be paid to serial measurements of height and weight plotted on centile charts, physical examination and inflammatory markers. Continued cooperation between paediatricians and child psychiatrists is essential for successful diagnosis and management of these children.

Little is known about the eating habits of children with Crohn's disease, and a comparison of their eating behaviours with those of children with eating disorder without known organic pathology represents an intriguing possibility for future investigation.

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References

BOOTH, I. W. (1991) The nutritional consequences of gastrointestinal disease in adolescence. *Acta Pediatrica Scandinavica* (suppl. 373), 82–90.

BRUCE, T. (1986) Emotional sequelae of inflammatory bowel disease in children and adolescents. *Clinical Gastroenterology*, **15**, 89–104.

BURBRIDGE, E. J. (1975) Clinical manifestations of Crohn's disease in children and adolescents. *Pediatrics*, **55**, 866–871.

GRIFFITHS, A. M., WESSON, D. E., SHANDLING, B., *et al* (1991) Factors influencing post-operative recurrence of Crohn's disease in childhood. *Gut*, **32**, 491–495.

GRYBOSKI, J. D., KATZ, J., HOYETT SANGREE, M., *et al* (1968) Eleven adolescent girls with severe anorexia: intestinal disease or anorexia nervosa? *Clinical Pediatrics*, **7**, 684–690.

HAMILL, P. V. V., DRIDZ, T. A., JOHNSON, C. L. J., *et al* (1979) Physical growth. National Center for Health Statistics Percentiles. *American Journal of Clinical Nutrition*, **32**, 608–629.

HELZER, J. E., CHAMMAS, S., NORLAND, C. C., *et al* (1983) A study of the association between Crohn's disease and psychiatric illness. *Gastroenterology*, **86**, 324–330.

JENKINS, A. P., TREASURE, J. S. & THOMPSON, R. P. H. (1988) Crohn's disease presenting as anorexia nervosa. *British Medical Journal*, **269**, 699–700.

LANCET (1975) Mimicry in Crohn's disease (editorial). *Lancet*, *ii*, 115–116.

PALLA, B. & LITT, I. F. (1987) Medical complications of eating disorders in adolescents. *Pediatrics*, **81**, 613–623.

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'Dyschronia' in a Patient with Tourette's Syndrome Presenting as Maternal Neglect

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We report an unusual and unsuspected cause of maternal neglect in a patient with Tourette's syndrome. An important cause of the behaviour appears to have been a form of dyscalculia characterised by a complete inability to appreciate the passage of time. To our knowledge this is the first case of its kind to be reported.
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Case report

A 23-year-old unmarried woman and her five-month-old baby son were referred to us by their local social services department for an assessment of the mother's ability to care for her child. She was the only daughter of elderly parents, and the family were isolated and inward-looking. They considered themselves psychic and took a practising interest in the occult. Her own birth had been complicated by a difficult labour. At the age of eight she was diagnosed as having Tourette's syndrome, with both motor and vocal tics and coprolalia, and was known in the family as the 'devil child'. She received no specific treatment. From her late teens she had been virtually free of symptoms. However, she had never held down a job and remained living at home. She had a history of impulsive and occasionally violent behaviour. When she became pregnant, she concealed the fact and only presented to the local medical services at 37 weeks.

Her baby was delivered in hospital weighing 3.2 kg. An obsessional concern with the sterilisation of bottles and the

making-up of feeds, as well as rituals surrounding nappy-changing, was noted by staff following the birth. Mother and baby were discharged at ten days, but the baby had to be readmitted two months later weighing only 3.43 kg. At home it appears that, although seemingly concerned for her child, she had no idea of the number of feeds she had given and allowed him to go unfed for periods which on one occasion reached 14 hours. When he subsequently cried, she became frustrated and reacted at times with explosive rage. Because of the failure to thrive, the baby was fostered. It was incidentally reported that, despite the mother's eager anticipation of access visits, she invariably arrived late for them.

She was interviewed alone, and observed together with her baby. At the time of interview there were no tics and no obsessional features observed. She was well presented and her manner was at all times appropriate and cooperative. Her talk was highly circumstantial and she described obsessional behaviour in the past, but there were no signs of current mood disorder or abnormalities of thought content. The striking feature of the account she gave was her lack of sense of time. She could not distinguish between periods of weeks, months and years, and had a distorted chronology of her own life. In giving dates from her personal history she was either incorrect, sometimes by as much as five years, or used vague phrases as "a lifetime ago".

On cognitive testing she had excellent verbal skills and could read and spell well, with good verbal fluency and verbal memory. When her numerical skills were specifically addressed, however, it became apparent that she had an isolated and severe dyscalculia. (She answered that $10+6=19$, $10-4=7$ and $3\times2=5$, and was unable to attempt $6\div6$.) She though that there were 10 seconds in a minute and 24 minutes in an hour. She was quite unable to read a clock or watch and filled in the figures on a clockface backwards. She gave herself wide limits in estimating the passage of time during the interview, for example "half an hour to an hour". She rehearsed the sequence of the months incorrectly and gave it as currently "the seventh or eight month", which she believed to be September (it was in fact October). Other cognitive functions were normal and there were no neurological signs.

Routine blood investigations were normal, including negative syphilis serology. A computerised tomographic scan showed a marginally more prominent right temporal horn, and an electroencephalogram showed a mild excess of theta activity.

Discussion

Clearly there were a number of reasons to be concerned about this woman's capacity to care adequately for her child. Her circumstances as an unmarried mother who had concealed her pregnancy, taken together with her family situation, were themselves unpropitious. In addition she had a history of poor relationships and poor impulse control. However, what had puzzled social services was that a woman who was, if anything, excessively keen to perform her maternal duties (albeit in a rather rigid fashion), and who had not harmed her baby by impulsive behaviour or left the baby unattended, nonetheless had great difficulty judging the amount and frequency of feeds. A similar puzzle arose in the context of access visits: although she was clearly eager to see her child, and behaved appropriately and affectionately during the visits, she invariably arrived late. The case presented to social services as maternal neglect, and it seems probable that an important contribution to the behaviour was made by the mother's remarkable and profound inability to judge the passage of time.

A report on the mother at age 11 notes: "She is very slow at figures and can't tell the time. . . . [Her mother] is continually trying to encourage her to learn how to tell the time with promises of a watch, etc."

Three somewhat distinct deficits appear to be related in the patient: dyscalculia, inability to read or draw a clockface, and impaired subjective appreciation of time. It is understandable that an inability to manipulate numbers, especially to divide, would lead to frustration in attempting to tell the time, and that as a result she would have lacked practice in dealing with clocks (there was no right–left disorientation to account for her incorrect numbering of the clock). Without the habit of reading and referring to a clock, it is equally comprehensible that she should have a poor sense of the passage of time. However, it is harder to argue that this alone accounts for the complete inability to name dates correctly or to give the sequence of the months, unless the impairment of the immediate sense of time has resulted in a profound and pervasive neglect of all aspects of chronology.

We propose that such a defect exists in this patient, and that as a result she suffers from what might be termed 'dyschronia'.

The relation of her problems to Tourette's syndrome is a further point of interest. Obsessive–compulsive features are intimately linked with the syndrome (Robertson, 1989) and occur in over a third of patients (Robertson *et al*, 1988). She was noted to have angry or violent outbursts and these may also be more common (Corbett *et al*, 1969; Moldofsky *et al*, 1974; Yaryura-Tobias *et al*, 1981; Stefl, 1984). Physical aggression to persons or property is often encountered (Comings & Comings, 1985; Robertson, 1989). As far as cognition is concerned, language skills, as in this patient, are largely unimpaired (Robertson, 1989) and full-scale IQ normal, but verbal–performance differences are significantly more common, and visuopraxis tends

to be poorer (Robertson, 1989). Golden (1984) reviewed the neuropsychological aspects of the syndrome and found that there was a specific problem with arithmetic, which had previously been identified in studies by Joschko & Rourke (1982) and Incagnoli & Kane (1982). It should be noted, however, that the numbers of cases in these studies were small, and that this area remains to be fully investigated.

There is evidence that such cognitive and, perhaps more surprisingly, behavioural disturbances can, as in this case, persist after the clinical syndrome has virtually disappeared (Leckman & Cohen, 1983).

References

COMINGS, D. E. & COMINGS, B. G. (1985) Tourette syndrome: clinical and psychological aspects of 250 cases. *American Journal of Human Genetics*, **37**, 435–450.

CORBETT, J. A., MATTHEWS, A. M., CONNELL, P. H., *et al* (1969) Tics and Gilles de la Tourette's syndrome: a follow-up study and critical review. *British Journal of Psychiatry*, **115**, 1229–1241.

GOLDEN, G. S. (1984) Psychologic and neuropsychologic aspects of Tourette's syndrome. *Neurologic Clinics*, **2**, 91–102.

INCAGNOLI, T. & KANE, R. (1982) Neuropsychological functioning in Tourette syndrome. In *Gilles de la Tourette Syndrome* (eds A. J. Friedhoff & T. N. Chase), *Advances in Neurology*, vol. 35. New York: Raven Press.

JOSCHKO, M. & ROURKE, B. P. (1982) Neuropsychological dimensions of Tourette's syndrome: test-retest stability and implications for intervention. In *Gilles de la Tourette Syndrome* (eds A. J. Friedhoff & T. N. Chase), *Advances in Neurology*, vol. 35. New York: Raven Press.

LECKMAN, J. F. & COHEN, D. J. (1983) Recent advances in Gilles de la Tourette syndrome: implications for clinical practice and future research. *Psychiatric Developments*, **3**, 301–316.

MOLDOFSKY, H., TULLIS, C. & LAMON, R. (1974) Multiple tic syndrome (Gilles de la Tourette's syndrome). *Journal of Nervous and Mental Disease*, **15**, 282–292.

ROBERTSON, M. M. (1989) The Gilles de la Tourette syndrome: the current status. *British Journal of Psychiatry*, **154**, 147–169.

———, TRIMBLE, M. R. & LEES, A. J. (1988) The psychopathology of the Gilles de la Tourette syndrome: a phenomenological analysis. *British Journal of Psychiatry*, **152**, 383–390.

STEFL, M. E. (1984) Mental health needs associated with Tourette syndrome. *American Journal of Public Health*, **74**, 1310–1313.

YARYURA-TOBIAS, J. A., NEZIROGLU, F., HOWARD, S., *et al* (1981) Clinical aspects of Gilles de la Tourette syndrome. *Journal of Orthomolecular Psychiatry*, **10**, 263–268.

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Tourette's Syndrome in New Zealand

A Postal Survey

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It has become increasingly evident that Tourette's syndrome (TS) is not as rare as was once thought and substantial cohorts from various parts of the world have been reported. The clinical characteristics seem independent of culture as they appear to occur with some degree of uniformity irrespective of the country of origin. We investigated the point prevalence and report the clinical characteristics of TS in New Zealand. Forty probable cases were identified and the symptoms were similar to those described in cohorts from other parts of the world.

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Tourette's syndrome (TS) is characterised by multiple motor and one or more vocal tics which usually occur many times a day and must be present for a period of more than one year. Classically, the anatomical location, number, frequency, complexity and severity of the tics change over time, and the age of onset is usually before 21 years (DSM–III–R; American Psychiatric Association, 1987).

The most common motor symptoms are blinking of the eyes, head shaking and shoulder shrugging, while sniffing, coughing and clearing of the throat are common vocalisations. Obsessive thoughts and compulsive behaviour are now being recognised as important parts of the disorder, as are coprophenomena (inappropriate swearing and making of obscene gestures) and echophenomena (copying behaviours), while other associated, but less common