(12) *Exercise.*

One of the most important points for the physician to decide in treating a mental case is when to terminate the rest treatment and when to prescribe exercise, that is, when may the case be said to be beginning to convalesce. Of course, in a recovering or improving case there comes a time when further rest will tend to retard recovery, and when exercise will hasten it. In most cases, however, I feel sure it is much better to err on the side of an unduly prolonged rest than to work a weakened nervous system too soon.

During the stage of convalescence it is necessary to recall and perhaps educate and train all the mental and bodily faculties. We should attempt this in the most gradual manner, so as not to overtax the body in any way, and thus in time the patient will be adapted for his normal conditions of life. This is the part of treatment which is usually provided for better than any other in asylums, all the occupations and amusements benefiting in this way.

(1) Read at the meeting of the Northern and Midland Division of the Medico-Psychological Association, held at Beverley on October 22nd, 1908.

The Clinical and Post-mortem Aspects of the Status Lymphaticus.

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THE enormous importance of the disease under consideration is, I am sure, not adequately realised, and it is for this reason that I am particularly desirous of bringing the subject to the notice of members of the Medico-Psychological Association. In my opinion the status lymphaticus constitutes one of the most serious problems of medical science at the present time, especially in these days of deaths under anæsthetics.

The disease is characterised as being of great rarity, but I am convinced that this is far from the true state of affairs, and is only apparently so because the morbid changes are frequently missed on the *post-mortem* table. In instances of unexpected, and, perhaps, more or less sudden death, where very likely a dilemma arises at the necropsy, the death certificate must often

be signed "heart failure" to overcome the difficulty—of course, in all good faith. Again, in the large majority of sudden and unaccountable deaths in the country, no *post-mortem* examination whatever is held, and I regret to find that this is often true even on occasions of deaths under anæsthetics. With this it is probable that most of the cases have no chance of coming to light, and even when a necropsy is performed many medical men have not heard of the disease, and a far greater number would not be familiar with the changes to be found after death. Consequently one is not surprised, on writing to the Registrar-General at Somerset House, to learn that only on very rare occasions is "status lymphaticus" mentioned on death certificates, so rare that no record of such cases is kept. This being so it must appear paradoxical that I should have met with six cases in two and a half years. I have recently written a paper entitled "Clinical and *Post-mortem* Observations on the Status Lymphaticus, with Deductions, and a Plea against the Maligning of Ethyl Chloride as a General Anæsthetic," which was published in the *Lancet* of December 26th, 1908, and January 9th, 1909. Five of the cases are reported in this paper, and another very interesting instance having occurred since at the same asylum from which I obtained four of my previous cases, I am hoping that the editors of the *Journal of Mental Science* may be able to find room to publish this article. Moreover, the disease shows a marked association with epilepsy and many other hereditary neuroses, and as autopsies are universally performed at asylums, there should be here an excellent field for the further investigation of this ill-understood disease. Since writing the aforementioned paper, I notice in the last volume of Green's *Encyclopædia and Dictionary of Medicine and Surgery* (just published) that "Svehla found that the intravenous injection of thymus extract produces in dogs a great fall in blood-pressure and accleration of the heart, and, in lethal doses, dyspnœa and collapse," further bearing out my own observations and deductions in the human subject. Now some medical men are sceptical about the existence of such a disease as the status lymphaticus, and argue that because it has no very definite physical signs and symptoms, and can only be recognised with difficulty *post-mortem*, it must be made much clearer before it can be generally accepted as a cause of sudden death. True, the physical signs and symptoms are at present most indefinite,

but this is only because, as yet, so little is known about the disease, and unless it is considered more, this will remain so. It seems probable that there is some constant change in the blood, though at present no such change is recognised. It is certain, however, that sudden deaths are frequently attributable to this pathological condition only, and as to the *post-mortem* difficulties of recognition, these are not present. The morbid naked-eye changes are gross enough and very widely distributed, though unless one is familiar with the pathological picture, it is quite easy to miss it, for very explicable reasons. Those who regard the disease as non-proven ask, How often is the thymus found weighing about 1 oz., and how often are the mesenteric glands found about the size of a pea in other conditions where death has resulted from other obvious causes? If I am wrong here I shall be glad to be corrected, but, as far as I can make out, a persistent thymus gland is only met with in cases of status lymphaticus, thymus tod, exophthalmic goitre, and leukæmia, and less constantly in acromegaly, Hodgkin's disease and myxœdema, in all of which conditions it is quite unknown what part the thymus may play in the causation of death. It is common enough to find plenty of mesenteric glands about the size of a pea, but not so to find most or all of the smaller and more peripheral glands more or less universally enlarged when there is no infective disorder of the intestines, and no signs of a generalised tuberculosis. Then, again, the glands have a peculiar pink colour that I have never seen in any other disorder, and in addition to which the chain networks of miliary lymphatics in the stomach and intestines are invariably enlarged, etc. Sudden death in children, too, is not uncommon, and of errors made in the *post-mortem* examinations on children too little, rather than too much, significance is ascribed to the presence of a large thymus gland. In autopsies on infants about the age of two to four years, when the thymus gland should have attained roughly about its maximum development, and where a rather unexpected death has taken place, it is sometimes very difficult to know what predisposing or exciting contributory part, if any, the thymus may have played in the causation of the fatal termination. It is certain, however, that after the age of about sixteen years, only an atrophied, fibrous and fatty degenerated remnant ought to be discoverable. In Case 3, recorded in the *Lancet*, the

post-mortem examination had been quite completed, and it was only on talking over afterwards the unsatisfactory results of the necropsy, and discussing the inadequacy of the causes found to account for the unexpected and somewhat sudden death, that a re-examination was made and the status lymphaticus revealed. I mention this to show that on this occasion one argued backwards instead of from a fixed starting-point. To briefly summarise the clinical features of the disease, the physical signs and symptoms presented by it are, unfortunately, in our present state of knowledge practically *nil*. The disease must be regarded quite as much an "entity" as myxœdema is. Apparently it is one that has been insidiously at work for an unknown time till some either exceedingly trivial or most serious firing-off cause inexplicably gives rise to a fulminating termination. In "acute" cases this firing-off cause may be absurdly insignificant and yet sudden death occur, while in the more "chronic" forms the firing-off cause can be exceedingly serious and yet death take place not nearly as suddenly. In the acute cases the heart is affected suddenly, either very slightly prior to the respiratory system, or, more probably, both cardiac and pulmonary mechanisms are seized "suddenly and simultaneously." In the quasi-chronic cases the respiratory mechanism, if not definitely affected first, is certainly influenced to a greater extent than the cardiac. The derangement, of either or both, seems likely to be of central nervous origin. Deaths from the disease are commonest between the ages of fifteen and eighteen years, although they have been recorded in infants of only one year, or even younger, and in subjects as old as fifty years. Possibly females are affected a little less often than males, and an hereditary disposition has been proved. The disease is more common in subjects of a lymphatic diathesis, and in offsprings of a neuropathic stock. In this particular disease the persistent or enlarged thymus gland seldom, if ever, gives rise to any appreciable dulness to percussion behind the manubrium, but on the contrary, in my opinion, it lowers the upper border of superficial cardiac dulness by pushing the heart further away from the chest-wall in front, and interposing between it and the anterior surface of the right ventricle, a substance of much less solidity than that of the heart. In the absence of emphysema this, to me, would form rather an important physical sign of the "presence"

of the thymus. The thyroid gland frequently presents a slight general enlargement. The pulse may be a little weaker and more ill-sustained than usual, owing to a flaccidity and fatty degeneration of the heart that is not infrequently found after death. Either or both the liver and spleen may, or may not, be enlarged to such a variable extent that no reliance can be placed on the absence of physical signs of enlargement, and very little indeed, if any, on the presence of the same. The cervical and inguinal lymphatic glands are rarely more palpable than usual. The faucial tonsils somewhat frequently show a very variable amount of hyperplasia, and still more frequently is there present an also varying amount of adenoid growth. The so-called pharyngeal and lingual tonsils, and even the uvula, may present more or less enlargement, but the most tangible and trustworthy evidence, when present, is to be found in the tongue. Here the two rows of circumvallate papillæ, situate on the hindermost third of the dorsum and uniting in the middle line to form an obtuse-angled V, are conspicuously prominent, and posterior to these—*i.e.*, between these and the epiglottis—there is commonly present a great hypertrophy and hyperplasia of the lymphoid tissue. So marked can this be that the whole base of the tongue may be thickly covered by a multiplication of the lymphoid nodules, the larger of which would measure $\frac{1}{8}$ in. to $\frac{3}{16}$ in. in diameter. If such a condition be typically in evidence it should be considered practically pathognomonic of the status lymphaticus, but, unfortunately, its absence does not exclude the existence of the disease. The condition cannot be seen without the aid of forehead and laryngoscopic mirrors. Some writers have described a lymphocytosis as often being concomitant, but they add that the increase in the number of the lymphocytes is neither great nor constant. Others say that there is a diminution in the percentage of the hæmoglobin.

Post-mortem the morbid changes are gross and widely disseminated. Perhaps the first two features that should attract attention are the persistence and large size of the thymus gland. together with the co-existence of hæmolymph glands in the mesentery. Now, both of these can be quite easily overlooked. The thymus is rarely so large as to obtrusively present itself, but rather remains hidden at the root of the neck, partly covered by the inner extremities of the clavicles. Hence, unless one is either looking for its presence or methodically

considering every organ *seriatim*, it will easily escape notice, especially as in most asylums and hospitals it is not the usual practice to commence the incision at the symphysis mentis, and remove the tongue, trachea, œsophagus, heart, and lungs *en masse*. The hæmolymph glands in the mesentery, too, can easily be in great part concealed by an excess of fat in this situation, particularly as the subjects of the disease are often not emaciated. The thymus presents itself as a flattish, lobulated gland lying upon the large blood-vessels and auricles of the heart, and it often has a thin, fringe-like border which overlaps the upper part of the ventricles. It weighs about 6 to 10 drachms, usually approximately an ounce. Microscopic examination of its structure only shows a hyperplasia. The tongue may exhibit prominence of all the papillæ, but it is the circumvallate papillæ in particular that are often extremely prominent, between which and the epiglottis posteriorly there is frequently a great hypertrophy and hyperplasia of the lymphoid tissue, giving rise to a most striking condition. The whole base of the tongue may be thickly covered with numerous large, rounded, and prominent lymphatic nodules, many of which measure from $\frac{1}{8}$ in. to $\frac{3}{16}$ in. in diameter. Any or all of the faucial, pharyngeal, and lingual tonsils may show a greater or less amount of hyperplasia, likewise the uvula and adenoid growths may be present in small or large quantity. A few scattered lymphoid follicles may be noticeable in the œsophagus, through the lining mucous membrane, while the interior of the stomach may exhibit a complete chain network of lymphatic nodules, which is most marked in the fundus, and gradually fades away as the pyloric extremity is approached. A few much enlarged miliary lymphatics may be scattered here and there throughout the small intestines, while in the colon these may be very numerous indeed, and quite conspicuous through the peritoneal coat externally. Peyer's patches are often thickened, and are sometimes pinkish, or purplish-pink in colour. The mesenteric glands show a very variable enlargement. They are usually about the size of a small sweet-pea, seldom larger than that of a kidney bean, and sometimes they are scarcely enlarged at all. The central mesenteric glands are naturally bigger than the peripheral, but it is the more or less uniform and universal enlargement of the peripheral ones that is so noticeable. Further, the glands, on section and *in*

situ, have a peculiar characteristic pink colour, which colouration not only appears to be constant, but seems to vary in intensity with the acuteness or otherwise of the disease. If the exciting cause has been very trivial and yet sudden death has followed, the glands are dark pink in colour, while if the exciting cause has been a very grave one, yet even then death may not have been nearly so sudden, the glands are of a much paler pink and generally uniformly larger. Sometimes the majority are pale pink, and there are in addition a good many of a much darker shade also to be found, as though the latter had been affected by a super-added inflammation of more recent date. The lumbar lymphatic glands may on some occasions be possibly a little larger than normal, but usually they are apparently unaffected, and much the same may be said of the inguinal, cervical, bronchial, tracheal, and mediastinal glands. The thyroid gland often shows a slight general enlargement. The heart frequently exhibits evidence of a fatty degeneration of its walls, and the muscular substance is flabby and friable. The right ventricular wall is often unusually thin, that of the left ventricle is occasionally a little hypertrophied. The organ, *post-mortem*, does not convey the impression that it was the first to give out. Both ventricular cavities are invariably empty, and both auricular cavities usually contain practically no blood. Sometimes there is a small quantity of blood in the right auricle. The walls of the arteries are said to show a hypoplasia, and the lumen of the arch of the aorta is described as being in some cases constricted, though no reasons have been advanced as to why it should be. When death has been instantaneous and the heart and respiration have ceased synchronously, the lungs, *post-mortem*, are normal *in situ* and on section, but when respiratory distress has been the predominant feature of the dying phase—I do not mean an obstructive dyspnœa—then the lungs are both uniformly dark and congested. The spleen is sometimes enlarged, and to a variable extent. On section its substance is both darker and softer than normal, and the Malpighian corpuscles are conspicuous and prominent. The pancreas is normal. The liver may not be enlarged, or it can be slightly or even quite appreciably so. It is sometimes dark, and on section shows a uniform injection, which is, if anything, more marked at the periphery than in the centre of the lobules. This congested condition is most frequent and noticeable in

the acute cases. The organ at other times may be enlarged, its edges rounded, and section may reveal a general indistinctness of lobulation, with presence of fatty infiltration and degeneration. The kidneys are more often normal, but in two of my cases recorded in the *Lancet* there was present an acute nephritis, which, I believe, was another effect indicative of a toxæmia, which I am convinced exists. The condition of both kidneys resembled that of a fairly early stage of acute scarlatinal nephritis, and a *post-mortem* catheter specimen of the urine gave a neutral reaction to litmus, and on analysis showed a considerable cloud of albumen as being present; the possibility of a recent attack of scarlet fever was, of course, definitely excluded. Both kidneys here were dark red in colour, and on section a marked uniform injection was at once manifest. The cortex was normal in thickness, and both cortex and pyramids were dark red and congested. The capsules stripped readily, leaving a very finely granular surface. Lastly, the bone-marrow in the shafts of the long bones is said to be much darker than normal in subjects of this disease, though, I must confess, this I have not looked for.

For this sixth case, not recorded in the *Lancet*, I again wish to acknowledge my indebtedness to Dr. Hugh Kerr, Medical Superintendent of the Bucks County Asylum, and also to Dr. Corson.

History. — The patient was a female, unmarried, æt. 32. Her physique was good, height about 5 ft. 6 in., well nourished and proportioned, and presenting a strong and healthy general appearance. Here there was no history of epileptic fits in either the patient or her family, and although her general health, apparently, left little or nothing to be desired, yet for about one month past her mental equilibrium had been observed to be manifestly affected. The condition of her mind became worse and she became so excited that on January 7th, 1909, she was brought to Stone Asylum, near Aylesbury, for admission. On being seen by Dr. Corson in the reception room a few minutes after her arrival she was in an acute maniacal state. She was restless, exalted, and talkative, and walked briskly about the room looking at the pictures, making lively comments on them, and exhibiting considerable energy and vivacity. When the nurses requested her to accompany them (to the ward) she sharply refused, and on their gently taking her arm she shook them off somewhat violently, and showed a good deal of excitement and anger. No struggling took place, and no restraint was used. Immediately after this episode she consented to go in company with her sister, who was with her; she took about three steps forward and, metaphorically, "suddenly dropped down dead."

She fell on to her knees and forward into a prone position, lying partly on her left side with her face looking to the right. Patient then breathed about five or six times, lasting about ten or fifteen seconds, when respiratory movements ceased. Artificial respiration was at once performed, and after a few movements of this she gave just one natural inspiration. The pulse at the wrist was impalpable immediately after her fall, and the præcordium was not auscultated till about four minutes afterwards, when the heart-beat could not be heard. The pupils were observed to be dilated a few seconds after respiration ceased, but were not seen in the act of dilating.

Necropsy.—The typical pathological picture of the status lymphaticus was found, and no other recognisable morbid condition. *Rigor mortis* evident twenty-two hours after death. Thymus persistent as a lobulated gland lying on the pericardium, covering the commencement of the aorta and pulmonary artery and the anterior part of the right auricle. The uppermost portion of the gland covered the left innominate vein, and on the right side a part of it extended upwards superficial to the right innominate vein for a distance of half an inch. It weighed one ounce. Bronchial, tracheal and mediastinal glands were not enlarged. Tonsils normal to the sense of touch, no definite adenoid growths to be felt. The tongue showed unusual prominence of the circumvallate papillæ, and posterior to these, on the hindermost one-third of the tongue, the lymphoid tissue presented very numerous and marked rounded prominences beneath the mucous membrane. Mesenteric glands small, probably not much enlarged, but uniformly of a purplish-pink colour. Most of the glands were obscured by a considerable amount of fat in the omentum and mesentery. Lumbar glands showed no change, being practically white both externally and on section. Peyer's patches presented a purple congested appearance. Chained lymphatics in the stomach and intestines were not looked for, and none were noticed on account of the amount of adipose tissue present. The spleen was not enlarged, its substance was soft and friable, and the Malpighian corpuscles were very prominent. On examination of the heart, both ventricles were empty, the wall of the right ventricle was very thin, and much subpericardial fat was present. The foramen ovale persisted as a valvular aperture, but the heart in all other respects was not abnormal. Both lungs and both pleuræ were normal. The liver was enlarged and congested, and weighed sixty-three ounces. Both kidneys and supra-renals were normal. The right ovary was enlarged, and contained several small cysts filled with dark brown clot. The left ovary was less enlarged, but also contained small similar cysts.