Indian J. Psychiat. (1984), 26(4), 364—369

TREATMENT OF WRITER'S CRAMP: A FOLLOW UP STUDY

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SUMMARY

The paper describes the usefulness of a treatment method for writer's cramp. Three cases of writer's cramp are described and in all the three, the response to treatment has been good after treatment and on follow up.

Writer's Cramp is classified as an occupational neurosis and is included under I. C. D. (9): 300.8. It is also known as Graphic Dyskinesia, Scrivener's Palsy and Graphospasmus, and is one of a large group of functional motor disorders known as occupational neuroses. In all these conditions, there is a specific impairment of a learnt motor skill. Writer's cramp is characterised by muscular spasm of the fingers and hand of the writing arm, often spreading to the muscles of the lower and upper arm and to the shoulder girdle with consequent inco-ordination and discomfort, variously described as fatigue, weakness, stiffness or pain, when attempting to write. There may be accompanying tremor and jerking of the limb while writing. The pen is then grasped more and more tightly and the hand writing becomes progressively more illegible upto a stage when writing may become impossible. The handicap is usually limited to writing alone, but may occur during similar activities, such as typing or counting notes. Sometimes as the individual starts trying to write with the uninvolved limb, the malady reappears after variable period of time. There is usually over-pronation of the hand, with excessive flexion of the digits.

The first description of the condition in medical literature came from Bell (1830) and Brask (1931), who attributed it to the advent of the steel nib (quoted by Bindman and Tibbetts, 1977). But it has been described among brush writers, in ancient Chinese literature. Most of the subsequent work has been devoted to providing clarity to a confusing and controversial condition by suggesting new insights into etiology, classifications, and treatment.

Epidemiological studies (Bindman and Tibbetts, 1977) have certain findings in common. The illness is commoner in males, appears most often in the third and the fourth decade, and is present in all societies where writing is common. The incidence is the highest, in those involved in constant writing, typing and key board telegraphy. In an Australian study Ferguson (1971) reported a prevalence of 14% for writer's cramp in a group of 516 male telegraphists. In an Indian study Mahendru *et al.* (1981) have reported a prevalence of 5.4 per thousand among office workers in an urban setting. In most studies, a large proportion of the patients had history of a neurotic illness or displayed neurotic traits.

Several treatment modalities have been tried by various workers: Tarotomy,

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in order to relieve peripheral disturbance incoordination; and bilateral prefrontal topectomy were attempted without much success. The view that radicular irritation of the cervical spine, causing localised tenosynovitis resulting in writer's cramp, lead to treatments like galvanic and faradic stimulation, cortisone, ultrasonic therapy and cervical traction. But these treatments were of no significant benefit. Some neurologists, viewing the disturbance as being related to extrapyramidal disorders, have used antiparkinsonian drugs, with poor success.

Some psychiatrists viewed Writer's cramp as a hysterical symptom while others viewed it as an obsessive neurosis. Pai considered writing disturbance as symptomatic of various neuroses. Sedation, hypnosis and psychodrama were tried unsuccessfully (BMJ Editorial, 1972). A psychosomatic formulation states that the act of writing is a refined and delicate motor skill, incompatible with grosser postures of the upper limb, associated with emotional states like anger. When such a state affects a person chronically or arises specifically in relation to the act of writing, it may progressively distort the writing as the person makes a succession of attempts to overcome the difficulty (Crisp and Moldofsky, 1965).

Psychologists view writer's cramp as a bad habit arising from faulty learning experience. Janet (1925) was the first proponent of a reeducational approach in treatment. He taught patients to write with the hand supinated to discourage excessive flexion of the digits. To redevelop accurate writing movements, devices like special key boards and triangular prism patterns were used.

Poor outcome was reported with several treatment methods (Liversedge and Sylvester, 1955). Biofeed back using Electro-myographic monitor produced some improvement in one study (Bindman and Tibbetts, 1977). Avoidance conditioning techniques using electrified pens said to give shocks with excessive pressure have been occasionally useful, but have been criticised, because they can result in increased anxiety and worsening of the condition in some patients (Beech, 1960). Crisp and Meldofsky (1965) reported the usefulness of relaxation and reeducative techniques along with psychotherapy in the treatment of writer's cramp. Arora and Murthy (1976) reported a case of writer's cramp, successfully treated by progression from point brush in supinated hand combined with relaxation and psychotherapy.

The present paper describes the method of treatment usually followed in our Department in the management of writer's cramp and the follow up results on 3 patients who were treated for writer's cramp.

CASE REPORTS

Case 1: Mr. V. C. 34 year old Bank employee. This patient's difficulty began 2 years prior to consultation, following failure in a competitive examination. It began in the form of a tremor, which progressed to jerky movements, while writing. On repeating the examination he failed again due to his writing disability and the complaints worsened. His life has been dominated by an autocratic and demanding father who lived with him. Patient had been married for four years with considerable marital disharmony. On examination, he was an anxious individual, his writing was characterised by severe jerky movements of the whole right upper limb and the pen was gripped very tightly. No physical abnormality was detected.

Case 2: Mr. M. A. 35 year old

Engineer. Patient's writing difficulty began 3 year prior to consultation, with pain in the hand after prolonged writing in the office. He then noticed stiffness and tremor. The disability progressed and he was eventually unable to write even a few words legibly. He had no sleep disturbance or overt symptoms of anxiety. He had been working at the same position for 13 years and though a conscientious worker had received no promotions. This has become a source of chronic frustration. On examination he was a controlled and communicative person, with obsessive traits. The cramp was characterised by overflexion of the digits while gripping the pen, gross tremor, and the hand writing was almost illegible, the letters being small and distorted. Physical examination revealed no abnormality.

Case 3: Mr. M. R. 30 year old bank clerk. His difficulty had begun insiduously 3 years prior to consultation. There was uneasiness and weakness of the hand and he had to grip the pen tightly. There was pain all over the right forearm and arm, the disability being more at work. He was excessively dependent on a strict, overbearing and short tempered father. He had tried writing with his left hand with some success. Treatment with anticholinergic drugs had given no benefit in the past. On examination he displayed a neurotic personality with marked ambivalence towards his father and low self esteem. Considerable anxiety was evident during the interviews. His writing was almost illegible and he was unable to sign his name due to marked jerking movements of the arm. Physical examination showed no abnormality.

TREATMENT PLAN

A similar programme was used for all the patients who were seen 3 times a week on alternate days for a period of 6-8 weeks (20-25 sessions). The principles of treatment were similar to those used by Arora and Murthy (1976). The patients were forbidden to write or even to sign their names during the treatment programme of their own. For the first four sessions, relaxation technique was taught and the patient had to practise them twice a day in his own room. His progress was checked during the sessions and maximum stress was given to the relaxation of the upper limbs, along with the whole body. The relaxation training was continued throughout the treatment programme—1/2 an hour in the morning, in the evening and during sessions with the therapist.

After this, the patient had to use a thick water colour painting brush (size 6) holding his writing hand in the supinator position but with the fingers in the position of relaxation. The brush was placed between the index and middle fingers and for two sessions, circles 15 cms in diameter were drawn. In the next two sessions, the radius of circles were reduced progressively to 10 cms, 5 cms, and finally to 2 cms. The Next circles of 2 cm. radius were drawn on single ruled paper.

The stage involved writing letters of the alphabet on ruled paper, with the hand in the same position. This took two sessions. To hasten the process of treatment, the patient was asked to practise twice a day in his room after thirty minutes of relaxation for all the subsequent stages. It was then possible to switch to writing with the pronated hand with the fingers touching the pen, held between the index and middle finger. When sentence writing was attained with this grip, the brush was substituted with a soft felt pen. Once the patient was confident of this stage,

it was possible to change to four ruled paper to bring the handwriting to normal size. It is necessary to warn the patient against gripping the pen too hard. It was stressed that the fingers served mainly to guide and not to grip the pen. This usually prevented any problem. The patient was now taught to relax in a sitting position. This was done by reclining in a chair with the arms placed loosely on the lap. This had to be done for five minute before commencing writing. This was useful for the patient who could practise this in his office before writing. After this patient was able to use a fountain pen on a four lined ruled paper. The penultimate stage was devoted to writing on blank paper with stress on the handwriting. The last few sessions were devoted to increasing the speed. The patient was asked to write without straining, for example thirty minutes and improve on the previous number of words in successive sessions. No stage was embarked upon without the patient's and therapist's full confidence of success in the previous stage.

SUMMARY OF TREATMENT PROGRAMME

Sessions		*Task*
1, 2, 3, 4	—	Learning of Relaxation technique
5, 6	—	Supinator writing 15 cms circles
7, 8	—	Reduction of circle size to 2 cms diameter
9, 10	—	Writing individual letters and then words on single ruled paper
11, 12	—	Switching to pronator (pen between index and middle fingers) writing position
13, 14	—	Writing of words and sentences with brush
15, 16	—	Writing with felt pen
17, 18	—	Writing on four ruled paper to reduce letters to 1 cm (normal) size.
19, 20	—	Writing on blank paper
21	—	Writing with time limit to improve speed

Along with the above treatment, the patients also had supportive psychotherapy and anxiolytics i. e. Diazepam 2.5 mg tds.

RESULTS:

Table I shows the improvement after treatment and at follow up.

The patients were able to write legibly and were free of pain, spasm, tremor and discomfort. Writing speed ranged from 6 to 12 words a minute. Patient 1 was symptom free one year and five months after discharge. Patient 2 was maintaining improvement after eight months. Patients 3 had returned to his job and was having no difficulty three months after discharge.

COMMENTS:

Writer's cramp is a condition which until recently remained shrouded by a poor prognosis except for anecdotal success. Only in the last decade are seen reports of consistent improvement in some studies. In this group of 3 patients, the age of onset ranged from 30 to 35 years and duration ranged from 2 to 3 years. All were males and had a high educational status (all had been to college) and writing was the main occupation. All of them showed neurotic traits. Most of these are similar to those obtained in other studies.

TABLE I

PATIENT	SYMPTOM														
	Pain			Tremor			Spasm			Legibility			Quantity of Symptom free writing		
	BT	AT	FU	BT	AT	FU	BT	AT	FU	BT	AT	FU	BT	AT	FU
1	1	0	0	2	0	0	2	0	0	1	2	2	1	2	2
2	1	0	0	2	0	0	2	0	0	1	2	2	0	2	2
3	2	0	0	2	0	0	2	0	0	1	2	2	0	2	2

BT=Before treatment; AT=After treatment at discharge; FU=At follow up.

Pain, Tremor, Spasm: 0=No symptom, 1=Symptom present; not incapacitating, 2=Severe incapacitating symptom

Legibility: 0=*Completely illegible;* 1=*Can read with difficulty;* 2=*Legible.*

Quantity of symptom free writing: 0=less than 20 words, 1=20-200 words, 2=more than 200 words.

All the patients reported here had difficulty in writing; had emotional and adjustment problems; and had a high degree of anxiety on psychiatric examination. Hence a package of treatment including psychotherapy, antianxiety drugs and behaviour therapy techniques (relaxation and reeducation) was used as a treatment techniques. No attempt was made to separate these treatment components since the philosophy of our centre is that psychotherapy must be an essential part of all treatment approaches and any attempt to separate them will not be in the best interest of the patients. This package of treatment offers a concrete therapeutic programme which can be completed in 2 months and as the follow up results show, it gives good results. Nor is any attempt made to make a comparative evaluation of this treatment plan. The main purpose of this paper is to say that this treatment plan will be useful for patients presenting with writer's cramp which is traditionally known to be refractory to several therapeutic approaches.

The most acceptable hypothesis for the genesis of Writer's cramp is that it starts as a symptom of anxiety neurosis in people whose main occupation involves use of fingers as for example writing. Continuing anxiety prepetuates it as a habit pattern in the form of a vicious cycle. Anxiety produces the symptom, but any attempt to write makes the symptom worse which in turn increases the level of anxiety. The hypothesis suggests that the treatment should be eclectic, making use of antianxiety drugs, psychotherapeutic techniques and behaviour therapy methods.

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