and the broad and friable pedicle ligated *en masse* and without finesse. An attempt at pre-operative blood transfusion had failed owing to absence of accessible veins, the last of these having been thrombosed by the perabrodil for the pyelogram. At the end of the operation collapse was extreme, being at one stage hardly distinguishable from death, the pulse being imperceptible, the pallor absolute, and the pupils widely dilated. Donor's blood stored overnight was pumped into the internal malleolar vein, gravity being quite insufficient to force the fluid into the collapsed vessels.

On the patient's return to bed her condition remained critical. Enough saline and glucose was administered by the subcutaneous route to enable all fluid by the mouth to be withheld till after forty-eight hours, and thus the additional menace of distension and sickness was completely avoided. Nursing taxed to the uttermost the skill of those engaged. The bed remained soaked with the whole output of the right kidney augmented by the stinking sero-sanguineous fluid from the left wound, which cast off alarming masses of slough, and showed for the first week no healing action in spite of the institution of Carrel-Dakin tubes.

In the course of the next five weeks matters gradually improved; the wound became healthier, the temperature, which had had a daily swing up to 101° or 102° F., dropped to normal, and on August 24 the patient was discharged from hospital, although a deep sinus still persisted on the left side. All the urine was passing to the bladder, and the right wound had healed. During the whole of the period of stress the right kidney had never faltered, producing a copious supply of urine, which, when it could be measured, proved to be some 75 oz. daily with a normal consumption of fluid.

Convalescence was fairly rapid, the left wound healing firmly in spite of the loose emergency sewing and the massive sloughs. A small sinus persisted, but is now shallow and should soon heal. Careful administration of mandelates cleared the right kidney of its remaining infection. The calculi consisted of calcium and triple phosphates with a trace of calcium carbonate. Diet was directed to maintaining acidity so as to prevent recurrence.

At the time of writing, approximately two years since the operations were done, the condition is as follows. The patient is robust, active, and able to undertake all the social duties, rail, steamer, and motor travelling of a normal woman. From these things she had been debarred during the period of her pre-operative invalidism, which extended over rather more than nine years. She eats what she likes, and the urine has no tendency to depart from an acid reaction, though she takes a daily dose of acid sodium phosphate or a tablet of ammonium chloride to make sure. The specific gravity of the urine, which is sterile, rarely exceeds 1012, though it has on one or two occasions gone as high as 1015. The increased quantity necessitated by this dilution causes her to rise in the early morning hours to empty the bladder. There is no unpleasant diurnal frequency or irritation. The absence of veins precludes a pyelogram and function tests depending on the extraction of venous blood, but the urea concentration after taking 15 grammes of urea reached the surprising figure of 2.4 per cent. at the third hour. The blood pressure has dropped from 164/90 before the operation to 130/80.

Discussion

Reflecting on the problem involved, one or two points seem to call for emphasis. In the first place, careful thought should be given in cases of bilateral calculus to the possibility of one kidney being pyonephrotic and useless, in which case it can, with due precautions, be removed and the disability be in large part eliminated. Secondly, there is no doubt that the percaine spinal anaesthetic employed in the second operation put the minimum burden on the remaining part of the right kidney, and by

reducing the operative difficulties allowed the left kidney to be removed before the patient succumbed. Thirdly, some device for forcing the blood into the veins must be contemplated when, as in this case, gravity is inadequate for the purpose. Finally, the tempting procedure of two-stage nephrectomy does not seem to be appropriate in such cases, with its prospect of prolonged suppuration and the probable unbearable strain it would exert on the remaining portion of a mutilated and infected kidney on the other side. In spite of perinephric abscesses and the difficult operation which must always be expected, the procedure of nephrectomy, once embarked upon, must be carried through to the end.

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ALTERNATING HEMIPARETIC MIGRAINE SYNDROME

BY

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The current literature and the textbooks of neurology, both recent and of the past, relate many unusual symptoms occurring as part of a migraine syndrome. It is only rarely that these symptoms are combined in the manner observed in the mother and daughter whose cases are here recorded.

The Mother's Case

There is no history of nervous or mental disorder, migraine, epilepsy, asthma, or allergic disorder in any member of the mother's family. She had severe migraine headaches, starting at 13 years of age. Menarche did not occur until 16 years of age. During the years following her menses seemed to have little association with the severe migraine syndrome. Her headaches were infrequent, at times being absent for a period of one to two years. Her symptoms usually followed a definite order of progression. Prodromes in the nature of general malaise and chilliness occurred, which might come on the day before an attack or only a brief period before. The attack itself was ushered in by a feeling of numbness and tingling of one side of the face and tongue, rapidly spreading to involve the arm and leg of that side, and was accompanied by marked weakness and loss of power in the arm and leg, although never a complete paralysis. Her speech was thick and dysarthric, and there was difficulty in finding words and in expressing herself. Following this, she experienced flashes of light, then blurred vision, and finally a hemianopsia involving the visual field opposite to the severe bursting headache which then appeared over or behind the eye on the side opposite to her other symptoms. Nausea and vomiting followed the headache, which in different attacks occurred first on one side of the head and then the other, and was always on the side opposite to the hemiparesis, sensory, and visual symptoms. She never lost consciousness, nor did she have any convulsive attack, although on one occasion during her first pregnancy (not with the daughter) she became confused and delirious, and had no memory for the migrainous episode other than the onset. No medication ever seemed to relieve or abort the attacks, which lasted from one to two days. During the time she was pregnant with the daughter she had no migrainous attacks. Three years ago, at the age of 46, the mother was treated with radium for a uterine carcinoma. Her menses stopped. She has had no migraine headaches since, and is in fairly good health at the present time.

The Daughter's Case

The daughter, aged 23, has been under observation at the Jordanburn Nerve Hospital, Edinburgh. She gives a history (corroborated by her mother) of severe unilateral headaches, having their onset when she was 13 years of age, occurring

about the time of the onset of menarche, although it is thought that her menses followed her first migraine attack. The daughter was aware of the severe headaches experienced by the mother before the onset of her own attacks, but both mother and daughter maintain that the daughter knew nothing of the symptoms experienced by the mother, and was not aware that the headache was always on one side of the head and the weakness, sensory, and visual disturbance on the side opposite to that of the headache. The daughter's attacks are very similar to those of her mother except for the severe delirium, confusion, and amnesia which she often has. The daughter has noticed that a severe migrainous headache seems to be precipitated whenever her menstrual period is irregular and runs over the usual twenty-eight-day interval. She is also sensitive to fats and fatty foods, and reacts to them with nausea and vomiting, although she has had no migraine headaches which resulted directly from such foods.

The daughter states that she usually can foretell the onset of a migrainous attack, as she experiences a general feeling of malaise, which not infrequently follows a period when she feels exceptionally well. This malaise is of an indefinite character, at times accompanied by a feeling of chilliness and at others by a feeling of languor and lassitude. Marital and domestic difficulties at the present time seem to be of importance in producing emotional turmoil, which may act as a precipitating factor. These emotional difficulties cannot be considered aetiological, as they were not present during the first seven years following the onset of the migraine attacks, and, from a careful review of psychosexual and emotional factors of childhood, no emotionally toned associations were discovered which seemed to have a bearing on the migraine syndrome.

SYMPTOMS

Usually within a few hours of the onset of the above-mentioned prodromes she experiences numbness and tingling, which may start either in the face or tongue, or as a tingling sensation running down the nose. As the first symptom there may be numbness and tingling of the fingers and hand of the same side. This numbness and tingling may spread to involve the lower leg and foot of the same side, or may involve the hand and fingers chiefly and affect the leg only as a marked weakness. The weakness in the hand or leg never amounts to a complete paralysis, although she is unable to walk or to hold articles in the hand on the side involved. This hemiparesis may persist during the entire attack, though as a rule the severity of the hemiparesis has been found by the patient to be a good indicator of the intensity of the headache which is to follow. At times the hemiparesis seems to lessen after the onset of headache. Coincident with the hemiparesis and peripheral sensory symptoms she notices a feeling of thickness and clumsiness of her tongue and an inability to express herself or to understand what is said to her. The aphasic symptoms do not seem to be more prominent when the headaches are right-sided or when they are left-sided. She is predominantly left-handed, although ambidextrous in many respects.

Flashes of light and zigzag streaks of light follow the hemiparetic and peripheral sensory symptoms, and appear in the visual field on the same side as those symptoms. Flashes of light give way to a general blurring of vision, and finally a complete hemianopsia develops. In some of the attacks visual symptoms precede rather than follow the hemiparetic symptoms. It is only after these events have taken place that she experiences any headache. The headache, when it occurs, is always on the side opposite to the other symptoms described, although the attacks are of an alternating character (like those described in her mother) and she suffers from headache on one side of the head as much as on the other. The headache starts as a throbbing, bursting pain back of the eye, and the patient says she has the feeling that her eye on that side is prominent, and actually "popping out of my head." With the onset of the pain she frequently becomes confused and delirious, and remembers little or nothing of what takes place. Nausea and vomiting come on about thirty minutes to an hour after the onset of headache, and are unusually severe. Confusion and amnesia occurred

with her first attack at 13 years of age, and at 15 and 17 she had recurrent headaches for a week to ten days, with complete amnesia for all events except the onset of the attack. She has never had a period of more than two months' freedom from an attack of migraine. In addition the patient has had attacks occurring at night, during sleep. She does not experience the usual prodromes with these attacks, nor does she have the usual hemiparetic symptoms. She generally awakens in the morning to find that she has a mild throbbing pain back of one eye and a general feeling of drowsiness and torpor, which, she says, feels very much like an attack of migraine that is subsiding. She has never had a convulsive seizure that she knows of, nor have any been observed by the mother.

EXAMINATION

The daughter was seen about two hours after the onset of one of her severe migrainous attacks. The headache was on the right side. Her face appeared pale and drawn. She seemed dazed and confused, and was quite uncooperative for special sensory, visual, or aphasic testing. Her eyes were mildly prominent, with a definite stare. The pupils were unusually active to light, particularly the right pupil, which exhibited a marked constriction and tonic response to light. No ocular palsies or nystagmus were made out, although the patient was not co-operative. The tendon reflexes were absent in the left arm but present in the right. Tendon reflexes in the lower extremities were equal and active. No Babinski or abnormal plantar response was elicited. Nausea and vomiting were severe. Following the severe headache, which lasted about twelve hours, she felt tired and languid, and her face continued to appear pale and drawn. There was tenderness and hypersensitivity of the scalp on the right. Tendon reflexes had returned to the left arm, and the pupillary response to light became normal. The patient recalled the onset of the attack, but had very little memory for events after the onset of severe pain back of the right eye. Physical examination in the interval between attacks shows general malnutrition, asthenic body build, poor posture, lumbar lordosis, and retroversion of the uterus. A mild secondary anaemia was present (haemoglobin 72 per cent.). A radiograph of the skull was negative. Neurological examination revealed no abnormalities.

Treatment.—Ergotamine tartrate (0.0005 gramme), given intramuscularly at the onset of one attack, altered the syndrome, as no hemianopsia or paresis of the extremities developed. The headache, nausea, vomiting, and confusion were not relieved. The patient is being treated with oestrogenic hormone in an attempt to regulate her menses and also to evaluate, if possible, the effect on the migraine syndrome. She is to be given ergotamine tartrate again should this effort at hormone therapy prove unsuccessful.

Conclusion

These two case reports are of special interest by reason of the nature of the migraine attack and the fact that the mother and daughter were affected in a similar manner. The aetiology of the migraine attacks is not discussed, although the endocrine and vasomotor features seem to be the most likely factors.

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The B.B.C. announces that on Wednesday, September 13, the first of a series of five talks on first aid will be given by a London surgeon. The talks will begin at 6.30 p.m. in the National programme, and the remaining four will be heard on September 14, 16, 19, and 21. The first talk will outline the general principles of first aid, the second deals with different types of wounds, the third with fractures, and the fourth with burns and scalds. The fifth will be devoted to revision and answers to questions. Diagrams to illustrate these talks will be published in the *Radio Times*.