ORIGINAL COMMUNICATIONS.

PUERPERAL ARTERIAL OBSTRUCTION.

By JAMES RISDON BENNETT, M.D., Physician to St. Thomas's Hospital, etc.

THE subject of arterial obstruction is one of such importance, and has of late acquired so much additional interest from the light which has been thrown on at least certain varieties, by Ruhle, Dr. Kirkes, and others, that the readers of the ASSOCIATION JOURNAL must, I am sure, have perused with great interest the account given in a recent number of the very valuable communications on this subject made to the Edinburgh Medico-Chirurgical Society by Professor Simpson. Any additional facts calculated to throw further light on a subject still so obscure, ought to be recorded, and must be acceptable to the profession. I venture, therefore, briefly to detail a case which appears to fall within the category designated by Dr. Simpson as "puerperal arterial obstruction".

CASE. Eliz. Mayers, a married woman, aged 33, was admitted into St. Thomas's Hospital, under my care, on the 2nd Aug. 1853. She was of small delicate frame, had had two children, and, until her last pregnancy, had enjoyed good health. For several weeks previous to her confinement, she had suffered from debility, dyspnœa on exertion, and œdema of the legs; so that she had kept her bed for a fortnight before her accouchement. She had, at this period, some pain of left side, and occasional palpitations. She had never suffered from rheumatism.

Her labour took place nine weeks previous to her admission, and she had "a very bad time". She did not recover well, and for some weeks continued very weak and ill; but, regaining her strength somewhat under medical treatment, she did not act on the advice given her a month before, to come into hospital. About fourteen days before her admission, she had pain across the chest and down the left arm, attended with copious sweating. A week subsequently, she had frequent attacks of what appeared to have been syncope, with impaired vision, slight cough, with occasional frothy bloody expectoration, disturbed nights, and strange dreams. On her admission, she looked extremely ill, had an anxious pinched depressed countenance, was restless and uneasy; the skin was clammy, and the pulse 92, extremely feeble, and irregular. The only discoverable cause for her very alarming state appeared to be connected with the heart, the action of which was tumultuous, feeble, and irregular, and attended by a variable bruit, sometimes distinctly double, the second sound being sharp and ringing. At other times, only a systolic bruit could be heard. The præcordial dulness was perhaps somewhat extended. There was some slight puffiness of the ankles, and she complained of pain and tenderness generally in the lower extremities. The bowels were open, and the tongue coated in the centre, and dry and red at the tip and edges. She was allowed wine with beef-tea, and, after she had rallied, I prescribed for her a diuretic mixture, with sesquichloride of iron, and a pill at night, with hyoscyamus and blue pill.

On the 5th, she complained of the breasts (which still contained milk, and were tense), but more of the left leg and thigh. This had much of the appearance of a limb affected with phlegmasia dolens, was tense, tender, paler rather than redder than natural, and, towards the foot, of decidedly lower temperature than the rest of the body. It was fomented with poppy decoction, and wrapped in flannel. The following day, Mr. Simon and others of my colleagues examined the limb with me, when it was evident that some serious obstruction to the circulation of the limb existed, which, in other respects, was in much the same condition. Her constitutional symptoms, as compared with her condition on her entrance, were considerably improved, and the heart's action was decidedly more regular and powerful, though varying much, and occasionally unattended by any bruit. The limb was kept enveloped in cotton-wool, and warm poppy fomentations continued. She was now ordered ten grains of nitrate of potash, with sp. æth. nitrosi, tinct. scillæ, and tinct. hyoscyami, every six hours, with Dover's powder and two grains of blue pill every night, more wine, and a generous diet. A day or two after this, similar symptoms presented themselves in the opposite limb; the temperature of both fell, and the toes of the left foot first, then of the right, shrivelled, and became transparent and parchment-like. The face now presented a wild and distressed expression; there was much restlessness, and great complaint of pain of the limbs and general suffering. There was not, however, strictly speaking, any dyspnœa, nor did physical examination of the chest reveal any evidence of much pulmonary congestion; but she complained greatly of a sense of constriction about the chest, and of impending death. Stimulants and opium, in larger and larger doses, gave her considerable relief. The sleep was much disturbed by dreams and delirium. On the 13th of August, both limbs were in a state of complete gangrene, with some vesication here and there on the thighs, and towards the confines of the gangrened parts. She still complained of pain in the left leg, but neither in this nor in the opposite limb was there, nor had there been, any special tenderness, or hardness, or redness, along the course of the main arteries, the circulation in which could no longer be felt even under Poupart's ligaments. Pulse 88, extremely feeble; respirations 56; tongue moist and coated; skin cool and sweating. On the 3rd of September, she had become typhoid, but the heart's action was not generally regular, and the systolic bruit very loud. On the 6th, she died.

POST MORTEM EXAMINATION. The right limb was in a state of gangrene to above the middle of the thigh, where there seemed some slight attempt at a line of separation. The left lower extremity was in the same condition, except that the gangrene had not extended so far up the thigh. On opening the chest, the lungs did not fully collapse, and, on section, gave out a little frothy fluid from the larger bronchial tubes, which were slightly congested; but, in every other respect, the lungs and pleuræ were perfectly healthy. The pericardium contained about two ounces of straw coloured fluid; its lining membrane was healthy. The heart weighed fourteen ounces. The left valves, though slightly opaque and somewhat thickened, were not materially diseased. At the posterior part of the left ventricle, near the base (under the attached fold of the mitral valve), there was a very decided thinning of the parietes, and bulging of the cavity. The muscular structure on the inner side had extensively undergone the fibro-cartilaginous degeneration, and the wall, though elsewhere four to six lines thick, was there not more than two or three. The bulging was not abrupt, but consisted in a gradually increasing expansion of the wall; the condition thus presented being what has been described by Dr. Thurnam as "diffused true aneurism". This cavity did not contain any coagula, but at the apex of the ventricle there was a partially adherent globular cyst, and another very similar in the right ventricle. These coagula were softened in the centre, and filled with pus-like matter. The degenerated muscular structure, when examined by the microscope, appeared to consist chiefly of molecular matter, mixed with oil globules and intermingled fibrous tissue. The muscular fibre of the heart generally was not healthy, presenting oil globules. The aorta was healthy as far as the giving off of the superior mesenteric artery; from this point downwards to its bifurcation, it was filled with a clot, in different stages of change. Just at the bifurcation, the clot seemed to be very firm, and adhered with more tenacity on the left than on the right side, where the artery continued patent for some distance lower. The iliacs, both common, external, and internal (the latter for some distance only), were blocked up; and the femorals were in the same condition as far as about two inches below the groin, beyond the origin of the profunda. The clot along the whole extent adhered pretty firmly to the walls of the artery, but, when peeled off, the internal coat was not roughened. The clot had begun to soften in different parts, more especially along the

aorta itself; and the products under the microscope were precisely similar to those presented by the clots in the heart. All the arteries which were given off from the aorta, between the superior mesenteric and profunda femoris, were blocked up for a short distance. Each of the femoral veins at the groin contained a short recent clot. The anterior crural nerves in both thighs ran close to the femoral artery, and were implicated in surrounding (inflammatory?) changes and thickening. There was a good deal of infiltration of the cellular tissue with fluid. In the right kidney there was considerable yellowish fibrinous deposit; the capsule being removed left a rough granular surface. In the left kidney was an apparent abscess in the cortical structure; the contents however, were not pus, though very like it in appearance. Under the microscope, characters were presented precisely similar to those which have been described as seen in the heart, with this addition, that there were numerous crystals of triple phosphate of ammonia and magnesia. The distinction between the cortical and medullary structure was more than usually evident from the yellowish deposit being most abundant in the former. All the other organs were healthy. Brain not examined, nor the arteries of the upper extremities.

The primary cause of the arterial obstruction in this case is not very clear, except that from the early history, as well as from the condition of the heart, as ascertained after death, it is evident that the central circulatory power was seriously impaired. The debility, dyspnœa and œdema of the lower extremities, with palpitation of the heart prior to delivery, indicate an enfeebled state of the circulation, with probably a distended state of the heart. The exact condition of the patient in the interval between her delivery, and ten days before her entrance into the hospital, could not be satisfactorily ascertained. At the latter period, however, we have evidence again of the same state of circulation, in syncope, congested lungs, and probably, temporary obstruction of the circulation in the left arm. The ascertained condition of the heart justifies the conclusion that its contractile power was much impaired. Neither the condition of the valves of the heart, nor the character of the clot, nor the mode of accession of the symptoms of obstruction appear to me to justify the supposition that there had been any detachment of organised clots from the valves of the heart. But it does not appear to me at all improbable that there may have been, on more than one occasion, coagula formed in the cavities of the heart, and sent along the circulatory current. There is not, I think, sufficient evidence to lead to the conclusion that the case was one of arteritis; at all events, not what is ordinarily understood as arteritis. The circulation of morbid matters in the blood, or any special diseased state of such fluid, is not proved, and can only be matter of speculation. The structural changes in the heart and kidney show, however, a morbid state of nutrition. The connexion of the arterial obstruction with the puerperal state in this, as in other cases, it is difficult to explain. If, however, a permanently weakened heart, with degeneration of its muscular tissue, be sufficient to account for polypous formations in its cavities, especially as in this case where an incipient aneurismal dilatation existed, it is easy to understand how the debilitating circumstances attendant on parturition should still further favour such formations. The languid circulation through the main arteries would favour the arrest of coagula, which from time to time might be propelled from the heart, and lead to further coagulation. I have met with another case of spontaneous gangrene occurring in a male, about forty years of age, in whom there was reason to think that the arterial obstruction was dependent on cardiac disease characterised by dilatation and enfeebled power of the heart, and associated with paroxysmal attacks of an asthmatic nature. This man recovered, after losing the great toe and a portion of the next and a considerable part of the integuments of the dorsum of the foot. He had not had any rheumatic disease, and the obstruction occurred suddenly, and was attended by great pain in the foot with evidence of obliteration of the main artery as high up as the popliteal space, irregularity and feebleness of heart's action and of the general circulation. His recovery was marked by a steady and striking improvement in his nutrition, and in the general vigour of his circulation, though he continued to have occasional asthmatic paroxysms which were relieved by ordinary means and terminated in the usual way by free expectoration.

15, Finsbury Square, Feb. 1854.

COMPOUND FRACTURES OF THE CRANIUM WITH DEPRESSION.

By ELLIS JONES, Esq., Surgeon to the Liverpool Northern Hospital.

CASE I. A young married women, aged about 20, was admitted into the Liverpool Northern Hospital on Feb. 26th, 1853, with compound fracture of the right parietal bone, with depression of the upper portion, which was firmly fixed beneath the lower portion, but not comminuted. The external wound of the coverings of the skull was about two inches in length; and the depressed part could be very easily seen, and felt by the finger. The injury was caused by a large slate, on a windy day, falling upon her head from a roof of a house whilst she was passing underneath. She was insensible for some time after she came to the hospital; but she gradually recovered from the state of unconsciousness; and when I first saw her, two hours after the receipt of the injury, she was then sensible, but said that things in the room appeared to turn round, and that she felt giddy, with slight confusion of ideas. I had seen similar cases in the course of four or five weeks terminating most unfavourably by the non-interfering plan, that is, permitting the depressed portion to remain, and thus causing irritation and ultimately terminating in suppuration, at which time, perhaps, the trephine would be applied, but in general at too late a period to be of any service. Although in this case there was not a complete state of insensibility, yet, from the unfavourable result of other cases which had been left without elevating the depressed portion of bone, it was deemed here advisable to do so. The trephine was applied; and several detached portions were removed. Immediately afterwards, the giddiness and other signs of confusion left her; and her recovery was complete in about two months. She has continued in a good state of health ever since.

CASE II. A woman, aged 55, was admitted into the hospital on January 2nd, 1854. She was engaged in assisting to carry a load of coal into a house, when a horse knocked her down, and afterwards kicked her over the frontal bone, producing a fracture with central depression just over the external angle of the orbit, on the right side, with a lacerated wound of the integuments over the seat of the fracture. There was a state of stupor immediately after the accident. On her arrival at the hospital, however, she was conscious, but in a state of collapse, from which she soon recovered. She had lost some blood from a branch of the temporal artery which had been divided. The wound was irregular, about two inches in extent, and on introducing the finger, the os frontis was found fractured, and a considerable portion of it comminuted, depressed, and wedged firmly under the upper portion of bone. The trephine was applied, and three detached portions were removed. The dura mater was slightly punctured by a spiculum of bone. The fracture extended, to all appearance, in the direction of the right orbit. This case, like the other, has daily progressed favourably since the operation; and she is now able to walk about the ward, not suffering from a single unfavourable symptom.

I wish to relate the following case out of many other similar cases which have fallen under my observation, in which the *non*-interfering plan was adopted.

CASE. COMPRESSION OF THE BRAIN FROM COMPOUND FRACTURE OF THE OS FRONTIS; SYMPTOMS OF COMPRESSION COMING ON FOUR WEEKS AFTER THE ACCIDENT. An Italian sailor, aged 30, was admitted into the Northern Hospital on