



Figure 1



Figure 2

WRITER'S CRAMP

ABSTRACT

An interim report on work with writer's cramp patients suggests that a wider view of this condition is needed. The article proposes that there are aspects inherent in the act of writing, as well as in taught strategies, that might influence the attitudes to, and treatment of, this particular movement disorder. Simple practical measures aimed at alleviating the symptoms are described. They benefit patients and, at the same time, provide some possible answers to issues that have baffled those who have previously looked at writer's cramp from a medical perspective alone.

- Figure 1 The artist Delacroix portrayed holding his quill between his index and middle finger. From a French bank note.
- Figure 2 An alternative penhold illustrated by the Belgian neurologist Dr. H. Callewaert. From *L'écriture Rationnelle* (Lebegue 1942)
- Figure 3 The alternative penhold is comfortable when using modern pens, allowing them to be held almost upright.

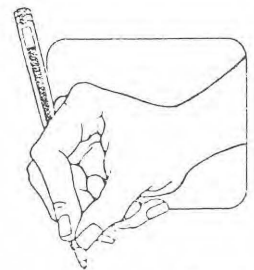


Figure 3



Writer's cramp is a controversial area pertaining to handwriting; there is little agreement on the part of the experts. Additionally, there is often little help for the sufferers of this particular condition. This article does not set out to challenge medical views on what is a baffling and increasingly common complaint, but makes a plea for cooperation among the different disciplines involved, in the interests of both patients and research.

This is not the right occasion to present case studies but to give an overview in the form of a distillation from observations of perhaps fifty recent cases of writer's cramp. Individual patients have shown obvious differences in details, but a general pattern of symptoms and attitudes has emerged, along with a pattern of responses to similar suggestions for rehabilitation. A research project is planned to test the long-term implications of this work—not only for the patients but for the attitudes generally held towards the condition of writer's cramp itself. Longitudinal studies are necessary to validate any therapeutic technique, but inevitably they take both considerable time and money. This contribution is offered as an interim document in the hope that it will stimulate discussion and experimentation. It may also give hope to writer's cramp sufferers and should alert any readers to reconsider their writing strategies if they find it painful to wield a pen.

RESEARCH REVIEW

Writer's cramp is by no means a modern complaint. Solly (1864) reported on "scrivener's palsy or writer's paralysis." He stated, "Upon your early correct diagnosis may depend the health and happiness of your patient. If you mistake its real nature and regard it as incipient softening of the brain, you may destroy the happiness of your patient and bring on the very disease that you have erroneously diagnosed." Solly described "how the muscles cease to obey the mandate of the will" and linked scrivener's cramp to the several other occupations where sets of muscles are paralyzed by long-continued exertion: shoemaker's cramp, milking cramp, musician's cramp, compositor's and the sempstresses' cramp. It is interesting to note that he says of writer's cramp

that “this form of palsy is rare notwithstanding that the greatest part of the middle classes of London get their bread by the use of the pen.” Modern technology may have solved the problems of shoemakers, milkmaids, compositors and sempstresses, but musicians still suffer from cramps, and their symptoms are often compared with those of writers.

Sheehy and Marsden (1982) provide an historical review of the literature on writer’s cramp, noting that quite recently it was still being described as a “primarily psychogenic.” They refer to writer’s cramp as a focal dystonia and divide it into two categories:

- 1 Simple writer’s cramp—where the patient only exhibits difficulty when writing, other manual acts being carried out normally.
- 2 Dystonic writer’s cramp—where muscle spasms affect not only writing but other manual tasks, such as the ability to handle a knife and fork, cup and saucer, etc.

Hughes and McLellan (1985) put forward an interesting point, saying “We suggest that writing is prone to induce dystonia because of concurrent requirements. The first is to hold the pen securely in the fingers and to keep it applied evenly to the paper. The second is to permit rapid and very fine modulation of activity in all the co-activating muscles.” Muscles that oppose one another (flexors and extensors) must be tensed within a conventional tripod grip, and at the same time, delicately controlled to form the letters. This “conflict” would be exacerbated by the environment in which many people have to write today, at speed and often under considerable tension in competitive situations.

The Belgian neurologist Callewaert (1962, 1962, 1963) held interesting views on the effects of penhold and training on writer’s cramp or “hyperkinesia,” as he reported it to have been termed by Jacoub in the last century. Callewaert (1963) suggested that “indeed such patients have been writing since primary school with exaggerated effort.” He continued, “It is thus possible to illustrate writer’s cramp with a picture of an unskillful child in the handwriting act.” He considered that “skilled writers as well as those whose writing habits have been altered through





education, exhibit complete relaxation of those muscles not directly involved in the act of writing.”

In addition to recommendations concerning penhold, Callewaert held strong and somewhat controversial views on letterforms. He considered the extension movements that lead to slanting letters to be difficult. He stated his own point of view that “handwriting has now evolved to the extent that each letter is formed with an unbroken curved line avoiding interruptions and angles.” While accepting the possibilities of such letters as a therapeutic measure, it may have been this involvement in letterforms that did not conform to the models used in many other countries at that time that prevented Callewaert’s work from reaching a wider audience. His 1962 paper was delivered at an international conference on handwriting at the University of Wisconsin. Despite his emphasis on the teaching of handwriting to children, this comment can be found in the discussion following his presentation: “The author has not presented experimental evidence in support of the round method, and his efforts appear to be primarily clinical. We have to assume that Dr. Callewaert’s research has been directed toward the age-old student’s disease, writer’s cramp. The round method then is a system initiated as a therapeutic measure to minimize the tension and discomfort of writing through the relaxation of useless muscles.”

Callewaert’s own defense of the round-hand method of writing, with the pen held between the index and middle finger, appeared in an English summary at the end of an article written in French. “In this technique our two most agile fingers bend their phalanges simultaneously (in order to obtain loops and curves); the combined and harmonious action of the index and middle finger reduces to the minimum the opposition of the thumb which frequently obstructs the writer’s movements when the instrument is held in the usual manner. This is in accordance with the view of Hughes and McLellan in obviating the adverse effects of the pad-to-pad opposition of the traditional tripod grip.

Callewaert’s work has been helpful to my own clinical observations and the development of therapeutic techniques. One

example of a penhold similar to that recommended by Callewaert was found during the detailed research into penholds leading to Sassoon, Wing and Nimmo-Smith (1986), where the particular advantage of such a grip when using modern pens was discussed. Other such “alternative” penholds were later found occurring spontaneously in schoolchildren and adults in several different countries, where individuals had found them to their benefit. With the assurance that Callewaert’s work provided, that this was unlikely to be harmful to anyone, I was able to proceed with confidence in recommending the particular penhold that he suggested, and other similarly unconventional penholds, to patients.

A PERSONAL VIEW OF WRITER’S CRAMP

The first and perhaps main point raised here is whether writer’s cramp should be looked at entirely as a medical condition. Neurologists, psychiatrists or surgeons (depending on the referral) will see their patients already in a serious condition, and must prescribe accordingly. There are aspects of this condition, however, that may be influenced by the specific implications of handwriting itself, as different from the purely mechanical repetitive movement of the muscles. The basic need of humans to express themselves in a graphic way is discussed on page 166. The intellectual involvement in the content of writing and the emotional environment in which the act takes place may all play a part. Above all, the effect of the visible trace itself on the writer—the failure involved in either the total inability to produce a personal mark, or the disintegration of a once adequate writing—needs considering. These aspects could be implicit in the act, stemming initially from handwriting rather than from the nervous system.

By treating patients with the same techniques used for more general handwriting problems, it is often possible to alleviate the symptoms of patients who have been diagnosed as having writer’s cramp. While it is not yet possible to say whether such patients are “cured,” at least they have had their ability to write restored. In addition, this may be one way that clues to the nature of this complaint may be disclosed.



We can start by considering some possible commonsense, rather than medical, causes of writer's cramp, in particular why this complaint should be on the increase. Modern technology should be alleviating the situation by taking many of the more extensive tasks onto keyboards. We need to explore all aspects of this complex subject. Some clues to explain some symptoms can be found within the historical repertoire of letterforms and pen-holds; others can be found by examining changing educational methods or while examining the effects of modern writing implements.

PAIN

Many writer's cramp patients suggest that the origins of their trouble date back to stressful periods when handwriting became painful for them. The pain appeared to arise from a variety of causes and occasionally began quite early in their school days. This study of adult writer's cramp sufferers must be seen as an extension of many years working with children with handwriting problems. Many of them suffer considerable pain when writing. A small but worrying survey reported in Sassoon (1990) found 40 percent of girls and 25 percent of boys of school-leaving age could be counted as suffering pain when writing. This was quantified after they had responded to a six-point diagnostic list that involved the seat of pain, which specific tasks caused most pain, duration of pain, etc. Less formal surveys with higher achieving pupils of the same age, pointed to an even higher proportion of pain. Tension tremors can occasionally be observed in children under stress. Such tremors improve or worsen depending on the children's home or school environment.

Occasionally, the pain and tension can be so intense that pupils become unable to use their writing hand. This is often related to overuse at examination time, but cases of younger children appear to be on the increase worldwide, especially in countries where the education system is highly competitive. Can this, then, be termed juvenile writer's cramp?

HANDWRITING WITHIN THE EDUCATIONAL SYSTEM

This must bring into question the way that our children are taught to write and the usage of writing within primary, secondary and tertiary education. My own feelings are that writing problems are induced by our educational system, and the ignorance concerning the needs of writers is worsening in many countries as a generation that has not had adequate instruction becomes the teachers of the next, unfortunate generation. In particular:

1 Schools all over the world consider the written trace but seldom the writers—in particular, not their hands or body posture.

2 There is an idea that there is a conventional, and therefore unalterable, right or wrong way of doing things, instead of an understanding that both writing implements and the usage of handwriting have changed dramatically in the last few decades. This might mean that different attitudes to writing strategies are needed.

3 The almost universal insistence on neatness leads to an unbalanced view of the purpose of writing, which can have disastrous results for those who cannot relax this perfectionist standard when educational or other real-life situations demand speed. A more flexible attitude is needed from the start, recognizing different levels of writing appropriate for different tasks.

OTHER CONTRIBUTORY CAUSES OF WRITER'S CRAMP

The factors listed here as possible contributing causes of writer's cramp can be viewed separately or as an inexorable progression.

1 Unsuitable writing strategies: posture, paper position and above all, penhold that rapidly become habitual. Writers themselves do not seem to realize that quite simple factors are affecting their comfort. They continue to twist their bodies to adapt to some unsuitable paper position instead of just moving the paper. They strain their hands without realizing how they are



harming themselves when simple experimentation with new, and not necessarily conventional, penholds might provide a solution.

2 Tension and pain when the hand is repetitively misused and perhaps overused. The written trace deteriorates as a direct result of a tense hand, leading to either outside criticism or self-criticism. Then either fear of more criticism or disgust at handwriting which may be perceived as ugly can lead to more tension and further pain.

3 Pain worsening at any time of extra tension in education, note taking, exams or later career as the demand for extra speed exacerbates the situation. As writing begins to fail, the writers ignore the warning of pain in their attempt to succeed in whatever written task is required of them. The situation is aggravated by those with too high an expectation of the level required for any particular task: the perfectionists, the over-conventional or the socially insecure.

4 The pain and tension develop into involuntary movement or total inability to move the writing hand. This may develop through various stages of jerkiness. This can be observed in young people who appear to be on the way to writer's cramp. Tension may initially be noticed as excess pressure of the fingers on the pen or the pen on the paper, but it is the downward pressure of the whole hand on the desk that is more harmful. The pen then cannot move along the line, and the letters, such as they are, may be superimposed on each other. The elbow gets raised to release the pressure; replacing it produces a jerky movement. Keeping this movement up puts the strain on the upper arm, and that soon turns to more pain. Many cramp patients demonstrate their inability to write while resting their hand on the table, an echo of the time when it hurt to do so. The awkward and painful "elbow raised" position is an unsuitable defensive strategy that has become automated.

This detailed explanation may help to an understanding of why some patients find that they can use a pen when the hand is completely unsupported on the writing surface, but then find it

difficult to control either size or quality of writing. It also might explain why writer's cramp was less common a hundred years ago when people were carefully trained not to support the writing hand on the desk.

5 Physiological reasons can also contribute to this decline. Some patients have illustrated that atypical body proportions can mean that they were never able to be comfortable with standard furniture. In these circumstances, the resulting poor posture may well lead to pain when writing and contribute to the final condition. I have found, for example, some support for the idea that there is a correlation between long fingers and pain. It is not easy to displace overlong fingers on a pen—however fat the barrel.

As for the behavioral aspect, undoubtedly the writer's character plays a part. The more perfectionist writers may be in their nature, the more any deterioration in the standard of writing may worry them. This, in turn, starts the spiral of tension and pain which results in the writer focusing attention on the act of writing. Once the act of writing is no longer automated, it becomes slower and more stressful. More relaxed writers may take such matters in a more lighthearted and balanced way. Over-obedient people, who betray their character by still clinging closely to the model that they were taught in primary school, may be more prone to problems. This is because they are less likely to develop the personal shortcuts that enable them to speed up their handwriting. They may look upon such alterations, that are signs of maturity, as a deterioration in a self-imposed standard. Inventive people, purposely or subconsciously, may have already experimented to find quick personal solutions to simplifying letters and joins in order to create an efficient personal writing. These writers will be better equipped to deal with the increased demand for speed at key moments in their careers.

COMMONSENSE EXPLANATIONS

It is possible to provide quite commonsense explanations for some of the aspects of writer's cramp that baffle the specialists



who consider writer's cramp from an exclusively medical perspective. Statistically, it may be difficult to prove any of these points, even with the longitudinal study that is in preparation at present. Take just one point: the well-documented sequence of events that happens if the patient tries to overcome the cramp by changing the writing hand. The condition usually occurs in the second hand within five years.

This seems reasonable, looked at in a different way: if the patient changes writing hands without altering the attitudes that led to tension in the first place, then the cycle is likely to repeat itself. Patients who have been through such experiences tell me that when things start to go wrong with the second hand, the tension soon mounts. There is a rapid decline because of the worry that there is now no alternative, and they may soon have no means of writing.

There is an additional problem. When the natural hand is no longer capable of writing, some patients report that they seem to lose confidence in it. They explain how frightening it is when some part of their body ceases to obey their commands. The condition then seems to escalate; when the patients stop using their natural writing hand, it may eventually become unable to perform other movements, such as picking up a glass. Writing is more than a means of communication—it is oneself on paper. If you are successful, your writing reassures you; if it fails you, the constant visual reminder of your failure is there to torment you. Is this a possible explanation of how Sheehy and Marsden's dystonic stage of writer's cramp can commence?

INTERFERING WITH AUTOMATIC MOVEMENTS

At some stage, this seemingly inexorable progress towards the serious condition of dystonia becomes a problem of the nervous system. Again, this may be able to be explained in fairly simple terms. When writers start to worry about their written trace, they focus their attention onto a movement that should be so well trained that it has long become internalized and automatic. This then interrupts the mechanism by which an automated action takes place and replaces it with a conscious effort. Once

this happens, the tension involved in consciously producing and perfecting each stroke of written letters seems to make it increasingly difficult for the writer's hand to respond. This escalates as the writer strains even more to make his body react, reflecting this in an ever-declining trace. Exactly the opposite is needed—the writer needs to forget all about the act of writing and let the motor memory deal with it.

There are plenty of precedents for this in everyday situations without referring to scientific papers. You can try out this idea of interrupting an automatic action with some complex trained movement that you are familiar with. What happens when you are driving your car and start wondering what your feet are doing on the pedals? What happens to your golf swing, tennis stroke or intricate dance routine when you start worrying about one small point in the chain of automatically trained movements of the muscles that are involved? It usually disrupts the efficiency of whatever you have previously automated through lengthy motor training. Should you continue to be conscious of the details of what you are trying to perform, then tension will exacerbate the situation.

DEALING WITH THE SYMPTOMS OF WRITER'S CRAMP

This involves three distinct phases:

- 1 New strategies for writing posture to fit in with individual needs—and a new penhold.
- 2 A new and realistic attitude to the concept of handwriting.
- 3 Help with the actual letterforms to show how personal shortcuts can save time, speed up writing and suit each writer's hand. It is also necessary to give writers a pride in their own trace and individuality.

The first point, about the importance of posture, table height, slanting writing surface, etc., is generally quite easy to explain and justify. All of this is detailed in Sassoon (1990) and other publications. Of all the aspects of posture, penhold is the most complex. Learning to assess the separate elements of hand and finger position as detailed in Sassoon, Wing and Nimmo-Smith (1986) is one matter. Deciding which alterations are likely to





succeed with individuals is another. An initial success is of great importance when dealing with something that is so involved with a patient's self-confidence.

The other two parts of the treatment are unfamiliar to therapists of all medical disciplines. They are outside of their training, and often even of their comprehension. This could be the reason why attempts at biofeedback, psychotherapy, hypnotism, etc., seldom succeed. Such treatments may help the patient in the important aspect of relaxing, but they do not deal in any depth in an informed way with the act of writing. Patients are not given the detailed practical help that equips them with less painful strategies for writing. This practical help is vital. With it comes self-confidence and motivation from the realization that once again the production of a written trace is possible.

My technique is to question carefully against a background of knowledge gained from dealing with many cases of young people with problems, as well as with adult patients. It is important to discover the earliest possible cause of each patient's problem and to discuss how and when it started. If there is to be a hope that they can overcome the problem, patients must understand how the situation might have arisen. It is sometimes difficult to restore confidence in cases where patients have understood, or have actually been told by specialists, that their condition is incurable. I must assume that these techniques can alleviate the condition, or that in some cases it is reversible, and be able to pass on this confidence to my patients; otherwise, it would be pointless to continue with my work.

TECHNIQUES FOR REHABILITATION

Once the basic writing posture, table height and slant, paper position, etc., have been dealt with, the next step is to get patients to make some kind of mark with the hand that they are so sure they can never use again. There are many simple, and almost devious, ways of getting round this fear. If I am to be didactic, here is the place to be so. Never use the tripod grip at this stage, nor a conventional pen or pencil if you can avoid it. As far as the penhold is concerned, you should have no precon-

ceived ideas about which unconventional penhold will first succeed. Remember that those without the usual complement of fingers manage to write well with most unconventional holds, and that the patient's conventional attitude to the act of writing is one of the concepts to be dealt with before he can understand and overcome this disability. A force grip is a good starter, but an unconventional writing implement will in itself usually bring a different hold. A spoon or stick to motion the letter in midair, a brush and paint, then a fat graphite block or charcoal is a suggested progression. When it comes to a more conventional implement, there should be a wide selection of modern pens for the patient to choose from. Patients are surprised to find how much an entirely different size or shape of pen-handle, or point, can alter the way their hand and their writing works.

Other quite simple techniques for the first session include motioning, then writing, with the eyes closed or with both hands simultaneously. These methods seem to work because the patient is no longer focusing on either the written trace or the problem hand, but depending on the internalized movement of the letter previously stored in the motor memory.

Once patients have written their name or even their initials, this is a comforting achievement. There is now something to work on and improve, thereby harnessing motivation and the basic human need to make a personal mark. Progress can be rapid; one session is sometimes enough even when a patient has been unable to write for several years. This may sound strange for therapists whose training will have prepared them to consider in terms of a course of treatment. Once patients have been given new techniques and the confidence to go out and write again in a real-life situation, it is sometimes best to leave "the cure" in their hands. It is important not to impose any preconceived ideas. Patients must be encouraged to experiment when they are relaxed and in their own homes. You can always be at the end of a phone if further encouragement is needed. In this way, patients can take the credit for their own recovery, because after the first stages it is really just a matter of returning confidence



and the gradual relaxing of worry. Forgetting all about the way you write is what it is needed, so constant reminders of a disability, particularly in a hospital environment, can be counterproductive.

A video is useful, but not only for record keeping and future training sessions. Patients profit from seeing how quickly their movements have improved with new writing strategies. They are also helped by seeing how others in similar situations have progressed. Patients with dystonia seem to be isolated as well as frightened, and tend to think that they are unique. They are often ashamed of their involuntary movements, even when such movements may be almost undetectable to other people.

CONCLUSIONS

From the point of my own work, it is necessary to consider that:

- 1 Despite the fact that most of my patients have been referred by neurologists, I may have been dealing with patients where the original diagnoses might not have been quite accurate.
- 2 I have been finding that the very specific and localized complaint of writer's cramp is not always as serious or irreversible as has been previously thought—provided it is dealt with in an informed way.
- 3 Perhaps the symptoms have different causes or several triggers.

Whichever of these conclusions is most valid in any particular case, the argument must be that, for the sake of patients, the medical profession should begin to reconsider their approach to writer's cramp. Attitudes need to be altered about handwriting and with them the image of what is a taught, and not a natural, skill. There needs to be a widening of focus to reconsider the distinction between what is termed "normal" and what is "abnormal"—and whether in some cases it is not necessary to consider writer's cramp as a medical problem at all. Cases where unnecessarily narrow conventional attitudes have been contributory factors in the onset of the condition of writer's cramp illustrate this point. These conclusions are a plea for cooperation, and not for confrontation, with the medical profession.

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