strong nitrate of silver solution, and insufflation of alum powder. His urine was albuminous, but increased in quantity. Symptoms of uræmia now supervened; namely, slow pulse, pain in the head, and dry retching; and next day there came violent convulsions, at first at intervals, and then all but constantly. His pulse was pausing every third or fourth beat, his respiration was very hurried and laboured, and at intervals a gush of grumous fluid like coffee-grounds, composed of altered blood, escaped from his nostrils, being thus ejected by the stomach. About eight ounces of blood were taken from his arm, and chloroform was then administered so often as the fit threatened to recur. We had him turned upon his side, when he became quiet, and slept for several hours. A fit again threatening, the chloroform was readministered. After this he slept well, and awoke to consciousness next morning, having no more convulsions or other uræmic symptoms; he was now passing urine freely, the secretion being aided by powders of bitartrate of potash and digitalis. This boy made a good recovery.

CASE II.—A boy, aged 11 years, had a mild attack of scarlet fever. Ten days after recovery he became slowly dropsical, without any marked febrile reaction; his urine was albuminous, contained tube-casts and renal epithelium in abundance, and ranged between three and four ounces in the twenty-four hours. He was purged freely, had warm baths, counterirritation to the loins, and diuretics, all to no purpose; he became more dropsical, and his urine rather diminished than increased. Symptoms of uræmia having begun to show themselves, I bled him to ten ounces. Immediate relief followed, and in forty hours afterwards he was passing urine in the quantity of twenty to thirty ounces daily, with a steady continued increase; the urine was still albuminous. He was kept strictly to bed, and had a warm bath every night for two weeks afterwards. The quantity of urine was now normal; the albumen was gone. Recovery was uninterrupted and satisfactory.

CASE III.—A boy, aged 6 years, after a slight attack of scarlet fever, became highly anasarous. The urine was reduced to two or three ounces in the twenty-four hours. He was ordered Mindererus' spirit, with antimonial wine and the warm bath, and his bowels were opened by the compound scammony powder; still there was no improvement. Digitalis infusion, with acetate of potash, was now substituted, but neither kidneys nor skin could be made to act. The dropsy went on increasing; his face was very puffy; the scrotum and penis were much swollen; he was very drowsy and complained of his head; symptoms of pulmonary congestion also appeared. Four leeches were now applied to the loins, and a very copious discharge of blood ensued, which hot linseed poultices much aided. The bleeding was difficult to control, and alarmed his parents, but no bad consequence followed. On the contrary, he began next day to pass urine in considerable quantity; a steady diuresis set in, and the boy made a good recovery.

CASE IV.—Into one of our infirmary wards a little boy, aged 5 years, entered with all the symptoms of scarlatina dropsy. Three members in this family had the scarlatina in a latent form, and all became dropsical. The little fellow referred to was quite water-logged, and of prodigious weight considering his age and size. He was purged freely, and had calomel and digitalis for several days; his loins were irritated with mustard sinapisms, but all to no purpose. He was then cupped over the loins, and four ounces of blood extracted. In forty-eight hours a free diuresis set in; he continued to pass urine in enormous quantities, and made a speedy and permanent recovery.

I could adduce several other cases of this kind where the beneficial effects of local depletion were sufficiently apparent; to do so, however, would be to extend this paper beyond due limits. I shall, therefore, conclude by the history of another case, which presented certain interesting exceptional peculiarities.

CASE V.—A delicate strumous boy, aged 8 years, had a sharp attack of scarlatina, with rather formidable throat-complication; from this he recovered, however, and all seemed to be going well. Fifteen days afterwards, febrile reaction set in; his urine became scanty and albuminous; and general anasarca supervened. He was purged smartly, had a mixture of acetate of ammonia and antimonial wine, and was sweated freely several times with hot bottles surrounded with moist flannel. The fever fell somewhat, and the urine increased, but in a few days he had returned to his old condition; the urine was more scanty, smoky, and albuminous; the fever was considerable; and he was becoming more anasarous. A repetition of the former remedies did not produce similar good results. Four leeches were now applied to the loins, followed by warm cataplasms; a large quantity of blood was discharged. In forty-eight hours the quantity of urine had increased; when boiled it did not indicate the presence of albumen. The kidneys continued to secrete more freely, and in eight days the dropsy was all but gone. Febrile reaction now, however, again appeared, the urine became scanty and bloody, and a second attack of dropsy (which I have never seen before in such cases) was ushered in by a convulsion

fit; this, however, did not return, and, as he had been freely depleted so recently, a moist vapour-bath, with acetate of ammonia and antimonial wine were preferred. The dropsy yielded speedily this time to the means specified, and a steady recovery followed.

It would seem that in this case the convulsions were not of an uræmic character, else they certainly would have returned and called for the use of the lancet. It is more likely they were produced by nerve-shock from an inflamed condition of important organs, such as the kidneys, just as we sometimes see in acute pneumonia occurring in young people.

We are not careful to reconcile the facts adduced with our modern ideas of inflammation, viewed from a histological standpoint, inasmuch as it is more rational to ask that theories should be remodelled to agree with facts, than facts altered to tally with theories. We frankly confess that depletion in pneumonia is injurious and not beneficial; we firmly maintain that it is highly beneficial in renal inflammation associated with scarlatina dropsy.* Both we believe to be facts unquestionable, but facts which *à priori* no modern theories of nutrition, normal or abnormal, could ever have led us to predicate. Let us hold then to the simple truths, that blood-letting is injurious in certain inflammations and curative in others, that at present we do not exactly see why it should be so, but so it is; and this we consider as a safer and better way to advance medical science, than to draw too hasty generalisations which would deprive us of a valuable remedy in not a few diseases where it is urgently needed, renal dropsy among the rest.

REMARKS ON PARACENTESIS PERICARDII.

By T. CLIFFORD ALLBUTT, M.A., M.D. Cantab., F.L.S.,
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THE case of Dropsy of the Pericardium, published by my friend and colleague Dr. Heaton, in the BRITISH MEDICAL JOURNAL for July 2, 1870, and his remarks upon the case, are so interesting and so important that I cannot refrain from adding a few comments of my own. Dr. Heaton makes especial reference to the value of tapping in cases of pericardial dropsy, and he alludes to a case in which this operation was successfully performed at my request by Mr. Wheelhouse. His attitude is naturally and properly one rather of distrust and of cautious criticism; and as I have, I believe, the responsibility of bringing this operation before the profession in this country and of urging the more frequent performance of it, from me some reply may fairly be expected. Dr. Heaton's observations add to our knowledge of the subject and of its difficulties, but I am still hopeful that these difficulties are only difficulties and nothing more.

Very fortunately, in the case before us no question of responsibility in the treatment can arise; the patient was either unseen by Dr. Heaton before his death, or he died before there was any opportunity of making an accurate examination of his state. The case was one of that kind of pericardial dropsy which I have called phthisical; it occurs in phthisical subjects, is unattended by obvious inflammation, is serous in character, is abundant in quantity, and tends rapidly to return when evacuated. We see the same characters in the hydrothorax which occurs in persons of the same constitution. In my lecture on this subject in the *Lancet*, I described it as "a form which, like some forms of pleurisy, runs silently and quickly to effusion, rather than to coagulating and organising products; a form, moreover, which, from the tendency to syncope from failure of the heart's action, has been called 'paralytic'" (*Lancet*, June 12th, 1869). It is well-known that changes suddenly produced are more dangerous than the same changes slowly established; and in the present case, I suppose from the elasticity of the pericardium when punctured, and from the quantity of fluid, which was rather the quantity of a recent than of a chronic effusion, that the dropsy came on quickly, and thus killed the patient by embarrassment of the heart. The same quantity of fluid ("eight or ten ounces") slowly poured out would probably have been well borne.

Dr. Heaton attributes death to the failure "of a feeble heart seriously encumbered." The heart is said to have been "well-contracted;" and, though it was "small," no note of any degeneration of its tissue is made, so that I should attribute death rather to the rapidity of the effusion than to the quantity of it.

Be this as it may, the presence of fluid near the heart is surely a condition of ever present danger. In summing up against the operation, even if the diagnosis had been made, Dr. Heaton considers as one

* Can any one tell us how it is that pneumonic inflammation has changed its type (if it have changed it), and renal inflammation, the effect of scarlatina, is so very conservative, still to prefer the old sthenic forms to asthenic ones? It is curious how certain alleged general changes of type should pick and choose in this strange select fashion; always assuming that the change-of-type theory is correct.

argument, "that our patient's habitual condition was not one of immediate danger". I am disposed, on the contrary, to think, first, that the condition was not a "habitual" one, but a recent one; and, secondly, that it was one of imminent danger. I can scarcely suppose, with Dr. Heaton, that "the fatal syncope could hardly have been anticipated." Dropsy of the pericardium is not common, but hydrothorax on the left side is rather common, and, as one of the reasons for my frequent resort to the trocar in these latter cases, I have constantly said to the students that patients with a pleura distended with fluid are in hourly danger of fatal syncope. Such a termination as that in Dr. Heaton's case, I think, occurs not uncommonly when we least expect it, especially in cases where the effusion has been rapidly poured out.

The elasticity of the pericardium discovered after death is very important. Oppolzer (*Vorlesungen*, Bd. I, Lief. i), among other *à priori* objections to the operation of tapping the pericardium, says that, as the pericardium is an inelastic bag without a vent, its fluid will not run out. Oppolzer's objections have about the value which such objections generally have; and, as to this one in particular, we see that in some cases, at least, the bag is elastic. We can count, therefore, on its reacting upon its contents, as well as upon the rising of the diaphragm and the expansion of the lungs. Dr. Heaton says that, after exposure of the pericardium, "from an accidental puncture, a jet of serum was discharged with some force;" and other persons present assured me that the jet rose to two feet in height, at least, and was visible from all parts of the room.

The next point of importance is that, in spite of its dropsy, the pericardium was overlapped by the left lung to the normal extent, or nearly so. I suppose this observation was made before the "accidental puncture" of the sack; but in any case I hesitate to rely upon the *post mortem* arrangement of the parts, uncontrolled by previous examination, as a guide of their arrangement during life. Many changes take place after death which tend to disturb the relations of the organs to each other. Granting, however, that this overlapping might have made the diagnosis difficult (and, if so, this is a most important clinical fact), yet I cannot see how it should "seriously increase the dangers of the operation." The space of normal dullness is surely amply sufficient for the insertion of the trocar; and, as a matter of fact, in both my cases the trocar was inserted at the upper border of the fifth left cartilage, about a third of an inch from the sternum, a puncture which, even in the present case, would have been perfectly safe. Careful percussion during life would, moreover, enable us easily to avoid any injury to overlying lung.

Dr. Heaton then goes on to say—"We must consider that the operation is never free from danger. This is, no doubt, true, not only of paracentesis pericardii, but of every interference with the human body. But is it quite fair to say, as a measure of this danger, that—"In the majority of cases, I believe, the result has been unfavourable?" Now, let us ask, first, what is meant by an unfavourable result? Clearly, it ought to mean that the operation was itself the cause of death, as in an unsuccessful ovariectomy or amputation; or that it hastened death, as in an unsuccessful tracheotomy; or, again, that while it was of no benefit to the patient, it added much to his suffering. I believe that even this last interpretation could not be established, and I feel sure that the first two could not. The pain of the operation is very slight; and, if performed with a fine trocar (Weiss, No. 1) is, I believe, wholly devoid of serious risk. Again, let us inquire how often the operation has been performed? I believe I am the only medical man who has had recourse to it in England. It has been performed for me once by Mr. Wheelhouse with striking success, in the case to which Dr. Heaton alludes; and Mr. Teale operated twice for me in a second case. In this latter case we had to deal with a "phthisical" effusion in a girl dying of rapid bronchitis of a consumptive character, probably of tubercular character. Her distress from the pericardial effusion was such, that Mr. Teale drew off the fluid for me twice with great relief to the poor girl, whose lung-malady, however, soon killed her. This case can scarcely be counted among the unfavourable results; but it might be placed on the other side.

On the continent the operation has been performed more frequently; but, on the whole, in a very few cases. My own impulse came from Trousseau, with whom I was for many months in close connection as a pupil. He said to me on two separate occasions, "If the need ever arise with you, tap the pericardium; the operation has never yet had a fair trial."

Trousseau was at one time in favour of operation by incision, but I believe that farther experience had modified his opinion. In most of the recorded cases tapping was done in chronic cases as a last resource, and had the success which belongs to last resources, or indeed something more; for Trousseau, Champouillon, and Aran, had each a successful case, with recovery. Henri Roger published a case in the *Union*

Médicale, No. 141, 1868, which resembles that under the care of Mr. Teale and myself. He twice punctured the pericardium in a chronic case, a girl, aged 11. He drew off 100 grammes by the first and 500 grammes by the second puncture, the sack having rapidly refilled. After the second puncture the heart-troubles wholly ceased, though at the time of writing, which was thirty days after the second operation, the girl was in great danger from the effects of disease and dropsy elsewhere. It is very important to observe here that the sac which filled twice did not fill again a third time. In estimating the failures of paracentesis pericardii, the kind of operation ought also to be noted. Riolan trepanned the sternum, but this procedure, supported though it was by the great name of Velpeau, has many dangers and disadvantages and no merits. The scalpel operations, again, whether thoracic (Trousseau) or epigastric (Larrey), are unnecessarily elaborate and have risks and drawbacks which do not belong to the puncture; while, on the other hand, the risks attributed to the trocar operation—the risk, for instance, from non-opposition of the orifices—are found in practice to have no reality. Finally, it is said that serious mistakes have been made in puncturing the pericardium for pleural dropsy or for no dropsy at all. Roux is said to have tapped a dilated heart; and perhaps the less said about it the better. Pleural dropsies, I admit, have been taken for pericardial, and the mistakes were made by no less men than Desault and Larrey. But, in these cases, the exudations were curiously circumscribed and pressed severely upon the heart; so that they were dropsies of the heart in a clinical, if not an anatomical sense. It is said that Skoda once tapped a medullary carcinoma of the mediastinum with the intention of relieving a distended pericardium; but a similar mistake has been made over and over again in cases supposed to be pleural dropsies, without prejudicing the operation of thoracentesis. So far, then, from discouraging the operation of paracentesis pericardii, I would urge upon my friend Dr. Heaton, and upon the profession, that the operation by trocar, if carefully performed, and performed after a careful physical examination, has few risks or none; that it is not an alarming or a very painful operation; and that it gives a chance of life or indeed a fair hope of life in many cases which are now abandoned to death.

CASE OF GRANULAR DEGENERATION OF THE VOLUNTARY MUSCLES.

By EDWARD MERYON, M.D.

I HAVE now under my care at the Infirmary for Epilepsy and Paralysis a case of degeneration of the voluntary muscles, such as I have described in two papers communicated to the Royal Medical and Chirurgical Society, and which the Council have done me the honour to publish in the *Transactions* for 1852 and 1866.

The subject of the present case is a girl aged ten, in whom the peculiar waddling gait is as yet the only symptom. There is, however, a gradually increasing weakness of the muscles of the back and legs, and an entire absence of any indication of nervous disturbance. The girl has neither ache nor pain, nor is there, at any time or under any circumstances, the quivering or starting of the diseased muscles which Cruveilhier has remarked in the cases which he has described as of "atrophie musculaire progressive."

When the patient was first admitted into the Infirmary, I hoped that I had detected a clue to the cause of the disease—as being in the semi-lunar ganglion—in consequence of pain in the region of the epigastrium, which occurred after any little exertion; but that pain was undoubtedly of a dyspeptic character; for no sooner was the child carefully fed than the pain vanished, and for the last seven weeks she has had none of it, notwithstanding that I have made her walk, and use gymnastic exercises as much as she is able to do. For about six weeks her power of walking remained nearly stationary. At one time, I thought it was somewhat improved; and during that time she was under the influence of arsenic.

About a fortnight ago, for no adequate reason, I discontinued the arsenic, and ordered the hypophosphite of soda, with a bitter tincture, and continued the faradisation which has been used from the day of her admission; but, during the period that she has taken the hypophosphite, she has rapidly lost power; so much so, that she can now scarcely stand without supporting herself with her hands. I have therefore resumed the use of the arsenic.

The girl is of healthy parentage, but has a sister, older than herself (about 14), who is similarly, but more, affected. She can no longer stand, and her arms are beginning to be implicated in the disease. A brother, not yet three years old, is already showing symptoms of the disease.