globin estimations; and glucose tolerance were all normal. There were no urinary porphyrins or porphobilinogen. Rectal biopsy showed no amyloid. Viral serology and antinuclear factor, Rose-Waaler, and VDRL slide tests gave negative results. The cerebrospinal fluid was sterile, with no leucocytes and a protein concentration of 0.3 g/l.

The findings were consistent with a peripheral sensorimotor neuropathy; the origin was obscure.

Five days after admission chlorambucil was stopped. One week later there was noticeable improvement, the patient being mobile with two crutches. After three weeks he was discharged. Two months later he needed only a walking-stick; all reflexes were present, except the ankle jerks, and there was substantial recovery of power in dorsiflexion and plantar flexion. Nerve conduction studies showed normal proximal nerve conduction in the median nerve (41 m/s). There was an increased terminal latency of 10 ms with temporal dispersion. Both the antidromic median and ulnar sensory volleys showed increased latency and diminished amplitude of response. The clinical diagnosis was thus confirmed.

Studies after 10 weeks showed a median nerve conduction velocity of 41 m/s, with a terminal latency of 6 ms—a significant improvement.

Comment

Peripheral sensorimotor neuropathy has rarely been recorded in chronic lymphatic leukaemia.^{1,2} A detailed study of the neurological manifestations of the reticulososes did not include a single case.³ The central nervous system manifestations of chlorambucil toxicity are likewise extremely uncommon and present as lethargy, drowsiness, and subsequent convulsions.^{4,5} Peripheral neuropathy has not been noted. The cause of this patient's neuropathy remains obscure, but chlorambucil cannot be excluded.

We thank Professor F G J Hayhoe for his kind permission to report this case.

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² Curnie, S, *et al*, *Brain*, 1970, **93**, 629.

³ Croft, P B, Urich, H and Wilkinson, M, *Brain*, 1967, **90**, 31.

⁴ Rajjevski, I G, and Davidova, G A, *Klinicheskaya Meditsina*, 1965, **43**, 124.

⁵ Green, A A, *et al*, *American Journal of Diseases in Childhood*, 1968, **116**, 190.

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Departments of Haematology and Neurology, Addenbrooke's Hospital, Cambridge

R M SANDLER, MB, MRCP, senior registrar in haematology and haematological medicine

M GONSALKORALE, MD, MRCP, registrar in neurology

Rectosacral distance and rectal size in ulcerative colitis

The space between the rectum and sacrum may be increased in colitis.^{1,2} We have examined the relation between rectosacral distance and rectal size in colitis and tried to correlate the results with the age at onset, length of history, and extent of the disease.

Methods and results

Measurements were made on true lateral films of the pelvis taken when the rectum was fully distended with air during double-contrast barium-enema examinations. The distance between the dorsal line of the barium and the ventral surface of the sacrum was measured at the midpoint of the fourth sacral vertebra. Rectal size was measured with a 10-mm grid as the area below a perpendicular line drawn to a tangent at the level of S2. No correction was made for magnification.

Measurements in 31 patients with ulcerative colitis (15 women and 16 men, each with a mean age of 44 years) were compared with those in 20 controls (10 women and 10 men; mean ages 51 and 46 years respectively) who underwent barium-enema examination for gastrointestinal symptoms but had a normal rectum on sigmoidoscopy. The significance of difference between

the two groups was assessed with Student's *t* test, and correlations were calculated by means of linear regression analysis.

The mean rectosacral distance was $12.5 \pm \text{SE } 1 \text{ mm}$ in the patients with colitis compared with $5.4 \pm 0.5 \text{ mm}$ in the controls ($P < 0.001$). Conversely, the rectal area in the patients with colitis was $43.6 \pm 2 \text{ cm}^2$, compared with $59.6 \pm 2 \text{ cm}^2$ in the controls ($P < 0.001$). The figure shows the inverse correlation ($r = 0.53$; $P < 0.01$) between the rectosacral distance and rectal size in the patients with colitis. There was a positive correlation between the duration of symptoms and the rectosacral distance ($r = 0.49$; $P < 0.01$).

Regression line showing inverse correlation between rectal area and rectosacral distance in 31 patients with colitis.

The earlier the age at onset of the colitis, the smaller the rectum tended to be ($r = 0.36$; $P < 0.01$). No significant correlation was found between rectal size and the length of history or between the extent of the colitis and rectal size or rectosacral distance. In the controls there was no correlation between age and rectal size or rectosacral distance.

Comment

Rudhe¹ found that the upper limit of the normal rectosacral distance in children was 7 mm at S4. Edling and Eklof² measured the shortest distance from the rectum to the sacrum between S3 and S5 in adults and found that the upper limit of normal was 10 mm. These authors ascribed the increased distance found in some patients with colitis to periproctitis, swollen soft tissue displacing the rectum forwards from the bone.

An alternative explanation for the increased distance in colitis is that the rectum loses its distensibility so that it no longer fills the sacral curve when distended. The inverse relation in colitis between the size of the rectum and the rectosacral distance supports this concept. Thus the rectosacral distance may be regarded as an indication of rectal distensibility and maximum size. Positive correlations between the rectosacral distance, the severity of mucosal inflammation,¹ and the duration of disease are thus to be expected.

The importance of reduced rectal distensibility is that it tends to be irreversible and may affect the sensitivity of the rectum to distension.³ Narrowing of the rectum may thus contribute to urgency of defecation, a disabling feature of colitis.

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Addenbrooke's Hospital, Cambridge

M J G FARTHING, MB, MRCP, medical registrar

The London Hospital Medical College and St Mark's Hospital, London

J E LENNARD-JONES, MD, FRCP, professor of gastroenterology