

treat objections to vaccination on the part of parents with consideration when they are entitled to it; to remedy the defects of vaccination procedure which experience has demonstrated; and, above all, to lose no opportunity of educating the public to judge intelligently for themselves on which side the truth lies.

(To be continued.)

A CASE OF INCOMPLETE RUPTURE OF THE RIGHT VENTRICLE, WITH ADHERENT PERICARDIUM.

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A MARRIED woman, aged seventy-seven years (at death), was admitted to the County Asylum, Whittingham, in July, 1876, suffering from chronic mania and secondary dementia. The notes soon after her admission state that she was in only moderate health, but no organic disease was found. Her weight on admission was 10 st. 10 lb. and she had since become exceedingly obese. There is no record of any serious illness during her stay in the asylum until September, 1892, when she was confined to bed for a few weeks with pyrexia, swelling of one knee and leg, and dyspnoea. The cardiac action had been feeble for the last ten years and she had been liable to cyanosis and swelling of the feet and ankles, but no cardiac bruit could be detected at any time. Mentally she had become more and more demented and childish and she had been subject to periodical attacks of excitement, being of late as a rule cheerful and garrulous with many senile delusions of identity. On Nov. 19th, 1897, after three or four sleepless and restless nights, she was noticed to have some dyspnoea and to be unusually cyanosed. The temperature was subnormal, the respirations were 23 per minute and laboured, and the pulse was 80, being very feeble. She was kept in bed and was treated with appropriate stimulants; she improved slightly until the 21st, when she rather suddenly became worse. The symptoms were collapse with very low temperature (94° F.), respirations from 30 to 44, shallow and laboured, much cyanosis of the face and extremities, cold sweats, vomiting with much catching, and retention of urine. The pulse was 80 per minute and almost imperceptible. She retained consciousness the whole time, and complained of difficulty in breathing and tightness across the chest, but owing to her mental condition it was uncertain whether there was any severe pain. During this time and for the next two or three days she slept fairly well at night and took nourishment freely. Her general condition remained much the same until the 24th when the dyspnoea became worse and she died at 10.50 P.M.

Necropsy.—A post-mortem examination was made on Nov. 25th at 2 P.M., when the body was found to be enormously obese. The brain showed thickening of the membranes, general cerebral atrophy, a morbid degree of sub-pial felting, and dilatation of the lateral ventricles, with granularity of the ependyma; there was also slight atheroma of the basal vessels. The pericardium was thickened and showed complete firm adhesion between its layers with no sign of recent inflammation. The heart was enlarged and globular. There was a considerable excess of epicardial fat and the walls of both ventricles were thickened. The right ventricle was much dilated and the left to a less extent. The right side of the heart was engorged with soft dark clot. In addition to the fatty overgrowth and infiltration in the walls the myocardium showed advanced fatty degeneration, especially that of the right ventricle, the muscular fibres being pale, soft, and friable—indeed scarcely distinguishable from the epicardial fat. On the anterior surface of the right ventricle immediately under the dense superficial stratum of the epicardium there was seen a small extravasation of soft, dark clot—about 2 cm. in diameter—slightly bulging the membrane outwards, and on section this was seen to communicate with the right ventricular cavity by an irregular narrow channel with ragged, softened, and reddened walls, a small clot connecting the extravasation on the surface with the mass of clot in the ventricle. The valves were healthy save for slight chronic

thickening of the mitral cusps and dilatation of the tricuspid orifice. The first part of the aorta showed some atheromatous degeneration. The weight of the heart was 450 grammes. Each lung weighed 420 grammes. There was emphysema of the free borders. The tissue was indurated, brown, and tough, with considerable cedema. Each pleural cavity contained about 340 c.c. of clear fluid. There were no pleuritic adhesions. The liver weighed 1120 grammes and was pale and friable. There were four irregular dark-brown calculi in the gall-bladder with a few cubic centimetres of almost colourless mucus. The spleen weighed 100 grammes and was pale, soft, and friable. The kidneys showed advanced chronic interstitial nephritis; a large amount of peri-renal fat was present. The stomach was dilated. The intestines were small and shrivelled in appearance. There were large deposits of fat in the omentum.

Remarks.—Rupture of the right ventricle is a comparatively rare occurrence, about three-fourths of the cases of cardiac rupture recorded having taken place in the left ventricle. In this case the rupture was evidently prevented from becoming complete by the firm pericardial adhesions. The conditions necessary to bring about changes in the myocardium favourable to the occurrence of rupture were many—fatty overgrowth, with great general obesity, senility, adherent pericardium, and chronic interstitial nephritis. One of the most prominent symptoms in such cases—namely, severe cardiac pain—appeared to be absent, but as stated above, owing to the patient's condition of dementia, this is not certain. For the clinical notes of this case I am indebted to my colleague, Dr. W. R. Dix.

Whittingham.

A CASE OF TETANUS COMPLICATING ULCERS OF THE LEG TREATED WITH ANTITOXIN; RECOVERY.¹

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THE patient was a woman, aged sixty years, who was admitted to the Wandsworth Infirmary on the evening of Aug. 19th, 1897. Her previous history was unimportant; she had had one attack of rheumatic fever and had suffered from ulceration of the right leg for about two years. Her present illness, as stated by a friend, dated from four days previously and commenced with stiffness of the lower jaw which had now become quite fixed, the patient being scarcely able to speak or swallow. She complained also of great pain in the jaws, at the back of the neck, and in her chest and back, more or less constant but subject to paroxysms of aggravation at varying intervals. On admission there were general rigidity of the whole body, retraction of the head and slight tendency to opisthotonos; marked trismus, the masseters being firmly contracted and the jaws closed; while the majority of the trunk muscles were also firmly contracted. The condition of the latter varied a good deal, especially that of the abdominal muscles which were at times much more tense than at others. There were slight spasms of the muscles of the head and trunk at varying intervals of from two or three to ten minutes accompanied by risus sardonicus, increased retraction of the head, and opisthotonos, but at no time were these so severe as to cause any distress in breathing though accompanied by a good deal of pain and cyanosis. The patient was emaciated and in a weakly state generally; sordes were present on the lips and she complained of great thirst. The tongue could not be seen and she could only swallow with great difficulty and in small quantities at a time. The heart's action was slightly irregular, the pulse 96, and the temperature subnormal. Two chronic ulcers were present in the lower part of the right leg on each lateral surface respectively; they were unhealthy in appearance the bases being covered with sloughs and foul discharge and the skin around inflamed. No other wound or breach of surface was present.

She was ordered rectal feeding and a supply of anti-tetanic serum was at once sent for, 10 c.c. (prepared by the British

¹ The patient was shown at a meeting of the South-West London Medical Society, Oct. 13th, 1897.

Institute of Preventive Medicine) being injected five hours later under the skin of the abdomen. On the following morning (Aug. 20th) she was in much the same condition, though the muscles of the lower jaw were rather more relaxed and the patient could swallow slightly better. The spasms were still occurring frequently but the intervals increased in length later in the day. At 3.30 P.M. 10 c.c. of serum were again injected, and at 8.30 she seemed decidedly better and was sleeping quietly. On Aug. 21st her condition was not markedly changed and, as the ulcers remained very foul in spite of frequent dressing, the patient was anaesthetised with chloroform, the surfaces were scraped, and strong carbolic lotion was vigorously applied. She also had another injection of serum in the morning and during the rest of the day the spasms were less frequent, this being no doubt in part due to the effects of the chloroform. The temperature rose slightly in the evening for the first time. On the 22nd she appeared to be worse, the spasms being more frequent and more severe than at any previous time and the temperature at 6 A.M. being 101.2° F.: 10 c.c. of serum were again injected and about half an hour later the spasms became decidedly less frequent, the patient appearing to be generally better in the evening. She was also ordered twenty grains each of bromide of potassium and chloral three times a day per rectum. She was still being fed by nutrient enemata and stimulants were given freely. On the 23rd she expressed herself as feeling better though complaining of pain in the ulcers which were still very unhealthy looking; the spasms were rather more frequent but the opisthotonos was less marked; 10 c.c. of serum were injected at 11 A.M. and at 12.30 P.M. there was no sign of spasms and the patient was sleeping quietly. The temperature in the evening was 98°. On the 24th her condition was unchanged, the spasms having recurred and being at times fairly frequent. Another injection was given in the morning. The ulcers now for the first time were noticed to be somewhat cleaner and the sloughs seemed separating. On the 25th there was no material change; an injection was given in the afternoon and the chloral and bromide mixture was omitted. On the 26th there was no improvement and in the evening the temperature rose slightly, the breathing became more rapid, and the spasms were occurring as before; 10 c.c. of serum were again injected in the evening. During the next two days no change of importance occurred. Another injection was given on the 27th about midnight. On the 29th she was worse, the ulcers also having become more offensive; the pulse was feeble and the temperature slightly raised. On the 30th no improvement in her general condition was noticed, though she appeared to swallow slightly better and could take some nourishment by the mouth; another injection of serum was given on this date. On the 31st there was decided diminution of the spasms and she could swallow well without their occurrence. The ulcers, however, showed no improvement and her general condition during the next two days was weaker if anything. On Sept. 2nd she had another injection, which was the last given. The spasms had now disappeared, and from this time she began to show signs of improvement. Two days later the ulcers also appeared to be healthier and their surfaces cleaner. On the 6th she was decidedly better and the muscles generally were more relaxed.

The further history of the case was uneventful and the patient improved steadily after this time. On Sept. 11th there was general relaxation of the trunk and neck muscles, though slight rigidity of the limbs on passive movement was noticed for two or three weeks afterwards. On the 15th she could open her mouth well and protrude her tongue, and the ulcers showed signs of healing. On Sept. 23rd she could sit up with assistance, but was still very weak. She continued to improve physically and the ulcers were healing steadily, but four or five weeks later she began to develop symptoms of melancholia associated with delusions of persecution, which unfortunately persisted and have since necessitated her removal to an asylum.

Remarks—Although numerous successful cases have now been recorded in connexion with the antitoxin treatment of tetanus and its efficacy I suppose, especially in those of the chronic variety and with long incubation period, conclusively established there are several points in the present case which I think are worthy of note; and first I would call attention to the nature of the wounds, one or both of which presumably gave access to the tetanus bacillus—viz., two chronic ulcers of the leg. The rarity with which such a common condition is complicated with tetanus is, I think,

of interest, and I have not been able to find a record of any similar case either among those recently published or in any text-book, the disease being, as is well known, most commonly associated with punctured, contused, or lacerated wounds, especially of the hands or feet. As to the exact means of infection and the period of incubation no definite facts could be obtained in this particular case.

With regard to the effects of the serum and its bearing on the ultimate result of the case of course nothing definite can be said, especially as other means were employed. It should be noted, however, that several of the injections, especially in the early part of the treatment, were followed by marked amelioration and diminution in the frequency of the spasms, and the influence of the antitoxin in this direction has been observed in many of the cases so treated which have been reported in the columns of THE LANCET, even amongst those with a fatal termination. The effect of the serum on the general condition was very doubtful, and though slight rise of temperature followed the earlier injections no constant result occurred. A temporary improvement certainly appeared to follow the first few but after this for about a week the patient seemed to become slightly and progressively worse, so that during this period little hope was entertained of her recovery. The fact that the ulcers showed no sign of improvement until the general symptoms abated is also a point of some interest, I think. The total number of injections given was eleven and beyond slight reddening of the skin and transient tenderness on one or two occasions no local disturbances were produced, the injections being given under the skin of the abdomen on every occasion. Part of the serum used was that prepared by the British Institute of Preventive Medicine, while the rest was prepared at the Pasteur Institute in Paris.

I am permitted to publish these notes through the kindness of Dr. J. Breward Neal, Medical Superintendent of the Infirmary.

New Wandsworth, S.W.

DIAPHRAGMATIC HERNIA; PERFORATION OF THE STOMACH.

By T. E. H. FISHER, M.R.C.S. ENG., L.R.C.P. LOND.

AT 6.30 P.M. on Oct. 18th I was called to see a man, aged fifty years. His history was as follows. He had suffered off and on from pain after food and distension for years. The pain was sometimes so severe that he rolled about the floor until vomiting relieved him. For the last two months these attacks had been more pronounced in character. On Oct. 17th he felt quite well until after taking a cup of tea about 5 P.M., when slight gastric pain, flatulence, and distension came on. The pain grew worse and kept him awake the greater part of the night. It was spasmodic and localised to the epigastrium. Next morning, feeling no better, he tried to make himself vomit, but only succeeded with difficulty in bringing up some mucus with a good deal of flatus. In the afternoon he vomited three or four times and was doing so when I arrived. He complained of nausea with pain and distension in the abdomen. The vomit shown me was an odourless brown fluid. On examination there was slight distension with resistance and tenderness in the epigastrium. On percussion a tympanitic note extended out to the anterior axillary line as high as the sixth rib, being bounded above by the normal cardiac dullness and apparently due to a dilated stomach. The lower abdomen moved well. The liver dullness was normal. With respect to the lungs nothing abnormal was detected save a few crepitations over the right. The heart was normal. The patient was ordered a bismuth mixture with fomentations and to have a soap-and-water enema with turpentine in the morning. When I saw him again (at 12 A.M. on Oct. 19th) he had had no more vomiting but the pain was worse. He was twisting about in bed bringing up flatus at intervals. The enema had brought away a soft formed motion with flatus. I ordered twenty grains of sulphate of zinc hourly for three doses. The emetic not acting at 4.30 P.M. I attempted to wash out the stomach with the ordinary rubber syphon. Half a pint of water was with difficulty introduced and immediately and forcibly thrown back, flatus accompanying it. On examination the epigastric