

PROLONGED MEMORY DEFECTS FOLLOWING ELECTRO-THERAPY.*

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LEVY *et al.* (1942) reported impaired memory in 8 out of 11 patients treated by electric shock. Impairment lasted from one to several weeks, and in one patient was present after several months. Grinker, discussing this paper, compared the psychometric and clinical picture following electro-therapy with that seen in the "punch drunk" syndrome, in which careful testing, he warned, reveals permanent damage. This to my best knowledge is the only note hitherto made that impairment of memory occurring during or after electro-therapy has any serious significance. The following case-notes revealing memory defects lasting a year or more suggest that Grinker's apprehensions may be justified.

CASE 1.—Unmarried female, aged 48. Admitted with manic-depressive insanity in a depressed phase. She had 15 treatments in September and October, 1941, of which six produced *grands mals*. During the treatment she complained that she could not remember names and addresses of relatives and familiar friends. She became very apprehensive of the treatment, which she said was making her worse. She was discharged recovered in May, 1943. Interviewed recently, more than two years after treatment, she was well and working, but said that her memory still let her down sometimes. She said, "I cannot seem to remember but it comes back later on. It takes me a long time to remember. My memory seems 'slower.' It lets me down over just small things that I am doing, like posting a letter." She still finds it difficult to remember people's names, an especially striking example occurring only a few weeks ago. At first, she said, it used to worry her, but now "it does not because it is so much better." Her memory improved for about six months after the end of treatment, but has not changed since then.

An interesting point in this case is that a few months previous to her course of electro-therapy she had undergone a course of cardiazol treatment, which is usually thought to cause more apprehension and to be more unpleasant than electro-therapy. Nevertheless she had continued with this treatment, and had not complained of memory impairment either during the course or afterwards, whereas her electro-therapy had to be terminated because her memory disturbance worried her so much.

CASE 2.—Married female, aged 32. An hysterical type, admitted with superimposed acute depression. She had four treatments, all of which produced *grands mals*, in March and April, 1942. She bitterly complained after each of memory disturbance, and the treatment was eventually stopped because, for this reason, she opposed it so strongly. She was discharged from hospital in April, 1942. She was readmitted for three weeks in November and December, 1943, with mild reactive depression, which rapidly cleared on adjusting the environmental situation which had precipitated it.

Seen 18 months after electro-therapy, she said her memory still failed her at times. "Incidents," she said, "occur on and off. I can go several weeks without trouble and then might get two or three in a day. One day three things were missing, the poker, the paper, and something else I cannot remember. I found the poker in the dustbin; I must have put it there without remembering. We never found the paper and I am always very careful of the paper." In her household duties: "I want to go and do things and go to do it and find I have already done it." She further explained: "For example, I looked for the duster in a drawer to dust another room. I looked all over for it and found that I had taken it into the room which I was going to dust. . . . I have to think what I am doing so that I know I have done it. . . . it is uncanny when you do things and find you cannot remember it." She, too, has difficulty when meeting friends: "I have met one or two people who seem to know all about me and I cannot remember anything about them. I look silly at them and I get frightened of meeting people." Her memory let her down in other ways too, but she found it impossible to describe them.

CASE 3.—Widow, aged 54, admitted with mild arteriosclerosis and hypochondriasis. She

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had twelve treatments in July and August, 1942, with six *grands mals*. She was discharged from hospital in September, 1942. During the treatment she complained that she could not remember the addresses of her son and of other near relatives, nor the details of her financial affairs. Seen 18 months after the end of treatment, she admitted that her memory still lets her down. She also finds that her memory fails her mainly in familiar matters, such as placing people who seem to know all about her, thus embarrassing her. A striking example was that—"The other day I went to see some relatives. I have been there a lot and I know the house very well. I wanted to go to the lavatory and I went upstairs and could not find it. I had forgotten that it was on the ground floor." She, too, said that her memory repeatedly failed her, but she could not remember all the incidents. Her memory had improved for about nine months after treatment, but had since been stationary. "I do not think about it much because it is so much better, but it used to worry me a lot."

CASE 4.—Married female, aged 45, admitted with agitated melancholia. She had a full course of electro-therapy in March and April, 1942, and was discharged recovered a month later. When she left hospital she was still complaining of some impairment of memory, particularly failure to remember place-names and addresses. This improved after a few weeks. She was readmitted in December, 1942, again in an agitated, depressed, and auto-accusatory condition. She still complained of some failure in memory, but this was thought to be due, not to her previous treatment, but to her preoccupation with somato-psychic delusions. Fourteen electric treatments were given between December 17, 1942, and January 4, 1943, of which only two produced *grands mals*. She was discharged recovered on January 6, 1943, and has remained well since.

On her return home she found her memory to be so bad that it worried her considerably. She found she could not recall how to cook dishes with which she was very familiar, and had to refer constantly to the cookery book. She could not remember where she had been accustomed to put things in her kitchen. She also complained of inability to remember names of places and persons, where she had met people, and so on. It must be remembered that she had been in hospital on the second occasion for only five weeks and that she was now cheerful and composed, and, although worried, quite ready, if the worst came to the worst, to accept this disturbance of memory as the price of her recovery. Matters improved in the next six months; but a year later she was still having difficulty with her memory. She wrote in January, 1944: "I find that my memory is now quite good for all practical purposes. I have accepted the fact that there are one or two apparently *permanent* blanks, but these do not hinder me from efficiently carrying out my daily duties. On occasions minor embarrassments have occurred, but, being well, I have been able to laugh them off. Perhaps I make more written notes of things than I used to, but I believe this is mostly necessary as one gets older." Pressed for further details she wrote: "Regarding the blanks I can only explain by giving one or two examples. I originally had a very good memory for places and people. About two years ago we moved into this house. I have not the slightest recollection of taking it over, or seeing it beforehand. Although detailed measurements in my own handwriting were produced, it awakened not the slightest chord of memory. Occasionally I concentrate in a determined manner, but so far can remember nothing more. Facing me on the opposite side of the road is the house I moved out of. I have entirely forgotten the layout of the upper part of the house, but know the lower floor perfectly. Three years ago (approximately) I undertook a journey to enter hospital for an operation on the rectum. I have a great interest in travel, yet I can remember nothing of the journey, the building, or the return home. I have just a memory of a painful recovery after the operation, and, as I progressed, a daily bath taken in a surprisingly rusty bath. I was not worried when I set out, and it was not my first operation and I can remember every detail of previous ones. There are many faces I see that I know I *should* know quite a lot about, but in only a few cases can I recall incidents connected with them. I find that I can adjust myself to these circumstances by being very careful in making strong denials, as fresh personal incidents constantly crop up. I do not worry over it, and find that I can manage very well, and am quite efficient in carrying out my duties. I am bright and alert, and see no reason to be concerned about patchy memories of the past." By "being careful in making strong denials" she means that although she may not remember people who meet her and claim to know her, she does not therefore deny their acquaintanceship.

CASE 5.—Widow, aged 41, suffering from anxiety neurosis. This woman, an out-patient not admitted to hospital, had seven treatments with five *grands mals*, the last early in March, 1943. Following this she was enormously improved, but complained that she was very forgetful. A year later she still cannot rely on her memory. In a letter she says: "The following are some of the things I forget: The names of people and places. When the title of a book is mentioned I may have a vague idea I have read it, but cannot recall what it is about. The same applies to films. My family tell me the outlines and I am able to recall other things at the same time. I forget to post letters and to buy small things, such as mending and toothpaste. I put things away in such safe places that when they are wanted again it takes hours to find them. This is not very clear, I am afraid, but it is difficult to explain. It did seem as if after the electric treatment there was only the present and the past had to be recalled a little at a time." She is positive about the disturbance of her recall for place-names. A much travelled woman, she used to be able to recall the places that she had visited very clearly in detail and by name. Now she finds this very difficult. An interesting point she made is that her memory improved when her daughter was called up, thus lessening her household responsibilities. During her daughter's

week-end leave, when responsibilities and calls on her memory returned to their previous level, she again exhibited defects on which her children commented before she herself noticed them. She is not unduly worried by her disturbance and, like patient No. 4, willingly accepts it as the price of her improvement.

More patients could be quoted, but I have deliberately selected only from those who are fully recovered from their other symptoms, out of hospital, and whose statements cannot justifiably be accounted for by depression, feeling of inadequacy, disturbance of the stream of thought or other such psychotic or neurotic abnormalities. Only one patient had arteriosclerosis and that mildly, and none was at an age when it could be argued that incipient senile dementia was revealed with the passing of more striking psychotic or psycho-neurotic symptoms. Further, most of the statements were made, not as complaints, but as items of interest. The similarity of the statements is also convincing.

The memory disturbance seems to be mainly in connection with long-known familiar material, particularly names of persons and places and habits of work. Three of the patients make the point that they have to observe themselves carefully or to make notes so as not to forget to perform, or that they have already performed, routine items of their daily work. Here, again, long-known familiar material is involved. Another prominent feature is the difficulty the patients have in explaining or illustrating their loss, perhaps because every-day trivialities are for the most part affected.

These observations, if confirmed, have implications. Even though the impairment of memory for the most part affects trivialities and is one to which an otherwise well patient can adjust, it necessarily imposes a mental strain. It also contra-indicates electro-therapy in those, for example teachers and transport workers, in whom inability to remember names of persons and places may seriously impair working capacity. Finally, it implies permanent, or semi-permanent, damage to the brain which, as Grinker hints, may later have untoward consequences.

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REFERENCE.

LEVY, N. A., SEROTA, H. M., and GRINKER, R. E. (1942), *Arch. Neurol. Psychiat.*, **47**, 1009.