PSYCHOLOGICAL ASPECTS OF INSULIN SHOCK THERAPY: A PSYCHOSOMATIC STUDY.*

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ALL those who have worked with insulin will have been impressed by the great freeing of behaviour that the patients exhibit. It is seen in the hypoglycæmic state, before coma sets in, and as the patient returns to consciousness after interruption of the coma. The degree of this freeing varies directly with the prognosis. In this uninhibited state the anatomy, the very bones of the personality, can be studied, and the physician's observations should be able to establish the main outlines of the pathology of the total personality—the psycho-pathology.

Those patients that recover with insight can describe their feelings while they were ill. All my cases have agreed that the predominating thing is lack of interest in persons and things. Two of my cases said that they were not even interested in themselves, but they did not make clear whether they meant their body or their mind. They do not perceive vividly. The most dramatic example of this was the patient R—. He woke up after interruption one morning crying out, "Oh the beautiful colours, lovely blues and greens" (the colour scheme of the ward). He repeated it many times, and then explained that everything had looked a sort of grey throughout his nine months' illness. His illness had coincided with the imminence of his wife's first child, and one of his prominent delusions was that he had no penis. He said that he had been able to feel something with his hand and see it with his eyes, but could not see it as a penis. That is to say, he could not perceive penis. Other patients have said that things had looked hazy and that the nature of objects had not been clear. Within the limits of this paper it is not possible to multiply instances, but working on the above observations of patients themselves we have two suggestions to make. Perception in these cases has been grossly impaired, and at the same time there has been an inability to achieve interest. I will later develop an interpretation of this, suggesting that the lack of interest is due to the lack of perception.

I have treated 55 cases and have attended them throughout. In the early days I was much troubled with delayed recovery from coma, but it is now rare. C. S— used to be difficult in this respect. One day he was still comatose, with a

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positive Babinski sign, one hour after interruption of the coma. We bounced the bed up and down and presently he started to co-operate in the bouncing movement. A few minutes later he stretched out his hands to my tie, which was dangling in front of him, and clutched at it like a baby. Presently he sat up in an inco-ordinate sort of way and spoke baby-talk. Actually the first word he said was "goo". When he made the first purposive movements the Babinski sign was still positive, but when it was tested after he had started talking it was indeterminate. The Babinski sign is the infantile form of the plantar reflex.

Working on the hint, this patient was stimulated as one would a baby every day after interruption of the coma, and he never had another delayed coma. This, as we call it, "mothering" has been adopted as the standard technique. I believe that the recent rarity of delayed coma in our patients is due to the technique.

Each patient has one of the nurses or myself as "mother-surrogate". Every effort is made to establish a *rapport* as the patient returns to consciousness. He is actually stroked and embraced. It is of the greatest use in the very apathetic type of patient. His first interest is in the person mothering him as he returns to full consciousness.

The emotional *rapport* is first of all crude and infantile, and is only observed in the half stuporous condition between coma and consciousness after interruption of the coma. During the first few days, as soon as full consciousness returns, the patient relapses into apathy. Later he retains the warm feeling to his mother-surrogate but deals with it on a higher plane. He becomes self-critical, and only manifests his affection to an extent that does not make a fool of him.

In some of these dull apathetic patients, however, *rapport* did not occur. I therefore started to play with their lips as soon as they had had their glucose. In every case they started to make movements towards the stimulating fingers and began to suck them. I found that there was a critical time at which one must pass from the oral zone stimulation to embracing the patient, or else the patient rejected the oral stimulus and relapsed into the unstimulatable, apathetic condition. If, however, the zone stimulation was not persevered with sufficiently long, the patient was not brought out of his apathy. As several patients come out together, we procured an ordinary baby's dummy. When a patient got to the sucking stage, I slipped the dummy in, left him sucking it and went on to the next patient until he was ready for the dummy, when I would return to the first patient and give him the more mature mothering technique.

After a few days it happens that as the patient comes out from the physical mothering stage he will begin to talk about himself, and it is then possible to start psychotherapeutic talks. At this stage the patient uncovers a lot of hitherto unconscious (or at least unexpressed) material—the inhibiting apparatus is relaxed.

On one particularly suitable subject, very apathetic, and so withdrawn from

the world that he did not respond to an auditory stimulus before treatment, I actually experimented. On some days I did the oral stimulation, on others not. On five stimulation technique days he came out of his coma bright and alert ; on five non-stimulation days he came out dull and apathetic. Another interesting observation on this case was that on one day, when a sudden crisis in another patient interrupted me and I handed over the job to a nurse, the nurse kept pushing the oral stimulation and the baby talk too long—until the patient returned to full consciousness—and the patient remained in a childish state all day.

Whilst stimulating one of the patients' oral zone, I noticed that I got a very distinct tension in my own lips. This occurred on every occasion when I did this stimulating. I wondered if the feeling had been accidental in the first instance and thereafter enhanced it by suggestion. I therefore did a control experiment and got four nurses to carry on with the oral stimulation. Two of the nurses sucked and smacked their own lips ; one leant on his hand and sucked it ; the fourth, a man over fifty, actually started to suck his own thumb. I had three observers who confirmed the findings. I then explained to the subjects that they had been the subjects of an experiment, and they indignantly denied that they had manifested any oral behaviour. I got them to repeat the experiment and they immediately noticed a very definite feeling in their own lips. I conclude, therefore, that when one is emotionally interested in somebody else's mouth, accompanying the "emotional" feeling is oral behaviour and sensation in one's self. (Note that each of the above four nurses said that they had a warm affection for the patients in question and that they were all habituated to mothering the patients.)

Now the Lange-James theory regarded emotion as a visceral change felt at a high level. Cannon regards it, briefly, as thalamic sensation, and recently Papez (1) has advanced and largely substantiated the theory that four structures in the diencephalic region, the hypothalamus, the mamillary body, the gyrus cinguli and the hippocampus, represent the anatomical basis of the emotions. Reduced to its simplest terms, this theory (based on clinical, pathological and anatomical fact) maintains that the hypothalamus is a clearing station (where feeling tone is added) for sense impressions coming in from the body. The mamillary body transmits the impulse to the gyrus cinguli, whence it is conveyed via the bundle of Vicq d'Azyr to the thalamus, whence it reaches the cortex and is perceived.

This complex of nerve currents, cortex, thalamus, hypothalamus, body, constitutes the total emotional response ; it is normally felt as a whole, but (as the lip experiment shows) it can be analysed into components.

Adequate total emotional response is essential to normal behaviour. If there be a lesion in any part of the anatomical complex, total emotion (and therefore normal behaviour) will be impossible.

Our case that suddenly began to see colours fully must have broken through a pathway along these channels that had not been functioning. I have another

patient that is instructive. He believed that persons were making his larynx and his limb muscles move by some sort of wireless apparatus. He does not believe that now, but still feels the laryngeal movements and the limb movements —he is so much better that he does not put a psychotic interpretation on it Surely he has a lesion of function which is somewhat more proximal than what there was in the colour case.

The pathology of the third ventricles shows that lesions there cause effects identical with the effects of insulin and cardiazol. If, then, the third ventricle is the site of action of insulin and cardiazol, and if the third ventricle is important in perception and if perception is affected in schizophrenia, we are much nearer to understanding why these new treatments are effective.

From the purely psychological point of view we have shown that we have evidence that what the patients have felt has been a loss of interest ; we have demonstrated that in at least these cases sensation (and therefore necessarily perception) has suffered a lesion : is it, then, any wonder that meaning change in the schizophrenic ? For meaning is interest applied to sensation. If sensation suffers there can be no using of interest. With a lesion in the sensation apparatus, the world must lose its meaning to the sufferer—he must have the germs of a schizophrenia.

REFERENCE.

PAPEZ.—"A Proposed Mechanism for Emotion", *Arch. Neur. and Psychiat.*, October, 1937, xxxviii, p. 725.