Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE REACTION OF URINE WITH ETHER.

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IF a specimen of urine, taken promiscuously, be thoroughly agitated in a test-tube with half its bulk of pure sulphuric ether, there will result in most instances an abundant white foam. If now the tube be corked and set aside, this foam rises to the surface and gradually condenses into a greyish gelatinous plug, so firm, it may be, that the tube can be turned upside down without disturbing its contents. In another smaller proportion of cases no foam will result from the agitation, and the ether will immediately separate from the urine and form a clear layer above it. In some instances a second prolonged agitation after the lapse of a few moments will produce the reaction described. In other cases it may be obtained by adding a few drops of acetic acid and shaking the tube again very thoroughly. It will always be noticed that when the reaction occurs the fluid begins to clear first at the bottom, and the clearing progresses upward. When the reaction does not take place the order is reversed, a clear layer of ether appearing first at the top. Pending a thorough chemical investigation as to the nature of the substance thus separated from the urine, I find that the reaction occurs in urine which does not respond to any of the tests for albumen or for peptones. It occurs also in urine from which the phosphates have been removed, and it cannot be obtained with simple solutions of urea or of the urates. It is most abundant in the urine of those who have a good appetite and good digestion, and is usually absent after long fasting, or when the diet is greatly restricted. From these facts it seems probable that it represents an excess of nutritive material taken into the blood and thrown off by the kidneys, and not a product of disassimilation. Albuminous urine responds to the test in the same way and under the same conditions as normal urine, but if the patient is on restricted diet and the urine does not react to the test, it can be made to do so by adding nitric acid and filtering out the resulting precipitate. A portion of the albumen is redissolved by the acid, and at the time so modified that it is acted upon by the ether. This is shown by the fact that if the albumen be removed by heat and filtration before the acid is added, the reaction cannot be produced; but if a drop or two of acid be placed upon the filter, the filtrate immediately responds to the test. The same effect may be produced by acid spontaneously generated in the urine, so that a specimen of albuminous urine which will not show the reaction while fresh may do so after the acid fermentation has progressed for twenty-four or forty-eight hours.

It is possible that the presence of this material in the urine, and its peculiar reaction with ether, may explain some cases of anuria after prolonged etherisation. The ether being eliminated by the kidneys and mixing intimately with the urine in the tubules, affords all the necessary conditions for plugging the latter with gelatinous material, too firm to be displaced, suspension of function necessarily following. Until we know more of the possible reactions of this substance, it will be well to receive with caution the results of some of the more "delicate" tests supposed to detect the presence of minute proportions of albumen.

New York.

TWO CASES, INTERESTING FROM THE WAY IN WHICH DEATH WAS BROUGHT ABOUT.

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CASE I.—*Suicidal bullet wound; bullet compressing the right internal carotid; cerebral softening; death.*—J. C.—was admitted to St. George's Hospital under Mr. Rouse in an insensible condition with left hemiplegia, death occurring

within twelve hours. Twenty-four hours before admission the man had shot himself in the mouth with a pistol. At the post-mortem examination there was no wound of the dura mater, and the sinuses were normal. There were ecchymoses on the under surface of the right frontal lobe. The lenticular and caudate nuclei and the optic thalamus on the right side were in an extreme state of white softening; this softening did not extend to the cortex. The left hemisphere of the cerebrum was normal. On removing the dura mater from the middle fossa there was found to be a fracture at the apex of the right petrous bone. There were some small fragments of bone and a little dry blood-clot. Lying in contact with, compressing but not having perforated, the internal carotid artery was a mass of lead three-eighths of an inch long and a quarter of an inch broad and deep. The bullet then had come to rest on the apex of the petrous bone of the right side, and had compressed the internal carotid artery, thus causing extensive softening of the right cerebral hemisphere and death.

CASE 2. *Sarcoma of the right testis; secondary growths in the lumbar glands; thrombosis of the inferior vena cava; embolism of the right pulmonary artery; sudden death.*—A. D.—, a well-nourished man aged twenty-two years, was brought in dead into St. George's Hospital. The following history was obtained from his companion. He had been in Hyde Park, lying down on the grass; on getting up and walking a few yards he fell to the ground with a cry of pain, pressing his hands to the front of his chest; he became "black as jet" in the face, and died very speedily. At the post-mortem examination there was a congenital inguinal hernial sac on the right side which contained omentum, but which had evidently contained some coils of adherent small intestine at some former time. The right testis was enlarged to about three times its normal size, was knobby on the outside, and on section was seen to be occupied by a hæmorrhagic new growth, which microscopically was a sarcoma; the tunica vaginalis was not adherent. The glands around the inferior vena cava were greatly enlarged, from the presence of new growth like that in the testis. These glands infiltrated the wall of the inferior vena cava below the entrance of the right renal vein, and produced an adherent clot which narrowed but did not occlude the lumen of the vessel. Lungs: Left somewhat cedematous; no clot in the left pulmonary artery or its branches; right normal; the right pulmonary artery contained a firmly fixed but not adherent clot, which on section resembled that in the superior vena cava. Brain, heart, and other organs healthy. The points of interest are (1) the early sarcomatous disease of the testis, setting up considerable secondary growths; (2) the production of pulmonary embolism.

PERFORATION OF THE MASTOID FOR MIDDLE-EAR DISEASE.

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OF the methods employed in opening the mastoid, antrum, and middle ear for disease of these cavities, the most usual are those by means of the hammer and small chisel and gouge, and of the trephine. The objections to the first of these methods seem to be chiefly in the amount of concussion upon the interior structures of the cranium beneath the seat of operation, and in the danger of wounding the lateral sinus in the event of too much force being used, or of a splinter of bone being detached and penetrating it. The other usual method—that of the trephine—seems to have the usual objections of trephining operations—namely, constant adjustment of the cutting edge and the removal of the disc of bone. To obviate these objections it was suggested by Dr. Hunter Mackenzie in several recent cases to use the instruments designed by Mr. Watson, dental surgeon, for the purpose of boring into the antrum of Highmore through the alveolus of the superior maxilla. We acted on this suggestion, and as the results proved eminently satisfactory in all the cases, both as regards the ease and safety with which the operation was performed and the good after results from the free drainage established between the mastoid antrum and middle ear and the external auditory meatus, it occurred to us that the instruments might be found useful by others. They consist in a gimlet with a small point, and the diameter for children of the screw of about one-sixth of an

inch. This is cautiously inserted into the bare bone, and slowly turned by the hand till the cavity is reached. When this occurs, use is made of a cone-shaped burr, in order to enlarge the opening. These instruments can be made of any size, so that any dimension of opening can be made. After an opening of sufficient size has been made, and a free drainage established through the external auditory meatus, a metal wire twisted into a close spiral is inserted into the bone, and kept till the discharge has almost disappeared. During and after the operation the parts are constantly irrigated with an antiseptic solution. In none of the patients was there any rise of temperature or untoward result after the operation. All the cases were instances of chronic suppurative inflammation of the middle ear with mastoid abscess, and of some months' duration. The ease and safety with which the operation is performed, and the good afterwards resulting, seem to us to widen the indication for its performance. The instruments are made by Mr. Young, Forest-road, Edinburgh.

Edinburgh.

CASE OF PUERPERAL ECLAMPSIA.

BY JAMES GILROY, M.B., C.M.

ON March 7th, about 10 P.M., I was called to see Mrs. F—, a patient expecting her confinement about this date. She was over forty years of age, and a primipara. The patient was threatened with abortion in June last, but under opium and careful carrying out of instructions it was averted; and she had gone on, as she thought, perfectly well until three weeks ago, when her feet swelled a great deal, but nothing occurred to make her seek advice. This evening I found great cause for alarm. The patient was seized about 8 P.M. with severe pain in the head, blindness, and delirium. So far as I could elicit, these symptoms came on suddenly. When I arrived she wandered slightly in her talk, but was sufficiently conscious to tell me she had been very ill, but her head now felt greatly relieved, and although she could not see me distinctly she knew me quite well. Her attendants informed me she had two fits in close succession after her husband left to summon me about 8.30 P.M. Examining the pupils, I found them widely dilated and applying a candle closely produced no effect whatever. I examined per vaginam, and found the os a mere chink, totally undilated, and admitting the point of the examining finger very much as a thimble would. I procured a little of her urine, which had been scanty and voided at frequent intervals, and found it loaded with albumen. On heating it became a mass of jelly consistence at once. Her face had all the characteristics of kidney embarrassment, pale, waxy, and puffy eyelids, pulse moderate in fulness and strength, about 76 per minute. I decided to try chloral and bromide of potassium, having found it work well in a previous case where convulsions ensued after delivery. Accordingly I administered twenty grains of chloral hydrate with twenty grains of bromide of potassium, and after waiting some time, and being uncertain as to the advisability of inducing labour, I gave instructions that the patient should receive a similar dose six hours later, after which I would see her again; and in any case, if convulsions threatened or occurred, that I should be called.

I saw her again at 10.30 A.M. on March 8th. The nurse told me she had slept very little or not at all, but had had no more seizures since I left; so that the two she had before I saw her were all that had occurred so far as is known. I did not like the aspect of the patient that day. She was dusky in the face; pulse over 100; breathing rather hurried, approaching dyspnoea. There being every indication therefore of a serious issue, I resolved to induce labour, and with that view passed a gum elastic catheter into the uterus. After waiting about an hour and a half and no contractions occurring, and as the os was quite undilated, I tried cautiously to dilate it. The breathing of the patient discouraged me from using chloroform; and as she had vomited freely during the night I hoped to obtain a moderate degree of dilatation, and then administer a little chloroform, pass the instruments, and deliver. I had the aid of Dr. W. B. Crichton, which is a division of the anxiety one naturally feels in these terrible circumstances. I was proceeding, as I thought, fairly, and the os yielding moderately well, when, with lightning swiftness never to be forgotten, the patient, who all the morning had been conscious and

cheerful although now and again slightly rambling in her talk, but greatly better than on the previous evening, stopped breathing. There were no clonic or tonic contractions visible. The lips did not alter much, if at all, but a bluish tinge was seen round the mouth. We tried to restore her by artificial respiration, and once or twice clung to the hope of being successful as she made one or two spasmodic efforts at breathing, but at length it became too apparent all was over with her. We immediately thought of the child, but the friends would not allow post-mortem operation. The case demonstrates the difficulties of deciding upon treatment, and the risks to which any line of treatment is open. I did not deem the case one for bleeding.

Waterbeck, Dumfriesshire.

A Mirror

OF

HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

ST. GEORGE'S HOSPITAL.

CASE OF COMPOUND DISLOCATION, WITH VERSION, OF THE ASTRAGALUS; REMOVAL OF THE BONE; RECOVERY.

(Under the care of Mr. PICK.)

THE following case of dislocation of the astragalus from all its articulations, with version of the bone, seems worthy of being placed on record. As will be seen in the account of the case, the bone was so nearly severed from all its connexions that it required only the division of two small bands of ligamentous tissue to completely free it from all its attachments, and a very little extra force would have caused it to project from the wound and fall to the ground entirely detached from the foot. In this respect it nearly resembles the classical case referred to by Norris,¹ where the bone was found lying on the ground some distance from the patient. The account that the man was able to give of the accident did not show very clearly the exact mode of its causation; but, as Mr. Barwell has pointed out, it would appear that it is produced by violent twists of the foot when it is at right angles to the leg, and in a position neither of extreme flexion nor extension. For if the foot is acutely flexed, at the moment the force is applied dislocation backwards results; and, on the other hand, if the foot is hyper-extended, the result is dislocation forwards. Mr. Barwell has also very justly pointed out that there must be a certain relationship of strength between the ligaments of the ankle and those connecting the astragalus and os calcis. For if the latter be weak in proportion to the former, subastragaloid dislocation would alone occur, the ligaments of the ankle-joint, on account of their greater proportional strength, escaping rupture, and thus maintaining the ankle-joint intact. On the other hand, if the ligaments of the ankle-joint were the weaker, they would give way, and dislocation at this articulation alone result, the astragalo-calcanean joint escaping injury. We are indebted to Mr. L. Moysey, dresser of the case, for the following notes.

T. S—, painter, aged forty-five, was admitted into St. George's Hospital on Nov. 7th, 1891. He stated that shortly before admission, whilst standing on a scaffold painting a ceiling, the scaffold gave way, and he fell to the ground. In his fall his foot caught the end of a plank and twisted it. He states that he has always enjoyed good health, and has never had any illness, except ague, thirty years ago, in the West Indies. He has had no specific disease, and has always been a moderate drinker. His family history was good. When admitted he was faint and collapsed, with a small, weak, and running pulse and a pale face. The anterior part of the foot was turned inwards at the mid-tarsal joint, so that it was at about a right angle with the axis of the leg. On the outer side of the foot was a wound, extending from the front of the ankle-joint, just ex-

¹ American Journal of the Medical Sciences, 1837, p. 383. Case under the care of Dr. Barton, fatal from gangrene of limb and tetanus.