THE BRITISH JOURNAL
OF
OPHTHALMOLOGY

NOVEMBER, 1918

COMMUNICATIONS

HYSTERICAL DISORDERS OF VISION

With special reference to the phenomenon of the contraction
of the antagonists*

BY

LEWIS R. YEALLAND, M.D.

RESIDENT MEDICAL OFFICER, NATIONAL HOSPITAL FOR THE PARALYSED AND
EPILEPTIC, QUEEN SQUARE, LONDON.

IN the consideration of any form of hysteria the mental state of the patients ought not to be lost sight of, and just as the physical disabilities vary in their distribution to the production of monoplegia, paraplegia, hemiplegia, tremors, fits, deaf-mutism, amblyopia, etc., so there is in most cases a psychopathic defect which may also vary in the patients so affected.

It is difficult to classify hysteria on a psychiatric clinical basis, although such grouping as amentia and dementia has been made in my cases. In the former, the moron, backward, and imbecile may be included; in the latter, such a diagnosis as dementia praecox has been suggested. What relation the degree of the mental defect bears to the type of the physical disability which is produced, is difficult to state, but it has been my experience to find such conditions as deaf-mutism and hysterical disorders of vision in the

* Read in the Section of Ophthalmology of the Royal Society of Medicine,
June 12, 1918.

more highly mentally endowed of the ament. The recognition of the mental defect in these patients is important from the point of view of treatment, for such patients respond readily, as a rule, to various forms of suggestive measures, and the accessible channels for such suggestion are more or less dependent on the type of mental defect which is manifested. Although the physical defect which has been produced as the result of impressions of unpleasant experiences acting on a susceptible mind, leads to the production of hysterical disorders, it seems impossible to suppose that the mental equipment of such a patient can be altered or, at any rate, improved to more than its maximum capacity; favourable mental changes may, however, be looked for in the suggestive factor arising from the disappearance of the physical disability, and so there may be a return to a mental state which is normal to the patient.

My method of treatment, in brief, of such cases is, first of all, to make certain of the diagnosis, and then to assure the patient that he will recover with one treatment. Suggestions must be varied according to the mental state of the patient. He must always be made to believe that his condition is understood, and never led to suppose that it is of interest, apart from the fact that it is "one of those conditions which respond rapidly to treatment." It will be frequently found that the state of mind of the hysterical patient is such that the idea of having the particular disorder of function restored to usefulness does not tend to alter his negativistic attitude; and although the latter is observed, the one treating enforces a counter attitude, by impressing the idea upon him that the hopes of recovery are nothing but a source of happiness in the patient. This idea should be persisted in throughout the treatment. He should not be permitted to express his opinion on his condition, but be treated as soon as a diagnosis has been established.

Suggestions of a hopeful and a determined nature assisted by a steady disappearance of the disability soon create in the patient not only a willingness to recover completely, but an apparent pleasure at such a prospect. Moreover, the patient must be restored at one sitting.

It has been my experience to find visual disturbances the least common of all hysterical manifestations. This may be accounted for by the fact that the majority of the patients with whom I have had to deal have been those suffering from such conditions extending over a long period of time, and the majority of them had received some previous treatment. The duration of the disorder had continued in the military patients from two months to eight years; in the civilian patients, from two years to sixteen years. These have included blepharospasm, eight cases; spasm of accommodation, four cases; ptosis, one case; disturbance of the visual fields, two

cases; amblyopia, five cases. Some of these conditions had associated with them hysterical manifestations in other parts of the body, and in one of my cases of blepharospasm there was a peripheral neuritis with lost ankle jerks.

Hysterical disorders of vision may be grouped clinically into two classes, viz:

I. Conditions in which the contraction of antagonists may be demonstrated and II. conditions in which the contraction of antagonists cannot be demonstrated.

I. The phenomenon of the contraction of antagonistic groups of muscles acting before the principal movers begin, was first of all described by Beevor, in his Croonian lectures, when discussing the character of voluntary movement in hysterical hemiplegia. By contraction of antagonistic groups of muscles is meant contraction of groups of muscles which should be relaxed during the performance of given movements. I have attempted to demonstrate further this clinical characteristic, which, for example, is observed in hysterical stammering.* It will be my purpose when discussing the first group of cases to point out a similar phenomenon in hysterical disorders of vision which occurs in such conditions as blepharospasm, ptosis, and spasm of accommodation.

Blepharospasm

Blepharospasm is, to my mind, a typical example of the loss of function being due to the contraction of antagonists. In such cases the failure of vision is usually due to the inability the patient experiences when attempts at opening the eyes are made. It is, usually, though not always, bilateral. Often the condition is preceded by ptosis, or pseudo-ptosis and it is from the occurrence of the latter that one sees in blepharospasm a distinct resemblance to the rigidity following the flaccid type of monoplegia.

There are two sets of muscles involved in the mechanism of opening and closing the eye, viz., the levator palpebrae superioris and the orbicularis oculi. Each muscle is the antagonist of the other. Normally, when the eye is voluntarily opened, the levator palpebrae superioris contracts and the orbicularis oculi relaxes. In blepharospasm there is contraction of the orbicularis oculi, and when attempts at opening the eye are made the contraction of this muscle increases. That is to say, there is simultaneous contraction of the orbicularis oculi and of the levator palpebrae superioris. The action of the levator is overcome by its stronger antagonist. This contraction of the antagonists gives rise to spasm, spasm to lachrymation and sometimes conjunctivitis with the resulting pain. However, this spasm is not limited to the orbicularis oculi, for most of the facial muscles are involved in it. Upon the degree of spasm

* "Hysterical Disorders of Warfare," p. 74.

and the size of the palpebral apertures, whether they are partially or entirely obliterated in the spasm, depends the apparent loss of vision. A strong light thrown into the eye will, as a rule, increase the spasm. The spasm is not so marked in the dark, and when the patient sleeps it disappears completely, although when he awakens the spasm immediately reappears.

When I first treated these cases, the patient was seated 6 m. from a vision card and a small faradic battery was employed. The pad electrode was placed over the cervical spines and a key electrode used. The untreated eye was bandaged. The patient was instructed to close his eye and a mild current was applied to the closed lid for a few seconds, after which he was ordered to read 6/60. If he failed in his attempt, a stronger current was applied to the same part for about twice the length of time of the preceding application. At first he was allowed considerable time to decipher the first letter, but if he failed to read it the current was increased and the interval after each application shortened. When he succeeded in reading the first letter the current was again diminished and he was again allowed a longer time to read 6/36. The patient was constantly urged, with the assistance of faradism, until he was able to read finally the smaller letters of the card. When this was accomplished it was found that the spasm had disappeared. In treating the opposite eye, the one already treated was bandaged until complete recovery had been effected. No attention was paid to the spasm, and no reference of it made to the patient, the idea being to restore the sight. Before he was permitted to return to his ward it was necessary for him to read all the letters of another card, using both eyes. The patients treated by this method required considerable time before complete recovery took place.

It was found that when once the patient succeeded in reading the largest letter on the card, his mental attitude changed from a state of apathy to one of hope, and when this was accomplished it required only a short time to persuade him to read the smaller letters; but the length of time required to secure the first response varied from half an hour to one hour.

The method finally adopted consisted in bringing about the first return of function as rapidly as possible. This was done by placing the vision card a very short distance from the patient; indeed, in some cases the card was placed in the patient's hands. In one case of complete loss of vision due to blepharospasm the patient succeeded in deciphering the first letter immediately after the first faradic application. Re-education was also more rapid, and when the smaller letters had been successfully read by the patient, the blepharospasm had disappeared and he experienced no difficulty in reading 6/6—6/5. This method yielded appreciably more rapid results. To give an illustration of the latter method

I shall quote the case of a private, 26 years of age, who had been recommended for discharge from the Army in December, 1915, after an attack of "dysentery" and "myalgia." Instead of being discharged he was at some subsequent date transferred to a hospital in Manchester, where he was again considered as unfit for further military service. The patient, however, was sent back to France, he said, "through some mistake." In July, 1917, he first noticed a "twitching" in the left eye when doing transport work under shell fire when he was at Ypres. He complained of this whenever opportunity afforded itself, and each time he reported, he asked if he could be examined by an eye specialist. The "twitching" in the left eye was increasing daily, and flickering began in the right eye. November, 1917, he returned to England on 10 days' leave, and when leaving the train at a station in London he "completely lost his sight." A police officer saw him struggling to find his way through the crowded station and had him taken to the nearest military hospital, where he remained for three months, and while there began reading Braille. On admission to the National Hospital he was led by a comrade, and when walking through the hall he put his arms out in front of him. He said he could distinguish light from darkness. There was marked blepharospasm present. This patient recovered after ten minutes' treatment.

Ptosis

Only one case of ptosis has come under my observation and this was a genuine hysterical condition in which the ptosis was only part of the various hysterical manifestations. This patient was 30 years of age. Her father died of "paralysis" at 70 in an asylum, and one sister was found drowned. The patient suffered from fainting fits since the age of 18 years. She underwent twelve different operations for ear disease. A year before her admission to the National Hospital she had her appendix removed and ten months later the uterus and ovaries were removed.

On her admission to the National Hospital the right eye was completely closed, and she was unable to open it voluntarily, although when attempts at passively opening her lid were made there was marked resistance due to the violent contraction of the orbicularis oculi. When persisting with her for some time for the purpose of passively opening the lid there was marked blepharospasm. In addition to this symptom there was right facial paralysis and deviation of the tongue to the left, together with complete right hemianaesthesia. There were no signs of organic nervous disease. This patient was made to read the vision card and between her attempts at reading it faradism was applied to the closed lid by means of a key electrode. When she had succeeded in reading 6/5 the lid could be opened and closed voluntarily without difficulty.

It was interesting to observe that in this case blepharospasm preceded complete recovery.

Spasm of accommodation

The mechanism of accommodation depends upon the elasticity of the lens, which tends to approximate to the shape of a sphere. The lens is enclosed in a capsule, which is attached to the ciliary body by the fibres of the zonule of Zinn. These fibres are tightly stretched. In the act of accommodation, the relaxation of the zonule is effected by the contraction of the ciliary muscle.

The phenomenon of the action of the antagonists is difficult to demonstrate in functional spasm of accommodation, because there is only one muscle taking part in it. However, it may be explained on the assumption that the suspensory ligament of the lens performs an opposite action to that performed by the ciliary muscle. The tension of the suspensory ligament depends upon the relaxation of the ciliary muscle. The suspensory ligament which is held normally in a state of tension is only altered by the contraction of the ciliary muscle, when the latter contracts the ligament is relaxed; on the other hand, when the ligament is in a state of tension the ciliary muscle is relaxed. The spasmodic contraction of the ciliary muscle acting on the suspensory ligament, which is normally tense, produces a spasm which is similar to that produced when movement is made against voluntary resistance. If the best contraction of any muscle is dependent upon the relaxation of its antagonist, and if the suspensory ligament may be considered as the antagonist of the ciliary muscle, spasmodic contraction of the ciliary muscle acting on the suspensory ligament, which when at rest is stretched to its greatest extent, will produce spasm of accommodation.

Spasm of accommodation is usually, though not always, associated with either spasm of convergence or spasm of divergence.

In treating this condition, it is necessary to re-educate the patient to see near and distant objects. A faradic battery is employed; the pad electrode is placed over the cervical spines and a key electrode applied either to the closed lid or to hairless portions of the scalp or back of the neck.

My first case of this condition was that of a young Irish woman, twenty-one years of age, who had suffered from spasm of accommodation for periods extending over sixteen years. She had been under the care of competent ophthalmologists, and on one occasion she was taken to an eminent ophthalmic surgeon in Paris. Throughout the disorder the amount of the spasm varied, giving rise at times to very high apparent myopia. For a long period of time she was obliged to use atropin to overcome the spasm, the drops being placed in the eye every morning.

The treatment consisted in overcoming the spasmodic contraction of the ciliary muscles by re-educating the patient to fix first of all on distant objects, and after that to fix on near objects. She was made to read the letters on the vision card at six metres; the card was gradually brought closer and closer to the patient, but each time it was brought closer and read correctly it was again taken back to its former distance. The process of bringing the card nearer and afterwards withdrawing it was persisted with until the patient was able to read rapidly small print close to her, and immediately after look up and see clearly the smaller Snellen type at six metres distance. This case required about six hours' continuous treatment, the reason for this, no doubt, being that when the card was six metres distant from her, it was necessary for her to relax almost completely her accommodation. The re-education of the action of the ciliary muscle was in this case reversed, or, in other words, was a case of "cart before the horse."

The next case I treated was that of a woman of about 28 years of age, with almost complete blindness following an attack of measles simultaneously with a shock brought on by her knowledge of the court-martial of her fiancé. The condition existed less than a week, and a diagnosis of disseminated sclerosis had been suggested. When I saw her, there was marked spasm of accommodation with slight blepharospasm. This patient was treated by placing the vision card first of all close to her, while faradism was applied by means of a key electrode to the closed lid. After each application she was given an opportunity of reading all the letters she could on the card. When the response was not satisfactory the current was increased in strength and the application made longer. After she had succeeded in reading all the letters close to her, another card was placed, 1 metre away, then 2 metres away, until finally she succeeded in reading all the letters at 6 metres distance. When she had succeeded in reading a page of book matter she was instructed to read the lowest letters on the vision card at 6 metres distance. This she did without difficulty. This patient required about one hour's treatment.

My other cases have been treated on the same principles; one of them, with the disorder existing four years, was completely relieved after fifteen minutes' treatment.

II. The second group of cases are those in which the contraction of antagonists cannot be demonstrated. These include limitation of the fields of vision and amblyopia.

Limitation of the Fields of Vision

The cases of disturbances of the visual fields which have come under my observation have been patients in whom the contraction of the visual fields has been limited in all angles with slight

variations. Neither patient had received wounds. It is doubtful if these cases are really hysterical; they are decidedly not organic.

On examining these cases the following tests were applied. The patient was seated 1 metre from a Bjerrum screen, and the fields of vision mapped out for each eye, the pins being left in the screen while the opposite eye was being tested. Exactly the same constriction of fields was found in both eyes. The patient was next tested by means of an ordinary perimeter, and the fields on this occasion were found to be much larger. He was again taken to the Bjerrum screen, and instead of being placed a metre away from the screen was placed 1.5 metres away, the distance being increased unknown to the patient. Exactly the same field was discovered, the pins having been left in the screen. Such a limitation of fields could not possibly be genuine.

To explain to the patient that the examination yielded inconsistent results would be no doubt futile, because it is not likely he would have understood.

In treating such conditions it is desirable not to lead the patient to believe that malingering is suspected, but to assure him that the condition will readily respond to treatment.

The patient is seated at a perimeter, and a chart employed for the purpose of marking the improvement, and this shown to him. A pointer, to which a disc of 0.5 cm. in diameter is attached, is then moved out from the fixation point, starting at the horizontal meridian on the temporal field. Gentle faradism is then applied to the same angle on the orbital ridge, the angle being taken from the pupil as it is fixed on the fixation point on the perimeter. If there is no improvement with gentle faradism the current is increased until the field in that angle is increased. All angles 15 degrees distant are similarly treated, the part stimulated on the orbital ridge corresponding as nearly as possible with a similar angle from the pupil as it is fixed on the fixation point of the perimeter. Treatment of one angle is not discontinued until that part of the field becomes normal.

It is usually found that after the temporal field in one angle has recovered there is no need for further treatment. Both eyes are similarly treated. The patient is then shown the normal markings of the fields of vision on the chart, and he is also shown the extension of the markings of his own visual fields which approximate to the normal fields of vision. He is then told that his vision is normal.

The patient is again taken to the perimeter, the pins having been left in position. He is placed one metre from the screen, and when the fields are tested again it will be found that the screen is too small to mark his visual fields.

Various forms of disturbance of the visual fields due to hysteria

have been described ; these have included homonymous and bilateral hemianopia, etc. Some cases of spiral fields, and of constricted fields, have been recorded by Kinnier Wilson,* who attributes their cause not to hysteria but to some molecular concussion. All of his cases had received definite head injuries.

Amblyopia

It has been my experience to find disturbance of the acuity of vision as a monosymptomatic manifestation of hysteria exceptionally rare. I have not yet seen a patient in whom the only complaint was that of binocular blindness. Such cases, however, have been reported, but in the reports that I have seen, it had not been stated whether or not blepharospasm was present. All my cases have been those of monocular blindness, and I am not in a position to state definitely whether all these were due to hysteria. I incline to the view that blindness not associated with blepharospasm or hysterical manifestations in some other parts of the body, is simulated. One of my cases of monocular blindness had a hysterical fit shortly after admission. I employed supraorbital pressure, which soon relieved the seizure. Immediately afterwards I placed a vision card in front of him and informed him that I intended to apply pressure over the nerves above his eyes until he was able to read every letter on the card. It was not necessary to apply any more pressure, as he was able to read the card correctly without the assistance of any additional physical distress.

The method I employ for the treatment of such cases is similar to that already described under the treatment of blepharospasm. It is best not to lead the patient to believe that malingering is suspected, but rather to impress on him the idea of the cure being permanent. He is told plainly that it is impossible to distinguish in his case between hysteria and malingering, and that the only proof of the genuineness of the condition is to be found in the permanency of the cure.

* "Concussion Injuries of the Visual Apparatus in Warfare of Central Origin." *Lancet*, July 17, 1917.