Diabetes insipidus and panhypopituitarism after pituitary infarction in a case of acromegaly

Although panhypopituitarism is not an uncommon sequel of acromegaly the development of diabetes insipidus is rare. Postpartum haemorrhage is probably the commonest cause of pituitary infarction and occasionally it is suicide containing 10^6 pfu/ml of virus. The emulsions were tested as before. Identical volumes of emulsion were used as controls. After the reaction the test and control samples were dialysed against distilled water, to remove copper ions, and then inoculated on to monolayers of Vero cells. Surviving virus was detected by plaque formation. Virus was recovered from all the controls and from three of seven of the faecal suspensions to which "Chininst" tablets had been added.

The heat produced during the test was recorded using a recording thermo-couple. The temperature before the addition of a Chininst tablet was 25°C. The maximum temperature of 80°C was reached after 22 seconds. Immediately the temperature began to fall and had reached 60°C after a further 1 min 18 s. It had reached 40°C 4 min 30 s later.

Discussion

Nearly all copper compounds are strongly bacteriostatic and to some extent bactericidal but have weak virucidal properties. There is evidence that for certain organisms the antimicrobial action of copper compounds is increased by heating. It may be assumed unwise that the exothermic chemical reactions produced during solution of a Chininst tablet destroy the microbial population of urine or faeces. Nevertheless, the effervescence resulting from the reaction produces large bubbles, which are lifted away from the hottest part of the tube. Organisms trapped in the bubble film will not be subjected to the same conditions as those at the bottom of the tube. Collapse of these bubbles will also generate aerosols, which may also contribute to the contamination of the environment in addition to more obvious contamination due to overflowing.

We suspect that insufficient thought has been given to the microbial hazards of the test and of the subsequent disposal of the reactants and tubes. We strongly urge our colleagues that this test, although of undoubted diagnostic value, is not devoid of microbial hazards and encourage them to take the necessary steps to minimise the risk of infection.


(Accepted 6 April 1977)

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A 34-year-old man presented with a five-year history of increasing hand and foot size, weight gain, and excessive sweating. Three months before admission he developed a severe headache of sudden onset, photophobia, and neck stiffness which lasted for three days. During the subsequent months he lost weight and developed difficult to control diabetes insipidus. He also complained of mild polyuria and polydipsia.

Examination revealed signs of acromegaly and hypothyroidism. Previous photographs showed a progressive increase in size of his jaw and hands. Visual fields were unimpaired and his blood pressure was 110/70 mm Hg. Radiographs showed an enlarged pituitary fossa with erosion of the base of the sella. There was tufing of the terminal phalanges, and heel-pad thickness was increased to 30 mm. Endocrine investigations confirmed hypothyroidism (serum thyroxine 41 nmol/l (3.2 µg/100 ml), T3 uptake test 113%), and also showed hypergonadotropinemia (total serum androgens 4.2 nmol/l (1.2 ng/ml), and hypoadrenalism (morning serum cortisol <0.3-30 nmol/l (1-11 µg/100 ml)). Pituitary stimulation by insulin-induced hypoglycaemia, TRH, and LHRH showed an enlarged pituitary fossa, with a failure of the normal rise in plasma arginine vasopressin.

Results of anterior and posterior pituitary stimulation tests

![Table](https://example.com/table.png)

1. *100 µg LHRH, 200 µg TRH, and 13 U soluble insulin given at time 0.
2. Plasma arginine vasopressin measured by radioimmunoassay.

Comment

Clinically there was no doubt that this patient had developed acromegaly associated with an enlarged pituitary fossa. Endocrine investigations, however, indicated both anterior and posterior pituitary impairment. From the history, the hypopituitarism and diabetes insipidus seem probably to be the consequence of a pituitary infarction three months before presentation. With cortisol and thyroxine replacement therapy the symptoms of diabetes insipidus became more pronounced and necessitated DDAVP treatment.

Diabetes insipidus is an unusual consequence of pituitary infarction. Sheehan's syndrome accounts for most pituitary infarctions, but according to a recent report only a few patients develop diabetes insipidus after postpartum haemorrhage. The rarity of the clinical disorder contrasts with the finding of minor degrees of posterior pituitary and hypothalamic scarring in 90% of patients suffering from Sheehan's syndrome. Diabetes insipidus has been reported after spontaneous infarction of a pituitary tumour and in a patient with the "empty sella syndrome." But neither had evidence of acromegaly. The combination of anterior and posterior pituitary impairment is an uncommon consequence of pituitary infarction and our patient seems to be most unusual in that these deficiencies have followed acromegaly.