A CASE OF "COMPLICATED" ABORTIVE TABES DORSALIS

With Commentary by

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The case here described presents a most interesting clinical problem and illustrates the possible fallacy of subordinating clinical observation to laboratory findings.

Description of Case.

F. D., male, aged 47, was admitted to St. Charles' Hospital complaining of pain in the right side of abdomen radiating upwards and of loss of weight.

History.—At the age of twelve, he developed a "sore" on the glans penis as the result of "riding a horse". Had "gonorrhoea" at 16. Married at 20, one child now living, being born 9 years later; wife had no other pregnancies.

Apparently in good health till August 1914, when a car accident in Glasgow kept him in hospital for 3 months. According to his wife, he was unconscious for 6 weeks and when discharged his right eye was completely closed, his left eye nearly so, and he dragged his left leg. The patient himself states that he remembers nothing of the period between the accident and July 1915, when both his eyes were closed and his left arm and leg were weak. The hospital records of that period have been lost, only the dates of admission and discharge and the diagnosis of "fracture of base of skull" having been traced.

Since the accident the power of his left arm and leg has improved but he still keeps falling about. He has uncontrollable fits of temper, at times threatening to shoot his family. These symptoms have been worse during the past six months. During the last three months he has become much thinner. No disturbance of micturition. Impotent since accident.

Condition on admission.—Nil abnormal found in fauces, heart, lungs and abdomen. Teeth artificial. Large depression in right parietal region of the skull. Circular depressed scar on glans penis; puckered scar in right groin and pigmented scars on the anterior aspects of both legs.

C. N. S.: Rational; much occupied with his symptoms; garrulous; cranial nerves other than those of eye normal. Report from ophthalmic surgeon: "Right side: pupil fixed in paralysed condition; ptosis; very slight spasmodic movements only when left eye moved. Left side: pupil reaction mainly confined to pigmented portion in upper and outer half of iris; movements mainly inwards. Diagnosis: right ptosis; partial ophthalmoplegia interna and externa, right more marked than left"; some hypalgesia of left cheek and left side of nose; upper limbs: left arm slightly weaker, arm jerks absent except for ? slight biceps jerk on both sides, hypalgesia on ulnar border of both arms, slight inco-ordination in finger to nose test; abdominal reflexes all slight; lower limbs: left leg slightly weaker, no obvious wasting, knee and ankle jerks absent, right plantar response flexor, left indefinite, no loss to touch or pain, no inco-ordination, walks fairly well, no Rombergism, muscle reactions normal.

Urine: Sp.Gr. 1038, sugar and acetone present.

Further Investigations.

Sugar tolerance test:—

Before administration of glucose	...	...	.217%
30 minutes after administration of glucose	...	...	.251%
60	"	"	.268%
90	"	"	.276%

55 units of insulin with 8 lines of Lawrence diet required to keep patient sugar-free. This has now been gradually reduced to 40 units and he is putting on weight.

X-ray of skull shows old depressed fracture in right parietal region. Wasserman and Kahn reactions in blood negative. X-ray examination of stomach and fractional test meal normal. Cerebro-spinal fluid: clear, 2 lymphocytes per c.mm., total protein 0.06%, Lange test negative, W.R. negative. A provocative dose of 0.3 gm. N.A.B. was given three weeks after the first lumbar puncture; the C.S.F. obtained six days later showed 4 lymphocytes per c.mm., total protein .08%, slight increase in globulin, Lange and W.R. negative; Blood W.R. and Kahn test at this time also negative.

Commentary.

To summarise, the patient presents the following features: (1) diabetes mellitus; (2) the "remains" of a left hemiplegia; (3) right ptosis with bilateral ophthalmoplegia interna and externa, (4) absent ankle and knee jerks; (5) an old depressed fracture in right parietal region and a history of "fracture of base of skull" in 1914; and (6) prima facie evidence of syphilitic infection as shown by the history and the presence of scars on penis and in right groin.

It is obvious that no single diagnosis will cover all the symptoms and signs. The diabetes would appear to be a clinical entity (but see below) and the hemiplegia may be fairly definitely attributed to the fractured skull in 1914. There remain the eye signs and the absent lower limb reflexes. Both the patient and his wife reaffirm that his eyes were "exactly as they are now" when he left hospital in 1915, and in view also of the Glasgow hospital diagnosis and the fact that the lesions are compatible with a fractured base involving the mesencephalon, it seems unnecessary to attribute any other cause, although it is impossible entirely to exclude the syphilitic factor.

The absent reflexes could be accounted for (1) by diabetic peripheral neuritis or (2) by tabes dorsalis. The former diagnosis is not excluded by the absence of subjective symptoms or other physical signs in the legs. On the other hand, there is good circumstantial evidence of syphilitic infection. Clinically, however, there is little else in favour of tabes dorsalis—ulnar hypalgesia and slight incoordination in upper limbs. The laboratory findings are completely negative except for the increased total protein and globulin after a provocative N.A.B. injection.

How far is one justified in making a diagnosis of tabes? It is recognised that the classical serological accompaniments of tabes (increased cells, increased protein, presence of globulin, luetic Lange curve and positive W.R. in blood and C.S.F.) are not always present.

Laiguel-Lavastine⁽¹⁾ in 1901 was the first to draw attention to the possible absence of lymphocytosis in the C.S.F. in tabes and G.P.I.; Sicard and others⁽²⁾ also described a similar phenomenon in cases of tabes. Kaplan and Casamajor⁽³⁾

(1912) reported 11 cases (out of a total of 167) of uncomplicated tabes with negative W.R. in blood and C.S.F. and negative globulin test and cell count. Lehmann⁽⁴⁾ describes typical tabes in both husband and wife, in both of whom the blood W.R. and every C.S.F. test were negative, except for positive globulin test in the man's C.S.F.; moreover, all these tests were still negative when performed some months later.

Claude, Vincent and Cotoni⁽⁵⁾ have described a case of tabes in which the lymphocytes disappeared in spite of no treatment. Babonneix and Pollet⁽⁶⁾ reported a case of typical tabes with completely negative laboratory findings; two months later the investigations were again negative, except for the presence of 80 cells per c.mm. in the C.S.F., and they question whether this might be a meningeal reaction to the previous lumbar puncture. It is of interest to note that Laignel-Lavastine⁽⁷⁾ in 1901 suggested such a possibility, and Widai⁽⁸⁾ at the same meeting reported that according to investigations in his clinic an increase of cells in the C.S.F. purely as a result of the lumbar puncture might occur if "cocaine" were injected into the spinal canal afterwards. As novocaine is commonly used at lumbar punctures this would appear to be a point well worth further investigation.

Max Nonne⁽⁹⁾ in his well-known book discusses the question in relation to serological findings and makes the following statements:—

- (1) A lymphocytosis in the C.S.F. is present in only 97 per cent. of cases of tabes and G.P.I.
- (2) In tabes the total protein is above 0.05 in 55 per cent.
- (3) According to Plant, the blood W.R. is positive in 70 per cent., and the C.S.F. W.R. in 50 per cent. of tabetics (for G.P.I. the corresponding figures are 100 per cent. and 90 per cent.).
- (4) The above percentages with regard to the C.S.F. are only accurate if the W.R. is performed with 0.2 c.c. C.S.F. If more C.S.F. is used with the least amount of antigen, then there are more positives. But even then the W.R. is not always positive.
- (5) When the W.R. in the C.S.F. in a tabetic is strongly positive, it suggests the presence of G.P.I. as well.
- (6) Cases in which all four reactions (cells, globulin and both W.R.'s) are negative occur.

In America, Solomon has done considerable work on this subject. In 1915 he and Wells⁽¹⁰⁾ showed that not only the Lange curve but all the other tests (including the W.R.) in the C.S.F. from various loci of the central nervous system (ventricle, cisterna magna, base of brain and lumbar sac) may be different in a *given* case, and that this phenomenon was not at all infrequent. In 1920 he⁽¹¹⁾ discusses the "non-concomitance" of spinal fluid findings. "There are many cases in which mildly pathological spinal fluids bridge over the gap between the negative spinal fluids and those with the usual type of spinal fluid findings." He quotes a case of tabes with positive blood W.R. and a C.S.F. with 139 cells, and negative globulin, Lange and W.R. "Although usually present together and in a general way indicative of the same pathological condition, each reaction is produced by a distinct chemical element which may be present alone."

In view of the findings in my patient Solomon and Klauder's⁽¹²⁾ work on provocative reactions in the C.S.F. are of interest. They found that definite alterations in the C.S.F. findings may occur after a dose of arsphenamin, though it is

not a frequent phenomenon. They quote a case with complete negative blood and C.S.F. tests in which after arsphenamin injection the C.S.F. W.R. was positive, and 53 cells, increased protein and globulin, and a Lange curve 2443330000 were found. They review the whole question in 1921⁽¹³⁾ and state that the most frequent forms of neurological syphilis with negative C.S.F. findings is the vascular type. Clinical tabes with normal C.S.F. are divided into:—

- (1) Incipient progressive type;
- (2) Those in which pathological findings disappear after treatment;
- (3) Abortive tabes.

The C.S.F. may also be negative in cerebral nerve palsies and cerebral gumma. "Our conviction is that there are many instances of cerebral and even spinal syphilis in which spinal fluid reactions are negative but yet patients are actively syphilitic and react favourably to treatment."

In view, therefore, of the history and the clinical evidence of infection, and in spite of the almost negative serological findings, I suggest my patient is an abortive case of tabes dorsalis and does not require any active treatment. The presence of some peripheral neuritis due to the diabetes cannot, however, be excluded.

One other interesting point arises—the relation of the diabetes to the syphilitic infection. The French regard syphilitic infection of the pancreas as very common. In England it is rarely mentioned. Before 1916 both McCallum and Opie spoke of it as a very rare infection. Warthin⁽¹⁴⁾ (1916), however, described the results of 150 autopsies on cases of latent syphilis. In *all* of these he found histological changes which he regards as characteristic of latent syphilis. He did not find these particular changes in any other form of infection or intoxication. But only in one of these cases were spirochaetes actually demonstrated. He concludes by affirming that syphilis is the most common cause of chronic interstitial pancreatitis.

Finally, it is of interest to note that out of the 150 cases he examined, 6 had been diabetics. The pancreatic histological changes did not, however, differ in them.

One feels, therefore, justified in at least suggesting that the diabetes and tabes in this case may have a common origin.

It is a pleasure to acknowledge my indebtedness to Dr. Basil Hood for his permission to publish the notes of this case.

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Postscript.—Recently I received a letter from the patient, three months after discharge from hospital, in which he states that he is feeling well, keeping up his weight of over 12 stone and being sugar-free on 40 units of insulin a day, but that he has developed shooting pains in his legs, chiefly the right.

In view of the above it would appear as if the term "abortive" tabes may not be justified, and that anti-syphilitic treatment is indicated.—G.G.K.