

Diabetic neuropathy in the 19th century



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Today's diabetes world is fast-moving and exciting; knowledge is accumulating at an astonishing rate, new discoveries and understanding lead to new ideas and innovations in treating, managing and preventing diabetes.

However, there's nothing new under the sun. To help understand the present, it sometimes helps to examine the past.

Tattersall's Tales will enable readers to do just that. In every issue, Robert Tattersall, renowned diabetes sage and guru, will consider an aspect of diabetes and place it in a suitable historical context. Research, treatment, people and products will all feature.

In this instalment, Robert Tattersall discusses diabetic neuropathy in the 19th century, focusing on the insightful work of Frederick Pavy (1829–1911).

In the late 19th century, doctors were therapeutically impotent: apart from prognosticating and comforting their patients, they were taxonomists who described symptom complexes and the natural history of disease. As a result, most major complications of diabetes were well described before 1900. The descriptions of neuropathy by Frederick Pavy (1829–1911) of Guy's Hospital are wonderfully vivid. He was the first Englishman to write a monograph on diabetes and, by 1894, claimed to have seen 2642 cases in his private practice (Tattersall, 1996). In 1885 he drew attention to the neurological accompaniments of diabetes (Pavy, 1885). His description would not be out of place in a modern textbook:

'The usual account given by these patients of their condition is that they cannot feel properly in their legs, that their feet are numb, that their legs seem too heavy – as one patient expressed it, 'as if he had 20 lb weights on his legs and a feeling as if his boots were great deal too large for his feet'. Darting or "lightning" pains are often complained of. Or there may be hyperaesthesia, so that a mere pinching of the skin gives rise to great pain; or it may be the patient is unable to bear the contact of the seam of the dress against the skin on account of the suffering it causes. Not infrequently there is deep-seated pain located, as the patient describes it, in the marrow of the bones which are tender on being grasped, and I have noticed that these pains are generally worse at night.'

In 1904 he revisited the subject (Pavy, 1904). He classified the manifestations as motor, sensory, reflex, vasomotor and nutritional. The main sign of motor neuropathy was ataxia and the differential diagnosis *tabes dorsalis*, hence the name 'diabetic pseudotabes'. Pavy wrote:

'It is a common thing to find that the patient cannot satisfactorily get along with out the aid of a stick or the arm of a friend. His gait is unsteady. He feels insecure on his legs from a want of balancing power.'

One patient was a non-conformist minister who was thought by his congregation to be drunk and Pavy had to produce a medical certificate on his behalf! Pavy described the sensory symptoms:

'Sometimes the soles of the feet are extremely tender, rendering walking painful. In other cases the patient may assert that he does not feel the ground properly or that it seems to him as though he were walking on pebbles or on pointed projections. Aching deep seated pains in the limbs, sometimes conjoined with "lightning" pains may be experienced and it is often stated that there appears to be a tenderness of the flesh and bones.'

Neuropathy led to 'the contractility of the vessels being thrown

out of proper working order'. One consequence of this was abnormalities of sweating, but more seriously it placed the feet: *'... in an exceptionally vulnerable position. A very trivial injury may suffice to lead to the establishment of serious mischief, involving often a more or less extensive loss of living parts and, it may be, even the loss of life.'*

The legs were most commonly affected, but he had also seen cases where 'the main seat of the trouble was in the abdominal region', for example, a 67-year-old who complained of 'lightning pains on the right side of the waist'. There were also occasional cases in which the third nerve was affected with 'dropped lid and external squint'.

Pavy regarded neuritis as due to the effects of sugar and rejected the claims of neurologists that, because many of the patients were 'mild diabetics', some other toxin was responsible. He claimed that the symptoms would resolve in many cases simply by appropriate dieting 'to remove or reduce the sugar.' If this did not work, he recommended opium or codeine. In a few cases he had used 'continuous galvanic current' with very satisfactory results. Where the main symptom was superficial pain he suggested the 'cautious application of the linimentum aconiti' (an alkaloid from the monk's hood plant which is very soluble in alcohol and was also used for treating trigeminal neuralgia). These two measures will be seen as the Victorian prototypes of the TENS machine and capsaicin cream.

Another common manifestation of neuropathy which Pavy mentioned in typically circumlocutory language:

'What has been said in respect of muscular action will apply also in explanation of the loss of virility which accompanies the inveterate form of the disease. The condition which the blood presents may be considered as unsuited for the maintenance of functional activity in the organs in question.'

Interestingly, Pavy's star patient, a market porter called Joseph North, recovered his potency during his stay in Guy's Hospital from February 1 – May 31 1861. Had this been widely publicised, it would doubtless have done wonders for Pavy's private practice!

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