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Pituitary Incidentaloma

Commentary on 'Prevalence of growth hormone and other anterior pituitary hormone deficiencies in adults with non-secreting pituitary microadenomas and normal serum insulin-like growth factor-1 levels' by Yuen, K.C.J *et al*. (doi: http://www.blackwell-synergy.com/doi/abs/10.1111/j.1365-2265.2008.03201.x)

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Wikipedia states: *"Autopsy series have suggested that pituitary incidentalomas may be quite common. It has been estimated that perhaps 10% of the adult population may harbor such endocrinologically inert lesions. When encountering such a lesion, long term surveillance has been recommended. Also baseline pituitary hormonal function needs to be checked, including measurements of serum levels of TSH, prolactin, IGF-I (as a test of growth hormone activity), adrenal function (i.e. 24 hours urine corticol, dexamethasone suppression test). testosterone in men and oestradiol in amenorrheic women."*

The advent of CT and MRI imaging had a dramatic effect on the investigation of endocrine conditions. Those of us senior enough to remember the trauma, pain and suffering caused by techniques such as air encephalogram, pneumoperitoneum and pre-sacral air insufflation (for imaging pituitary, ovarian and adrenal pathology), consider modern technology close to miraculous! Not only are they minimally invasive but their precision has improved so that they can now discover the proverbial 'needle in a haystack'. Although access to such imaging is still quite limited in the UK the number and quality of the scanners increase year by year. Elsewhere, particularly in the USA, high resolution scanning is more readily available resulting inevitably in more incidentalomas being diagnosed. Of course this raises the question of what if anything should one do with them?

In this issue of the journal Yuen and his colleagues report a series of 38 patients with pituitary tumours found during investigation of potential endocrine problems where endocrine function (including a screening IGF-I level) was normal and thus appear to fit the definition of an 'incidentaloma'. The fact that the mean BMI for the group was 33.4 (16 of 38 being over 35 with a maximum of over 51) suggests that a number were being investigated for a 'hormonal cause' for their obesity. Using the GHRH/Arginine provocative test the investigators found however, that 50% of them were frankly growth hormone (GH) deficient. The peak GH response

in the other 50% was significantly lower than well-matched controls. There was an inverse relationship between BMI and GH response and despite their best efforts there still remains difficulty in determining ‘cart’ from ‘horse’.

The message is loud and clear; these apparently insignificant tumours must not be ignored and patients with them should undergo provocative pituitary function testing. When GH deficiency is uncovered should it be treated? To answer properly this question we need to establish some randomised controlled trials of GH replacement. Then perhaps we can place properly the horse before the cart?