CLINICAL LECTURE
ON MYXŒDEMA.

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GENTLEMEN,—By the kindness of two of my colleagues, Dr. Harley and Dr. Greenfield, I am able to show you two excellent specimens of the condition which I have ventured to call myxœdema. The two cases were severally recognised in the out-patient department by my colleagues, and were sent to Alice Ward for observation.

Your attention may first be directed to the general appearance. Both patients are adult women; both have swollen features and hands; in both the skin over the whole body is swollen and singularly dry and harsh to the touch, having very much the condition produced by washing in strong alkaline solutions. On the face the skin is semi-transparent, the eyelids and lips showing this particularly well. But neither on the face nor on the limbs does the skin pit on pressure. The hanging folds of the eyelids do not even yield to a firm pinch. In both women you will notice an even and persistent blush on the cheek, terminating by a sharp border at the lower border of the orbit, and standing in singular contrast with the bloodless eyelids which surround the eyes with two white circular areæ. The hands in both are much swollen. But, on comparing the cases, you will see that, in one, having a yellowish tint of skin, and who is much weaker than the other, the hands are much more swollen, the fingers shapeless, and the skin like dry leather. This patient, I may observe, shows the appearances described by Sir William Gull, in his account of a "cretinoid condition supervening in women in adult life"; and you will agree that the term "spade-like", used by Sir William Gull, is well applied to the hands before you.

Both patients have a placid expression, to which the thick expressionless lips much contribute. In fact, face and hands are both wanting in the expression which comes of active answering of sensations to impressions from without. When the patients speak, you will be struck by the slowness of their articulation and the monotony of the voice. Both speak nasally, with frequent interruption by the act of swallowing, and with little explosive sounds produced in the posterior nares, in these respects resembling persons suffering from tonsillitis. And, if you look into the mouth and throat, you will see that the soft palate, tongue, and cheeks are all swollen and œdematous. Besides speaking slowly, the patients will tell you that they can act only slowly; that all action requires a considerable initial effort, and is carried on slowly; so that they take twice as long, or even more, than formerly in completing the ordinary actions of life; for example, in dressing. They both walk in a tottering way, with a tremulous balancing at each step, as though the flexor and extensor muscles could not act in perfect harmony, and as if pendulum-like vibrations were set going by the efforts at adjustment. Both are subject to sudden falls when walking, caused, as an analysis of the accidents shows, by such a want of harmony going to an extreme, the flexors ceasing to act before the extensors have begun, and letting the body fall between the two. Although the co-ordination here is bad in respect of time-adjustment, there is no paralysis; and, although there is want of tone, there is no wasting of the muscles. In fact, both patients are well nourished. And, although the mental actions are slow, they are well performed. The patients can write well, have fairly good memories, and are painfully aware of their slowness. Sensation is everywhere perfect, but response always slow. In both, the urine is of average quantity, varying between two and three pints daily; is of average specific gravity, and contains no albumen or sugar. In both, the viscera generally give healthy indications, with the exception that the arteries are somewhat tense and hard, and that the second sound of the heart is in both accentuated over the aortic valves. The temperature in both is below the average by about a degree of Fahrenheit's scale. Both are married and have borne children. The condition which you are investigating was not observed in either till after the age of 20. Here is a photograph of one at the age of 16, showing a very different appearance. No portrait of the other exists. Both have been suffering from the swelling for between three and four years.

These two cases agree in all respects with the cases upon which I have founded the new term "myxœdema" and with the cases described by Sir William Gull as "cretinoid". The term "myxœdema" is used as an expression of the physical condition which I believe to be the true cause of the symptoms, and denotes the basis of the appearances to which the term "cretinoid" is perfectly fitted.

At first glance, the patients have the look of persons suffering from acute Bright's disease. For a long time, such cases were classed in my mind as rather singular cases of dropsy without albuminuria; and the occurrence of general anasarca without albuminuria is noted in treatises on diseases of the kidneys. But there are many circumstances which help to show that the cases before you, and others like them, are not primarily dependent upon renal disease, being, on the other hand, dependent upon states of the skin.

1. In these and other cases, there has existed, besides the doughy not-pitting œdema, a marked dryness and harshness of the skin. The chest of these patients is as rough as emery-paper, and as dry. There is no secretion of fat or moisture. There is perfect sensation, but slow recognition of impulses.

2. The movements of the limbs are slow, and there is a tottering, due to want of perfect harmony in the co-ordination of muscular actions as regards any moment of time.

3. The speech is slow in beginning, the articulation slow to painfulness, and the voice "leathery" in its intonation.

4. The thoughts are slow; the movements of the will slow; the momentum of thought considerable; the mental processes are ultimately well performed.

All these are symptoms such as would result from conditions interfering with the ready reception of peripheral impressions. Now, in one case, I had last year the opportunity of making full examination of the tissues after death, in addition to a partial examination during life. And the most important point noticed was a general tumefaction of the connective tissue in all parts of the body; the fibrillæ being particularly well defined, owing to the infiltration between them of a gelatinous substance; their number being greatly increased, and the nuclei of the tissue more abundant than usual. This infiltration appeared to me to be an overgrowth of the natural mucin-yielding cementing structure, and the resulting textures reminded me strongly of certain embryonic textures, in particular of that of the umbilical cord. As a test of this, I submitted parts myself, and afterwards asked Dr. Charles to submit skin on a large scale, to chemical examination. The result was that, while, in ordinary skin and connective tissue, and in the skin of anasarcous patients, there was a barely weighable proportion of mucin, the skin of the myxœdematous case yielded several hundred times as much—this very weighable quantity here exhibited.

In the skin, this sort of material was found forming a pad round and in the touch-corpuscles. Now, suppose every nerve-end of the periphery thus padded, and bear in mind, at the same time, the effect produced by lightly padding the external auditory meatus with cotton-wool. You lose volume, at all events, in respect of impressions, and lose also acuteness, and acquire slowness in the reception of them. Consider what this means when the periphery is largely or entirely involved: how, first, the relation of the body to impressions from without must be changed. Remember what an effect upon the central nervous system a widely extended surface-lesion of the most superficial kind may produce: the fatal effect of a scald:—similarly of surface-impressions, the bracing influence of dry keen atmosphere; the depressing influence of a damp close one; the various effects of baths. In close observation of the sick, you will always see that a persistent failure of the action of the skin is attended with nerve-symptoms having the character of depression. These are often supposed to be due to retention of poisons which ought to be eliminated by the skin. There is better reason, however, to attribute them to the alteration of peripheral nerves, of which the want of action is a result. I have seen more than one case in which torpor and a slow perception were associated with a permanent dryness and harshness of skin, where, on the use of a hot-air bath or other means of inducing perspiration, the symptoms passed away at once, to return at once on the passing off of the perspiration. The want of action in these cases may be due either to compression of glands or to failure of the reflex actions upon which secretion depends. The microscope shows the glands to be greatly attenuated and encroached upon; but disease may well account for this. We may compare the effects of varnishing the skin in animals. Valentin and Edenhuizen have shown that the coating of the skin of rabbits with impermeable varnish is followed by rapid loss of temperature, by remarkable slowness of respiration and by speedy death, the fatal effect following when no more than one-sixth of the entire surface is thus treated. And, though Senator has treated men similarly without producing the same effects, the analogy holds good for our purpose.

If a temporary failure of normal peripheral stimulation be sufficient to produce torpor, the long-continued influence of even a slight failure may be expected to be followed by an increasing torpor of the centres, just as a paralysed limb wastes for want of exercise. And so one would expect the slowness in voluntary movements and the slowness in thought to follow the first sense of mere heaviness or sluggishness. In more advanced cases than these before you, the increase of lethargy becomes most distressing. The day is spent in overtaking the duties which ought to have been over in the first hour of it. The muscular errors become so marked that frequent falls occur. One lady under my observation broke both ligamenta patellæ in succession, owing to the wide separation of the action of flexors and extensors, the latter contracting, during a fall produced by this want of punctuality, just in time to cause the fracture. The same patient habitually walked in a singular tottering way, quivering from head to foot as each step was taken. Her head hung on her chest, in consequence of the incapacity of the will to maintain muscular action, and the thick blubber lips, swollen eyelids, and dribbling saliva completed a very cretin-like picture indeed.

In relation to muscular movements, any padding of muscular nerves would be likely to cause slowness of transmission of impressions of contractions, and so make the first step in the failure of co-ordination.

The two cases which I have followed to a fatal termination, the one after eight years, the other after five years of observation, both ended by way of renal disease. In one, a *post mortem* examination was made, as already noted. The kidneys here shared the condition of the skin. There was enormous interstitial growth of connective tissue of this soft gelatinous kind by which the secretory tissue was compressed and the early stage of granular kidney in part imitated. The same invasion had occurred in other organs, notably in the liver and heart; but I could not satisfy myself of the existence of the same or any parallel condition in the central organs of the nervous system. Specimens of skin from various parts, of kidneys, liver, heart, brain, and cord, are here under the microscope.

Reviewing the cases which have been under my notice, I may state that all were women of adult age; some married, some not. Of the married, some had children even after the dropsical condition had been well developed; there was not any known taint of syphilis in any, nor any general history of excess in food or stimulants. All shared the state of skin and the characteristic face, the absence of albuminuria, the slowness of perception, thought, and action, particularly of speech. In all the affection was general and progressive. There are a few maladies from which it may be necessary to distinguish this:

1. *From Bright's Disease.*—The variety of states included under this head is very great, and it is true that the fatal termination in the two cases followed to an end was by uræmia. But, unless the definition of Bright's disease is very much extended, it is hard to include under it cases in which, with a mucin-yielding gelatinous dropsy, a complete absence of albuminuria is observed during many years; to say nothing of the nervous symptoms so definite in their character.

2. *From Sclerema and Allied Conditions.*—In these, the skin is hard instead of soft; the affection is a local one; there is a tendency to healing at one point and extension to another: three points which completely separate the two affections.

3. *Cretinism.*—In relation to this, I now cite a point to which I have not previously directed your attention. Examining the throat and neck of both cases, you will find little or no trace of a thyroid body and a decided resilient fulness on both sides of the neck above the clavicles. These are conditions that have been noted in two cases of idiocy by Mr. Curling, and in a series of cases of cretinoid idiocy by Dr. Fagge. In Mr. Curling's cases, there was complete absence of the thyroid, and the supraclavicular masses were composed of fat—of adipose tissue.

In the fatal case examined by me, the thyroid was reduced to about a fourth of its natural size, and, being flattened against the larynx, was hardly felt during life. Its normal structure was almost entirely wanting, being replaced by myxœdematous infiltration. The absence of a thyroid gland in cases of cretinoid idiocy is certainly curious, goître being very abundant in regions where cretinism is endemic. But, in these regions, the concurrence of goître with cretinism is not the rule, only about one-third of the crétins having goître. In fact, Dr. Fagge argues that goître is a protection against cretinism, and supports his argument by citing these cretinoid cases in which the thyroid is deficient.

In comparing these cases with cases of cretinism, it must be observed that many crétins are œdematous, often from birth; and that cretinism is a condition which gradually developes after birth. In many cases, it is difficult to decide whether a child born under suspicious circumstances is going to be a crétin, and children born apparently healthy do not become crétins after four or five years of age. Now, as the appearance of a decided crétin is absolutely characteristic, it follows that the change is a gradual and acquired one. Supposing a child to be born with a myxœdema, cutting it off from the first day of life from the external influences by which the education of its senses and sentient nerves should be effected, it is also cut off from the stimulations by which the central nervous system is kept in exercise and made to nourish itself. In proportion as the padding of nerves is effective, the child is reduced to the condition of a tunicate animal; reverts, in fact, to the condition of its far distant ancestor, and remains a bag of viscera with ill-developed brain, with misshapen limbs and unformed skull;—in the complete outcome of cretinism an organic being certainly, but not a human being.

The *post mortem* examinations of crétins demonstrate the existence of great imperfection in the development of the brain, and correlated imperfection in the development of the skull, particularly of the base of the skull; the growth and shaping of the bones being dependent on, and proportional to, the growth and shaping of the contained organs. The skin of crétins is hard, thick, and leathery; their movements are slow, their gait tottering, and their limbs small and feeble. These are all things which would agree with an hypothesis that cretinism began as a simple general myxœdema; and I hope some day or other to investigate this subject further in the regions where cretinism is endemic.

The sketch now put before you will be enough, in conjunction with the cases upon which the remarks are founded, to prove to you, first, that there exists a substantive affection in which a gelatinous dropsy without albuminuria is associated with a cession of the normal cutaneous secretion and with certain well marked nerve-symptoms of a bradæsthetic kind; second, that the various symptoms may be explained by the existence of the gelatinous dropsy; third, that this gelatinous dropsy consists in an excessive formation of the elements of connective tissue, particularly of the mucin-yielding or cementing element; the state here acquired resembling an embryonic state to which it may be a reversion or degeneration. This idea of reversion or degeneration is indeed, I am inclined to think, the ultimate explanation of the whole process.

If you have followed me carefully in the short analytical exposition of the relation between central nervous system and periphery, you will have had your attention drawn to the fact that the centre is very dependent on the periphery, particularly as respects its nutrition, which is determined by the due exercise of its function of reception and response. We are accustomed to see the centre in the position of control. We must also be accustomed to see the periphery in control, conditioning by regularly ordered stimulation the very existence of central power. To this influence of the periphery you will learn, as your experience grows, to give an increasing attention; and, if no other lesson be learned to-day, this one at least is of great practical value.

OBSTETRIC MEMORANDA.

CASE OF COMPLETE INVERSION OF THE UTERUS SUCCESSFULLY REDUCED.

THE case, to which I was called, occurred in the practice of a friend. Mrs. T. was confined of her ninth child on March 11th, 1878. The labour was not a rapid one, but normal in every respect to the completion of the second stage. No unusual traction was made on the cord, I am assured, when suddenly the placenta, which was adherent to the uterus, was expelled, together with the inverted uterus, beyond the vagina. The adherent placenta was at once separated, and the uterus returned into the vagina. Seeing the gravity of the case, and wishing to share the responsibility with another, my friend sent to ask my assistance. I found the inverted uterus lying in the vagina, with its spongy-like surface, from which there was considerable oozing of blood. On a first attempt at reduction, the uterus proved unyielding. I then grasped the tumour at its superior extremity, gently compressing it, when it relaxed a little. A steady upward pressure on the fundus with the back of the hand and knuckles in a few moments effected reduction, the organ suddenly leaving the hand, as Churchill describes it, "like a bottle of India-rubber when turned inside out". On placing the hand on the abdomen, the restored uterus could now be felt in its natural position above the pubes, and well contracted. The comparative facility by which reduction took place was no doubt owing to the immediate diagnosis and prompt treatment of the case, not more than half an hour elapsing between the inversion and the replacement. The patient had no untoward symptoms, and made a good recovery.

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