen children—nine boys and six girls. At birth they all had good heads of hair. Three of the daughters died in infancy, aged respectively 12 months, 18 months, and 3 years—all with good heads of hair. Five out of the nine boys developed the condition, and also one out of the

* Read in the Section of Dermatology at the Centenary Meeting of the British Medical Association, London, 1932.

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FIG. 1.—Pyelogram after intravenous injection of uroselectan. On right side two pelves and two ureters show clearly; the lower pelvis is dilated. On left side the two ureters can only be traced for part of their course.

FIG. 2.—Opaque catheters in position, showing four separate ureters.

OSWALD ADDISON: A PATIENT WITH FOUR URETERS

FIG. 3.—Catheters passed up median ureters, and 5 c.cm. sodium iodide injected in each side. The upper pelves only are filled, and do not show any communication with the lower pelves.

J. GOODWIN TOMKINSON: MONILETHRIX

FIG. 1.—Monilethrix, in son, aged 5½ years, sent for microscopical examination; suspected of having contracted tinea tonsurans. Keratosis pilaris is also seen.

FIG. 2.—Photomicrograph: monilethrix. Section of skin from scalp of father of boy aged 5½ years, showing three nodes within the hair follicle.