Hypotonia and Obesity Syndrome

Lack of muscle tone in the newborn infant is a common problem. Usually there is a history of foetal distress, followed by the delivery of an apnoeic hypotonic infant requiring resuscitation. During the ensuing weeks or months it becomes clear whether any permanent cerebral damage has occurred.

A difficult delivery, not necessarily a breech, with excessive traction on the neck may damage the spinal cord, usually in the lower cervical region, causing initially a flaccid paralysis of trunk and legs. Occasionally a widespread poliomyelitis may develop in utero as a result of a maternal infection during pregnancy; or there may be a transient myasthenic phase in an infant whose mother has myasthenia gravis. If a previous child was severely hypotonic at birth and died at an early age the possibility of the infantile form of degeneration of the anterior horn cells of the spinal cord (Werdnig–Hoffmann disease) should be considered. Less commonly the picture may merely mimic disease of the anterior horn cells, but there is a gradual improvement, though this is not always complete. This is the condition or group of conditions known as "benign infantile hypotonia"; a familial incidence is uncommon. Marked weakness of sucking, with a bilateral convergent squint, usually indicates a form of Möbius's syndrome, with agenesis of the motor nuclei of the sixth and seventh (and occasionally other) cranial nerves.

There remains a small group of infants with extreme hypotonia from birth, an almost complete lack of spontaneous movement, and an inability to suck. B. M. Laurance[1] has recently surveyed the literature, and has reported nine cases of his own, describing a condition which begins in this way but evolves in a curious manner. In the males the external genitalia are very small and the testes are small or impalpable. As these infants get older muscle power improves, but they remain hypotonic, and it soon becomes apparent that their delayed motor development is due partly to muscle weakness and partly to mental retardation. By the age of 4 to 5 years they are usually dwarfed and extremely fat, and from the age of 12 years onwards they tend to develop diabetes. This syndrome was first described from Zürich by A. Prader, A. Labhart, and H. Willi[2] in 1956. Other reports from Sweden,[3] England,[4] and Belgium[5] suggest that it is not uncommon.

In most of the families studied so far there has been no indication of a genetic basis, though J. C. Gabilan[6] found two affected children in one family. Nor has any significant environmental factor been discovered. Systematic investigation has not been of much help. It has been observed that the majority of the affected children have a similar facial appearance, with "almond-shaped eye sockets with slightly overhanging lids, a high cranial vault above the ears when seen in profile, prominent foreheads, retroussé noses, and slightly open fish-like mouths"[1]; the hands and feet are small and narrow. The possibility of a chromosomal abnormality has been considered, particularly as the angle between the palmar triradii is the same in some cases as that found in Down's syndrome (mongolism). H. G. Dunn and his colleagues[7] reported a minor chromosomal abnormality in one case, but the significance of this finding is uncertain, as neither Laurance[1] nor H. Forssman and B. Hagberg[3] found any such abnormalities in their cases. Electroencephalography has shown no constant abnormality, nor has electromyography. Muscle biopsies were done in two of Laurance's cases: in one the appearance was normal and in the other Dr. A. L. Woolf suggested there was a "dysplasia of the lower motor neurones" or an "actively progressive degeneration." Glycogen content and muscle enzymes have been shown to be normal in another case. In one patient a biopsy of the testis showed an appearance consistent with the age of the child, who was prepubertal.

Investigations of the function of the pituitary and adrenal cortex have given normal results in most cases, but in Forssman and Hagberg's case there was a reduced response to A.C.T.H. The diabetes which develops in these children appears to be less acute than is usually seen in children, and ketosis is often absent. These observations led P. R. Evans[4] to suggest that an insulin antagonist[8] might be present, interfering with the uptake of glucose by skeletal muscle but enhancing its uptake by adipose tissue.

It is not clear whether the small external genitalia and testes (and presumably ovaries) are an expression of primary or secondary hypogonadism. Puberty is delayed and incomplete, and in one of the Swiss cases[2] the excretion of gonadotrophin was abnormally high, suggesting a primary gonadal deficiency. If there is a persisting hypogonadal state, either primary or secondary, production of growth hormone may also be deficient, as a eunuchoid state does not develop. There is still much that is obscure in this interesting syndrome, and it remains to be seen whether there is a single basic abnormality or whether the syndrome comprises several different but similar conditions.

[1] Laurance, B. M., *Arch. Dis. Childh.*, 1967, **42**, 126.
[2] Prader, A., Labhart, A., and Willi, H., *Schweiz. med. Wschr.*, 1956, **86**, 1260.
[3] Forssman, H., and Hagberg, B., *Acta paediat. (Uppsala)*, 1964, **53**, 70.
[4] Evans, P. R., *Guy's Hosp. Rep.*, 1964, **113**, 207.
[5] Hooft, C., Delire, C., and Casneuf, J., *Acta paediat. belg.*, 1966, **20**, 27.
[6] Gabilan, J. C., *Journées pediat.*, 1962, **1**, 179.
[7] Dunn, H. G., Ford, D. K., Auersperg, H., and Miller, J. R., *Pediatrics*, 1961, **28**, 578.
[8] Vallance-Owen, J., and Lilley, M. D., *Lancet*, 1961, **1**, 804.

Guide to Hospitals

Following the example of Baedeker, many diligent guides have set out to help the newcomer find his way round with pleasure and enlightenment. Culture and sport, eating and sleeping—these and other human aspirations and frailties are the subject of many an instructive handbook. One of special interest to doctors seeking hospital junior appointments is *The Hospital Gazetteer*, published by the British Medical Association.[1] It contains a mass of information about the hospitals of Great Britain, Northern Ireland, and the Isle of Man. The traveller in this bewildering world is given pithy guidance on the sort of reception and accommodation he may expect. For example, one hospital has "Catering very high standard; good facilities for meals at night." Another offers accommodation "above the minimum laid down" but "off-duty time inadequate." Some further samples are: "28 rooms too small, 24 have no wash-basins." "Social club with old-time and modern dancing, drama section, archery, photography." "H.P.s' sitting-room is used as dining-room by resident medical staff and visiting consultants." "Rooms have no desks, easy chairs, nor running water." Thus with the help of this book the young doctor seeking decent accommodation in which to live, work, and study should be able to pick out a congenial billet and keep clear of "accommodation inadequate."

[1] *The Hospital Gazetteer*, 3rd ed., 1967. British Medical Association, London. 25s. net (by post 26s. 6d.).