my motivations and aspirations in my work. I wish to stay in my present practice but am now more realistic about what can be done by general practitioners in inner cities. Just being there as a friend, confidant, and fellow victim is important. The moment my present apprehension turns to fear I will know that it is time to go. Pheromones form a potent communication mechanism in inner city areas.

If assaulted again I shall be reluctant to fight back. I now know that I can't defend myself very effectively anyway. The risks of severe personal injury are great if knives or other weapons are wielded. The ego trip of foiling a robbery or the deterrent effect of failure on those trying to commit a crime is not worth the risk. It is too easy to apportion all the blame for crime statistics on to social, financial, and environmental factors. A glance at any newspaper underlines the fact that man is a violent and primitive animal and is likely to remain that way. Misfits, as arbitrarily defined by the society of the time, will always tend to congregate together and the stronger will always prey on the weak.

Inner city general practice is the most exciting and depressing,

stimulating and humbling, rewarding and heartrending experience that I know. The *News of the World* encapsulated this experience with its slogan "All Human Life is Here" and who picks up the *Guardian*, the *Telegraph*, or *The Times* when the *News of the World* is lying around?

I acknowledge the encouragement and advice of my former trainer Dr Cyril Josephs in preparing this article; I thank also Jackie Hammett and Jane Davis for typing the article.

References

- 1 Shaw CR, McKay HD. *Juvenile delinquency and urban areas*. Chicago: University of Chicago Press, 1942.
- 2 Schmid CF. Urban crime areas. *Am Sociol Review* 1960;25:527054, 655-78.
- 3 Wallis CP, Maliphant R. Delinquent areas in the county of London. *Br J Criminology* 1967;7:250-84.
- 4 Rex J, Moore R. *Race, community, and conflict: a study of Sparkbrook*. Oxford University Press Institute of Race Relations, London: OUP, 1967.
- 5 Baldwin J, Bottoms AE. *The urban criminal*. London: Tavistock, 1976.
- 6 Repetto TA. *Residential crime*. Cambridge, Massachusetts: Ballinger, 1974.

(Accepted 2 October 1984)

Clinical Algorithms

Suspected Cushing's syndrome

KENNETH C MCHARDY

Many clinical features have been described in Cushing's syndrome but most of these have no useful discriminatory value in selecting from a group of suspected cases those who are ultimately shown to have sustained high cortisol concentrations.¹ As a result Cushing's syndrome is often suspected but, being an uncommon condition, seldom confirmed. When it is, around two thirds of patients will have pituitary dependent Cushing's syndrome, usually referred to as Cushing's disease. Of the remainder, half will have an adrenal neoplasm and half ectopic production of adrenocorticotrophic hormone (ACTH) from a tumour elsewhere. A relatively high proportion of cases of adrenal Cushing's syndrome, often malignant, occur in children, while most cases of Cushing's disease occur in women of childbearing age.

Once the general practitioner has suspected Cushing's syndrome he can do little more than estimate urinary free cortisol without referral to hospital. Unlike plasma cortisol, the urinary free cortisol concentration is not raised in patients on oral contraceptives and a normal result effectively excludes a diagnosis of Cushing's syndrome. The algorithm attempts to provide a simplistic approach to the suspected case ignoring the exceptional or paradoxical case reports with which the subject is fraught. The complexities of different normal ranges (and units), idiosyncrasies in test methods, preferences and local variation in investigative and therapeutic facilities have necessarily been omitted; readers are referred to relevant texts for detailed information.

Advances in assessing disordered cortisol metabolism were described in 1978,² and two comprehensive reviews on Cushing's syndrome³ and its laboratory investigation⁴ were published the

following year. Problems in diagnosis remain.^{5,6} Serum sampling has now replaced the more cumbersome urine collections in dexamethasone suppression tests.⁷ Gas chromatography of urine⁸ and urinary free corticoids after suppression with dexamethasone⁹ are recent innovations which might earn inclusion in routine investigation in due course. Selective venous sampling of ACTH at different sites¹⁰ and measurement of ratios of ACTH to related peptides such as β lipotrophin¹¹ may facilitate distinction between pituitary Cushing's syndrome and ectopic ACTH production in particularly difficult cases.

Treatment policies for adrenal and ectopic Cushing's syndrome are reasonably straightforward, and external pituitary irradiation is the preferred treatment for children and adolescents with Cushing's disease. The treatment of this condition in adults remains controversial with current opinion generally favouring transsphenoidal pituitary microsurgery, but the case for bilateral adrenalectomy has recently been restated.¹²

References

- 1 Ross EJ, Lynch DC. Cushing's syndrome—killing disease: discriminatory value of signs and symptoms aiding early diagnosis. *Lancet* 1982;ii:646-9.
- 2 Burke CW. Disorders of cortisol production. In: O'Riordan JH, ed. *Recent advances in endocrinology and metabolism*. Vol 1. Edinburgh: Churchill Livingstone, 1978.
- 3 Gold EM. The Cushing syndromes: changing views of diagnosis and treatment. *Ann Int Med* 1979;90:829-44.
- 4 Crapo L. Cushing's syndrome: a review of diagnostic tests. *Metabolism* 1979;28:955-77.
- 5 Anonymous. Cushing's disease: clinical features and diagnostic problems [Editorial]. *Lancet* 1981;i:1034-5.
- 6 Aron DC, Tyrrell JB, Fitzgerald PA, et al. Cushing's syndrome: problems in diagnosis. *Medicine* 1981;60:25-35.
- 7 Ashcraft MW, Van Herle AS, Vener SL, Geffner DL. Serum cortisol levels in Cushing's syndrome after low- and high-dose dexamethasone suppression. *Ann Int Med* 1982;97:21-6.
- 8 Phillipou G. Investigation of urinary steroid profiles as a diagnostic method in Cushing's syndrome. *Clin Endocrinol* 1982;16:433-9.
- 9 Trecan GV, Laudat MH, Thomopoulos P, et al. Urinary free corticoids: an evaluation of their usefulness in the diagnosis of Cushing's syndrome. *Acta Endocrinol* 1983;103:110-5.
- 10 Drury PL, Ratter S, Tomlin S, et al. Experience with selective venous sampling in diagnosis of ACTH-dependent Cushing's syndrome. *Br Med J* 1982;284:9-12.
- 11 Gilkes JH, Rees LH, Besser GM. Plasma immunoreactive corticotrophin and lipotrophin in Cushing's syndrome and Addison's disease. *Br Med J* 1977;i:996-8.
- 12 Kelly WF, MacFarlane IA, Longson E, et al. Cushing's disease treated by total adrenalectomy: long-term observations of 43 patients. *Q J Med* 1983;206: 224-31.

Aberdeen Royal Infirmary, Foresterhill, Aberdeen AB9 2ZZ

KENNETH C MCHARDY, MRCP, registrar

Suspected Cushing's syndrome