

- 16 **Nyein K**, McMichael L, Turner-Stokes L. Can a Barthel score be derived from the FIM? *Clin Rehabil* 1999;13:56–63.
- 17 **Turner-Stokes L**, Williams H, Abraham R, *et al*. Clinical standards for inpatient specialist rehabilitation services in the UK. *Clin Rehabil* 2000;14:468–80.
- 18 **Turner-Stokes L**, Turner-Stokes T. The use of standardized outcome measures in rehabilitation centres in the UK. *Clin Rehabil* 1997;11:306–13.
- 19 **Turner-Stokes L**. Standardised outcome assessment in brain injury rehabilitation for younger adults. *Disabil Rehabil* 2002;24:383–9.
- 20 **Burnett DM**, Kolakowsky-Hayner SA, Slater D, *et al*. Ethnographic analysis of traumatic brain injury patients in the national Model Systems database. *Arch Phys Med Rehabil* 2003;84:263–7.
- 21 **Rusconi S**, Turner-Stokes L. An evaluation of aftercare following discharge from a specialist in-patient rehabilitation service. *Disabil Rehabil* 2003;25:1281–8.
- 22 **Edwards MJ**, McNeil JE, Greenwood RJ. Process and outcome during early inpatient rehabilitation after brain injury. *Disability Rehabil* 2003;25:405–10.

## HISTORICAL NOTE .....

doi: 10.1136/jnnp.2005.082198

### Myxoedema and Sir William Withey Gull (1816–1890)

This is a brief history of hypothyroidism and the contribution of Sir William Withey Gull. Hypothyroidism and its complications provide many clinical puzzles for neurologists.

The thyroid had no known function until the end of the 19th century. In the wake of the term coined by Claude Bernard (1813–1878) in 1855, "internal secretion", and his concept of the *milieu interieur*, Sir William Withey Gull in 1873 was one of the first to understand that the cause of myxoedema is atrophy of the thyroid gland.

Gull's seminal paper<sup>1</sup> related the changed appearance of a Miss B:

"after the cessation of the catamenial period, became insensibly more and more languid, with general increase of bulk... Her face altering from oval to round, ...the tongue broad and thick, voice guttural, and the pronunciation as if the tongue were too large for the mouth (cretinoid)... In the cretinoid condition in adults which I have seen, the thyroid was not enlarged. ...

There had been a distinct change in the mental state. The mind, which had previously been active and inquisitive, assumed a gentle, placid indifference, corresponding to the muscular languor, but the intellect was unimpaired... The change in the skin is remarkable. The texture being peculiarly smooth and fine, and the complexion fair, at a first hasty glance there might be supposed to be a general slight oedema of it... The beautiful delicate rose-purple tint on the cheek is entirely different from what one sees in the bloated face of renal anasarca."

Four years later, William Miller Ord (1834–1902)<sup>2</sup> introduced the term myxoedema. Like Graves' disease, it was generally considered an affliction of the nervous system, which shows how little was known of the thyroid. William Smith Greenfield (1846–1919) of Edinburgh, who examined pathologically one of Ord's myxoedema patients observed that it was the antithesis to exophthalmic goitre. In his Bradshaw Lecture (1893):

'In thus discussing Graves' disease, even provisionally as a disease of the thyroid gland rather than of the nervous

system, I am aware that I am opposed to nearly all English and American physicians of eminence.'

but Kocher even 10 years later observed:

"Surgeons had simply assumed that the thyroid gland has no function whatever...";

And Jaques-Louis Reverdin asked in 1882:

"Can it be that the thyroid body whose functions are still obscure plays a part in haematopoiesis so important that its ablation produces such profound trouble?"

George Redmayne Murray (1865–1939) of Newcastle, stimulated by his mentor Victor Horsley (1857–1916), introduced in Britain the successful treatment of myxoedema in 1891, with injections of sheep thyroid extract.<sup>3</sup> A similar success in Lisbon reported in 1890,<sup>4</sup> but reported in Portuguese, was overlooked.

The discovery of autoimmune thyroid disease<sup>5 6</sup> had to await the 20th century.

**J M S Pearce**

Department of Neurology, Hull Royal Infirmary, UK

Correspondence to: J M S Pearce, 304 Beverley Road, Anlaby, East Yorks, HU10 7BG, UK; jmsp@freenet.co.uk

Competing interests: none declared

### References

- 1 **Gull WW**. On a cretinoid state supervening in adult life in women. *Trans Clin Soc Lond*, 1873–, 1874;7:180–185.
- 2 **Ord WM**. Report of a committee of the Clinical Society of London nominated December 14, 1883, to investigate the subject of myxoedema. *Trans Clin Soc Lond* 1888;21(suppl).
- 3 **Murray GR**. Note on the treatment of myxoedema by hypodermic injections of an extract of the thyroid gland of a sheep. *Brit Med J* 1891;2:796.
- 4 Un cas de myxoedème traité par la greffe hypodermique du corps thyroïde d'un mouton. *Sem Medicale* 1890;10:294.
- 5 **Weetman A**. Autoimmune thyroiditis: predisposition and pathogenesis. *Clin Endocrinol* 1992;36:307–23.
- 6 **Vaidya B**, Kendall-Taylor P, Pearce SHS. The genetics of autoimmune thyroid disease. *J Clin Endocrinol Metab* 2002;87:5385–5397.