

of that inspection, I specify the exercise most suitable for each with as little interference as possible with school rules. From the data furnished by these examinations I am engaged in preparing an interesting record, which will occupy me for another three years at least to complete. An analysis of my register up to the present date in relation to albuminuria shows that at the ages of 13 and 14—that is, the age for entering on public-school life—16.27 per cent. of boys are affected with albuminuria. I have further unravelled these figures, and find that in January 14.44 per cent., in May 14.26 per cent., and in September 17.84 per cent. of boys are implicated, the largest proportion occurring after the summer and after the long vacation—an experience contrary to what would be anticipated.

I may add, although I have not figures to produce, that this albuminuria increases rather than decreases between the ages mentioned and the close of school life.

One of the greatest difficulties in the knowledge of the history of this malady is the mode of ascertaining the length of time during which the albumen has been in evidence. Has it been unobserved for years, or is it merely a transient condition? At present I am not acquainted with any secure method of judging. The amount of albumen is no criterion, in consequence of its exceptional variation—the oldest and the newest cases showing each a mere trace, or the largest possible quantity.

At the commencement of this term, I examined a "new boy," in rotation, who looked the picture of health, but on boiling his urine it assumed the colour of milk, so loaded was it with albumen. I had never seen him before, and no mention was made of this ailment in the personal medical history which was furnished. Next morning there was the merest trace, and the following morning none. He may have had it, on and off, for years, or I may have seen its first onset. Although I have worked at these cases for more than a generation, I am no nearer the solution of this question of its duration.

The albuminuria of adolescents appears to arise from the want of adjustment of the cardio-vascular system to changes of blood pressure, depending upon a certain state of the vaso-motor system—which is too readily excited, and as readily inhibited—so that the nerves exert an ineffective control over the blood vessels, and allow serum-albumen to transude through the over-distended capillaries of the kidneys. In fact, we perceive a congestive neurosis, and so long as the hyperaemia is present, which perpetually fluctuates, the liability to the transudation of serum-albumen through the dilated capillaries must continue.

The albumen, therefore, mostly occurs when there is any special stress upon the circulation, as in assuming the vertical position, during active exertion, or after meals. On the other hand, when the strain is diminished, as in the horizontal position, the most copious albuminuria will immediately disappear, and abundant food may be administered; while in the vertical position the taking of milk alone may be able to prevent a recurrence of the albumen.

When the circulation is thus unstable from defective innervation of the blood vessels—a condition exceedingly common, as I have shown, during the years of growth—the albuminuria may repeatedly recur, even after apparent recovery. The most trivial causes throw the system out of gear in this respect—such as an indiscretion in diet, a constipation, a chill, a cold bath, standing on wet grass, the position of the body, emotion, nervous depression entailing imperfect assimilation of food and the circulation of impurities in the system—with resulting headache, fainting, momentary loss of consciousness, and albuminuria.

The main features, accordingly, of the albuminuria of adolescents are its intermission, the variability in the amount of albumen present from hour to hour and from day to day, its duration, and the infinite variety of causes and the slight nature of each—the whole of these conditions depending upon the state of the cardio-vascular system.

The increased cardiac impulse against the chest wall apparently arises, as Sir William Broadbent suggests, from the right ventricle. He remarks "that the apex beat proper, or left ventricle impulse, is, in my experience, weak. This difference has enabled me to diagnose the albuminuria before examining the urine."

The conclusion which I desire to enforce is the fact that, when the albuminuria of adolescents is recognized and treated, there is little likelihood of its proving the precursor of organic disease of the kidneys, even when its duration has been many years.

The general treatment resolves itself into so reasonable a regulation of life as to ensure the highest state of vitality during adolescence:

1. *Work*, while it may be ample, must not be excessive; and work is always excessive during the years of growth when sleep is insufficient. The hours of both must be determined according to age, as I have so often urged.

2. *Exercise* should be recreation rather than physical drill, which, by the pleasurable sensations, increases the tone of the whole nervous and vascular system; and such exercise should be daily.

3. *Food* should be sufficient for the provision of growth, as well as the renewal of wear and tear, bearing in mind that the adolescent requires more food than the adult, and the girl more than the boy, on account of her greater rapidity of growth.

4. *The duties of the scavengers* of the body should be so disciplined as to be brought under the habitual control of the will. Natural action should not be replaced by the perpetual stimulus of aperients, for this vicarious duty obviously confirms the intestines in sluggishness of work, and tends to convert a temporary inactivity into a permanent abandonment of function.

The line of treatment of the individual I have indicated in speaking of the varieties of constitution in which this albuminuria is manifested.

I thank you for the close attention you have given to my paper; I hope that you will devote an earnest and thoughtful consideration to its suggestions in the interests of the coming and future generations.

CASE OF LIGATURE OF THE PROFUNDA FEMORIS ARTERY, COMMON FEMORAL ARTERY, AND COMMON ILIAC ARTERY ON THE SAME SIDE, WITH PERFECT RECOVERY.

By HENRY E. CLARK, C.M.G.,

Senior Surgeon, Glasgow Royal Infirmary.

H. B., porter, aged 26, was admitted into Ward 25, Glasgow Royal Infirmary, on April 25th, 1899, suffering from a small punctured wound at the inner side of the left thigh, at the junction of the upper and middle third.

His story was that he and another man were having a fight, when the latter whipped out a penknife, and came at him. In trying to escape from the assault, he fell, and his assailant fell on the top of him, and the blade of the knife ran into the thigh, right up to the hilt. The wound bled very freely, but a doctor was soon in attendance, who put on a pad and bandage. When he reached the hospital the bleeding had ceased, and on the following morning, when I saw him at the usual visit hour, the wound was so well plugged with clot that I thought it unwise to disturb it. All went well till May 12th, when the wound was found to be bleeding freely, suppuration having taken place, and the clot having consequently broken down. I thoroughly opened up the wound, and exposed the main trunk of the profunda femoris artery, which had been incompletely divided; this was double ligatured and cut across. The vein was also found to be injured, and was more difficult to secure effectively than the artery.

Three days afterwards (on May 15th), when the patient was using the bedpan he became suddenly blanched and pulseless, and the dressings became saturated with arterial blood. I was fortunately on the spot at the time, and at once took him to the operating theatre, where I ligatured the common femoral artery just at its emergence from beneath Poupart's ligament. This arrested the bleeding, and he very rapidly recovered from the loss of blood, until five days later (May 20th), when a still more serious haemorrhage took place. On this occasion also I happened to be in the infirmary, and at once applied an elastic bandage round the pelvis and hip, but as this did not control the bleeding it was decided to ligature the common iliac artery. This was done by Sir Philip Crampton's method, as described by him in the *Medico-Chirurgical Transactions*, vol. xvi, p. 161, as far back as 1828. The incision commenced at the anterior extremity of the last rib, proceeded downwards directly to the ilium, then followed the line of the crest, but keeping a little within its inner margin, until it terminated at the anterior superior spine. The abdominal muscles were divided in the full extent of this incision till the peritoneum was reached, when that structure with the contained intestines was lifted

up off the iliac and lumbar fasciae. The ureter was raised with the peritoneum. An excellent view of the external and common iliac arteries was obtained, and the bleeding was slight and easily controlled. By means of a helix-curve aneurysm needle the common iliac artery was freed from a small amount of fat, and a strong chromic gut ligature passed and securely tied. The large wound was for the most part stitched up in layers, but the part in the loin was packed with iodoform gauze. The patient stood the operation well, and made up rapidly for the loss of blood. Unfortunately, the wound suppurated, but this was not wonderful, considering that there had been all along an infection of the original wound, probably from septic material carried in by the knife. This, however, materially delayed the healing, and it was not till August 11th that he was dismissed to the Convalescent Home.

After leaving the wards he was only seen once by me, as he found it impossible to come to the infirmary on week days. He was seen by one of my dressers and also by my staff-nurse fully six months after leaving us, and was then in full employment as an outside porter at the Glasgow Central Railway Station. I understood his work to consist mainly in taking commercial travellers' large sample boxes on a hand-barrow about the town—a sufficiently trying and laborious occupation. It is not too much, I think, to claim this not only as a "recovery" but as a perfect cure.

Although ligature of the common iliac artery is not a common operation, there are a considerable number of cases recorded, most of them belonging to the early half of last century. J. D. Bryant (*Operative Surgery*) states that it has been ligatured sixty-nine times with only sixteen recoveries, but there are no doubt many unrecorded cases. A former case in my wards about two years earlier than the above has not yet been placed on record. The operation was done by my colleague, Dr. H. Rutherford, in my absence, for secondary haemorrhage following an amputation at the hip for osteomyelitis of the ilium. Crampton's incision was used, and the patient made a good recovery from the ligature operation, but succumbed about a month later to remote pyaemic consequences of the original disease.

My purpose in this present communication is to show that even with a triple ligature—in common iliac, common femoral, and profunda arteries—the nutritional condition of the limb may still remain excellent, and its functional effectiveness be perfectly restored. I do not suppose that the case is unique, but such experiences must be rare, and my search into the literature of the subject has not resulted in the unearthing of another.

It may be asked why I did not adopt the shorter, easier, and more direct method of ligaturing the common iliac by the intraperitoneal method. The sufficient answer is that the case was a septic one, and I was not prepared to run the risk of a septic peritonitis, which would probably have proved fatal.

INNOMINATE ANEURYSM: SIMULTANEOUS LIGATURE OF RIGHT CAROTID AND SUBCLAVIAN ARTERIES: RECOVERY.

By H. N. DUNN,
Major, R.A.M.C.

H. S., an ex-soldier, aged 40, single, contracted syphilis in 1886, when he was under treatment for some weeks.

Early in July, 1904, he suffered from severe neuralgic pains radiating from the right side of the chest to the back of the head, and extending into the right shoulder. He attended the out-patient department of the Royal Arsenal Hospital, but no physical signs were apparently present at the time.

On September 27th, 1904, the pains being more severe, he again presented himself at the hospital, and when seen by me a well-marked pulsatile swelling occupied the episternal notch, and extended from the sternal origin of the left sterno-mastoid muscle to the junction of the inner and middle thirds of the right clavicle; the tumour measured $3\frac{1}{2}$ in. laterally, and projected upwards above the clavicle for $1\frac{1}{2}$ in., the lower margin being ill-defined, well-marked expansile pulsation with a systolic murmur being present. The trachea was displaced to the left, dysphagia on swallowing solids, and dyspnoea on exertion or assuming the prone position were also complained of. He also suffered from severe pain along the right side of the head and neck and right shoulder and arm, the radial pulse on the right being also smaller than that on the left side, and its rhythm some-

what delayed. His voice was reduced to a whisper, and his cough "brassy" in character, the right vocal cord being fixed and motionless, due to direct pressure on the recurrent laryngeal nerve, but no "tracheal tugging" was observed. As the man was exceedingly ill and the tumour enlarging rapidly, Mr. Bidwell, of the West London Hospital, kindly saw the patient, and confirmed the diagnosis of innominate aneurysm.

The case was admitted to the Royal Arsenal Hospital and put on a modified Tufnell's diet, and large doses of pot. iod., 30 to 50 gr., administered three times a day. An attempt to get an x-ray photograph of the tumour was unsuccessful. For the first few weeks after admission marked improvement—due to the rest and the dieting—took place, but as the tumour subsequently increased in size operation was decided upon.

With Mr. Bidwell's assistance the right common carotid was ligatured above the omohyoid muscle and the subclavian tied in its third stage; the patient being a man with a long spare neck there was no particular difficulty about the operation, the subclavian being easily reached below the clavicle, as suggested by Mr. Bidwell, by elevating the shoulder; both arteries were apparently healthy at the site of ligature, and double strands of silk were used. Both wounds, with the exception of one small stitch point, healed without suppuration. His temperature rose to 99.6° F. on the day following the operation, and fluctuated between that and normal until the fourteenth day, when it finally settled down. He complained of severe pain along the right arm, but no oedema occurred, nor did any head symptoms supervene.

Immediately after ligature of the arteries a decided diminution of the sac took place, and that portion in the episternal notch became firmer and less expansile, but subsequently the remainder of the tumour enlarged slightly upwards and outwards, and pulsated somewhat more freely than before ligature. His condition on March 29th—fifty-one days after operation—was as follows: That portion of the sac in the episternal notch has consolidated, and feels firm to the touch, although faint pulsation is still felt, and the sac itself is tender on pressure. His voice has much improved, but cough is still "brassy," and paralysis of the right cord persists; some difficulty in swallowing solids continues, but pain has disappeared.

The patient was discharged from hospital on April 7th, at his own request, and on May 1st—eighty-one days after the operation—was recommended for light employment. He now walks about a mile and a half to and from his work daily, without dyspnoea, and can follow his occupation of cleaning tools at the bench without inconvenience of any sort except slight fatigue of the right arm and shoulder. The tumour has shrunk considerably, and is firmer and less expansile, measuring $2\frac{1}{2}$ in. laterally, and extending for $\frac{3}{4}$ in. above the clavicle. Paralysis of the right vocal cord is still present, and on inspection there is a slight fullness immediately above the right clavicle, and the external jugular vein is more prominent than that on the opposite side. No temporal pulse is to be felt, although a faint radial pulse is present, and coldness and slight weakness of the right arm remains.

The following statistics, taken from records available at the Medical Graduates' College, London, may be of interest:

Mr. Bennett May, F.R.C.S., in the *Lancet* of June 14th, 1884, reported the result of 35 cases of distal ligature of carotid and subclavian for innominate aneurysm; of these, in 29 both arteries were ligatured simultaneously and 6 consecutively; 23 died, death being hastened by the operation; in 6 the disease was not checked, and 6 were practically cured. He also reported 29 cases in which the common carotid alone was tied, and of these 19 died from operation or soon after; in 6 the disease was not arrested, and 4 were practically cured or showed marked improvement.

I have also been able to find accounts of 10 other cases of simultaneous distal ligature of both arteries, reported in the medical journals; in 5 the sac became firmer and smaller, and the patients were able to do light work; in 4 death occurred in periods varying from ten days to one year (2 from lung trouble, and 1 as the result of hemiplegia); in 1 the condition was relieved but not cured; in no case, however, was there complete consolidation of the sac, although in one case it was reported to have shrunk to the size of a "walnut."

REQUESTS.—The late Miss Eleanor Tamlin Reid, of 26, St. Petersburg Place, Hyde Park, whose will has now been proved, bequeathed £1,000 to the British Home and Hospital for Incurables.