

of the body, except in the parts of lower limbs mentioned above as being discoloured, in which the joints were perfectly flexible and the muscles soft and flabby. Head: The dura mater was somewhat congested, as was also the pia mater, and there was some milky opacity of the arachnoid over the apex of the hemispheres. The brain weighed $54\frac{1}{2}$ ounces, and had an abnormally plentiful show of puncta vasculara. In all other respects the contents of this cavity appeared healthy to the naked eye. There were no signs of atheroma in the arteries at the base. Chest: Lungs emphysematous to a large extent in their anterior and inferior borders. No fluid in pericardium. The heart weighed $10\frac{1}{2}$ ounces, all valves competent. The cardiac muscle was fairly firm and appeared healthy, as did also its lining membrane, which was in all parts smooth and glistening. Right auricle almost completely filled by a yellow, fatty-looking clot. Right ventricle contained a much smaller clot of like character and some blood, while the left side of the heart was gorged with black fluid blood. The aorta, which was full of blood similar to that in the left heart, appeared perfectly healthy. Abdomen: Spleen rather soft and friable and dark-coloured; liver congested; all the other organs appeared normal except the uterus, which was retroflexed. The right femoral artery at the seat of pain during life was cut down upon and removed for about three inches of its extent. It was easily found, as it was hard and round, almost as though the body had been injected for dissection. Black, tarry blood flowed slowly from the upper end of this section of artery, while the lower end of it was filled by a black plug of coagulated blood, which kept its form on being squeezed out. The wall of the artery was highly injected, had lost to a great extent its natural elasticity, was thickened, and had a harsh, leathery feel. On its being slit up its lining membrane was found to have lost the smooth, glistening surface; it was rough, of dark-red colour, and covered, especially in its lower half, with hard nodules of black coagulated blood, which would not wash off, but remained firmly adherent to its lining membrane. As permission to examine the body was only obtained after it had been duly promised that nothing would be done beyond that necessary to ascertain the cause of death, none of the vessels in the other affected limbs were examined.

Remarks.—This case is interesting as being a remarkable example of a most rare disease. There can be no doubt that in former times the post-mortem staining of the inner coats of arteries was often mistaken for the injection of the vasa vasorum found in true inflammation of the arterial walls, and there is equally no doubt that, although idiopathic arteritis was formerly suspected in many cases where no real inflammation of the vessels existed, it may and does occur in rare instances. The disease in this case was marked at its onset by a distinct rigor, for such I consider the "being taken very cold" described by the nurse on the first day. The temperature from the second day was above 100° , which is not high considering the extent and acuteness of the inflammation; but with this we must remember that our patient was an acute maniac—that is, one in a state in which the usual effects do not follow disease; one in whom the nervous system, and in fact the whole organisation, is so numbed that causes sufficient to produce marked changes in the ordinary state of the system pass unnoticed. The clot found occluding the artery was made up simply by coagulation of the contained blood. True, this may have only been a clot formed by coagulation above another formed by exudative material further down in the vessel; but this is extremely unlikely, because, in the first place, it was within two inches or less of the line of demarcation between the gangrenous and other tissues, and gangrene rarely extends so high as the point of obstruction in the main artery of a limb; and, secondly, it is an open question whether the lining membrane of an artery can at all pour out an exudation into the blood current. Virchow proved by experiment that a vein empty of blood might be irritated and no exudation take place from its lining membrane although its wall became infiltrated, and we know of no reason why the same rule should not apply to an artery. It is quite possible that the tissues of the arterial wall may participate in the inflammatory state, and without exuding any morbid or other material into the cavity of the vessel, conduct to the blood some coagulating influence. Again, given an artery filled with coagulum, and the patient continuing to live, we have, as one mode of termination, contraction of the vessel, a gradual change in the clot and the vessel's walls like that known to occur in other parts of the

body, and ultimately nothing left but the fibrous cord which is sometimes found, and upon which the theory of the pouring out of exudation was to a considerable extent based. As to the cause of the affection, I believe no more can be said than that it is a morbid state of the system, which expresses itself in this particular way, as pneumonia depends upon some other morbid state, which makes its presence known by solidification of the lung. All the authorities I have consulted agree that arteritis generally appears in persons beyond the middle age and of broken constitution. That the disease should in this case attack more than one vessel or limb, though strange, is not any more wonderful than that pneumonia should in some cases attack both lungs, or that rheumatism may in one case attack a single knee or shoulder-joint, and in another case both knees or both shoulders. Had not the heart and aorta been examined there would have been room for grave suspicion of embolism, but I think the autopsy, incomplete as it was, excludes at once all but arteritis.

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THE PRIMARY STAGE OF ANEURISM (SUBCLAVIAN) AND ITS DIAGNOSIS DURING LIFE.

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CLINICAL authorities in writing and teaching so frequently ignore the possibility of the detection and diagnosis during life of an aneurism in its early and pre-sacciform stage, that I have thought the following interesting case, illustrating as it so well does the opposite view, well worthy of publication. With the advanced state of auscultatory science the modern physician has, perhaps, a tendency to attach more importance to the objective than to the presumptive signs of intrathoracic disease. In the alternative that presents between two diseases more might assuredly be done in diagnosis than often is by patiently weighing and considering carefully the *pros* and *cons*. The case I write of is that of a man who consulted me on July 31st, 1876, and the fact of his having died some days ago in the Bristol Royal Infirmary has led me to overhaul and publish extracts from my notes as entered at the time in my clinical diary.

J. M—, aged twenty-eight years, consulted me on July 31st, 1876. States that he has been under the care of a local surgeon for a couple of months, and that he has been treated by that gentleman for functional disease of the liver (that much maligned organ) and other ailments, considered trivial, and attributed to cold. Influenced by what the patient told me, I did not, on this occasion, institute any special examination, merely prescribing a mixture with chloric ether and compound tincture of camphor. I desired the patient to call again, so that I might more particularly examine him.

August 3rd, 1876: Patient called. Reports himself no better. Complains of pain under the left clavicle when he moves his arm. States that the pain shoots down his arm in twitches. Tells me that the pain is not in any way aggravated by percussion or pressure. Complains particularly of pain over the costal cartilages of the right side, about two and a half inches below the right nipple, "a severe beating and swelling sort of a pain," to use his own words, "on the breast." A whiffing bruit is heard and visible pulsation is obvious, at the outer part of the left subclavicular region. Auscultation fails to show any pulmonary or cardiac mischief, save that the second sound of the heart is sharp. Taking all things into consideration, I suspect aneurism.—5th: In conjunction with my friend, Dr. Imlay, of Clifton, to whom I had explained in detail the several symptoms elicited, we both agreed in the validity of the following reasons that aneurism of the third portion of the subclavian artery was the nature of the disease: 1st, that the second sound of the heart is sharp; 2, that the patient complains of pain at the outer extremity of the left infra-clavicular region; 3, because neuralgic twitches of pain shoot down the left arm, evidently from some pressure on the brachial plexus; 4, that the venous radicles on the left shoulder are enlarged much more than on the corresponding shoulder; 5, much greater fulness, apparent to the eye, under the left than

under the right clavicle; 6, that there is distinct visible pulsation in the last-named site; 7, that there is uniform bulging of the artery on applying the finger; 8, that a distinct whiffing bruit is audible under the left clavicle on applying the stethoscope, as also the ear, by immediate auscultation; 9, that there is striking arrest of the radial pulse on the left side, almost approaching to complete suppression, and obviously pointing to some obstruction on the cardiac side. We want, however, two links to complete the diagnostic chain of argument for aneurism: (1) Dulness, which, by tactile percussion on the affected site, we fail to demonstrate; (2) the presence of a distinct aneurismal tumour. The two absent symptoms do not, however, militate against aneurism, but against aneurism in an advanced stage. Bruit, pressure symptoms, such as pain, venous congestion, and fulness under the clavicle, may be caused by primary dilatation of the artery, or by fusiform aneurism so-called, just as congestion of minute arterial capillaries may by pressure on nervous filaments in any part of the body cause pain. Taking into consideration the possibility of the cure of aneurism, especially in its earlier stages, by iodide of potassium, as advocated by the late Drs. Begbie and Bennett, of Edinburgh, and surmising that the co-operation of the patient himself would be a necessary accessory to the cure, I deemed it better to acquaint the patient and his friends with the serious nature of the affection, as by so doing I could inculcate on the patient's mind habits of the strictest temperance, and successfully enjoin on him the necessity of avoiding any exciting or violent exercise. I remembered that my patient had a penchant for quoit-playing, and occasionally for wrestling. I postponed, however, and withheld from him the result of my diagnosis and prognosis consequent thereon, till another examination should quite preclude the possibility of any fallacious assumption.—7th: Dr. Imlay and I again subjected the patient to a strict examination, with the result of mutually confirming our former observations. Strange to say, by means of the percussion hammer of Hughes Bennett, of Edinburgh, and a pleximeter, I demonstrated on this occasion, to the satisfaction of Dr. Imlay and myself, marked dulness over the suspected site; tactile percussion, as stated August 5th, 1876, having failed to elicit this important symptom. The dulness exists in a circumscribed patch at the outer extremity of the left subclavicular region. At this date the absence of a distinct tumour alone is wanting to complete the diagnostic chain; yet in the face of so much affirmative evidence for aneurism, albeit that one solitary symptom is absent, it is impossible to refrain from concluding that we have to deal with the first stage of a fusiform aneurism, involving the third portion of the subclavian artery on the left side.

Treatment.—The patient must desist from quoit playing and any violent exercise, as also from any excitement; to observe perfect rest and quiet, and to abstain from stimulants; to take half an ounce of the following mixture in water night and morning for six weeks: tincture of digitalis, two drachms; iodide of potassium, three drachms; clove water to eight ounces.

Oct. 9th: Symptoms still present. One symptom, the whiffing bruit, is perhaps not so marked on this inspection; it can, however, still be heard. The pulse at the left wrist is all but suppressed. The patient has been in Scotland, but instead of consulting, as I advised him, Dr. Gairdner, of Glasgow, has taken the opinion of a country surgeon in the North, who told my patient that he had no aneurism, but that "his blood had got glued and sticky in his veins from cold." It is to be regretted that such rough-and-ready diagnostic opinions are but too commonly given. Sir Wm. Fergusson says of aneurism, p. 147, "Practical Surgery," third edition: "I have myself watched one of undoubted character on the axillary artery for several years, and could observe no perceptible increase in its size; and examples where spontaneous cures have occurred within a certain period might also be adduced." That there is a possibility of the cure of aneurism, even in advanced stages, many well authenticated cases attest; much more, then, are we entitled to hope for a cure when the aneurism is in its pre-sacciform phase.

At this date (Oct. 9th) I am satisfied that the case has been (if it be not now) a genuine case of the diagnosis of aneurismal dilatation in its initial stage, and I am likewise satisfied that if the patient do not present to subsequent examiners the symptoms of an aneurism, he has to thank me for my diagnosis of Aug. 7th, 1876, and the drug called iodide of potassium for his recovery.

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REMARKS ON BILHARZIA.

By DR. JAMES F. ALLEN.

THE bilharzia is of peculiar interest to the colonists of South Africa. All our streams and rivers are more or less infested with it; it is to be found in persons resident widely apart, in the Cape Colony, Free State, Transvaal, and Natal, not only in these colonies and States, but also far in the interior; indeed, it is pretty evident that it is to be found in the rivers of the whole continent, from Egypt to the Cape of Good Hope. Some time ago I was consulted by a gentleman who had returned from a hunting expedition in the interior, several hundred miles beyond the regions occupied by white settlers. He was first troubled with hæmaturia, due to the bilharzia, while camped on the banks of the Zambesi.

In this part of Africa (Natal) the persons principally affected are the children of the white settlers and natives. The reason is very evident; they are the largest consumers of unfiltered water. It is not so often found in girls, they staying at home more can as a rule get filtered water; boys and natives, living much in the veldt and drinking copiously from the first stream they come across, soon imbibe it. The symptoms produced by the bilharzia are therefore so common that almost every lad suffers or has suffered from hæmaturia. So general is this symptom among boys that they often do not think it necessary to mention it to their parents. Unfortunately the medical profession in this part of Africa, in common with the profession in general, have as yet failed in their efforts to eradicate this parasite. For these reasons one is not often consulted primarily about the bilharzia, therefore to obtain any information one must collect it by close inquiry, and if possible by adopting some successful means of treatment; the best that could be done up to the present was but a kind of expectant treatment: support the patient's general health and wait. It was more than probable he would be quite free from the parasite before he was twenty. In the majority of cases this would be correct, but in the meantime the child's growth is going on. This constant loss of blood sets its stamp on his appearance; tall, perhaps, but narrow-chested, pallid, without energy, mental or physical, they become a source of great uneasiness to their parents. It is at this period we are generally consulted. Sometimes no mention of the real cause of the mischief is made until after close questioning. It is not uncommon to hear parents express their surprise at hearing for the first time that their children are suffering from this parasite; others know of it, and, as I have said, think nothing can be done; the loss continues. Soon, in this warm climate, the majority of colonial-bred lads of pure European descent assume a cachectic appearance with weakened frames, which will seriously affect the physique of the future pure white race in South Africa. I mean by pure white those persons who have not the blood of one or other of the black races in their veins. Most of the Dutch of the Cape, Free State, and Transvaal would find it hard to clear their pedigree of "black blood." The result is that at the present day these men, although they suffered from the bilharzia in their youth, have an immunity from its after-effects, due in all probability to their being on that account better able to bear the climate. The natives, to judge from their appearance, are also blessed in this way.

Finding this little parasite likely to become of great importance in the future of this country, I set about making attempts to destroy it. I also inquired closely into the history of those who had become free from it, especially the time immediately before its disappearance, and the circumstances which they believed led to this happy result; also into the symptoms the presence of the parasite produced. These consisted, in the great majority of cases, in the passage of a few drops of blood after urination. Sometimes this hæmorrhage is increased to several ounces, and is nearly always accompanied with a rigor, sometimes also with pain and irritation of the bladder. This is followed by anæmia and all its consequences; most of the persons were affected "as long as they could remember." When the hæmaturia had disappeared they could not recall; perhaps when they were fifteen or sixteen years old. They had never paid much attention to it, having suffered from their early