



## An unusual case of hypopituitarism

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A 14-year-old boy presented to the trauma unit at our tertiary hospital after sustaining a gunshot wound to the left eye. Clinical examination showed that he was alert and haemodynamically stable, but blind in the left eye, with no CSF rhinorrhoea. His pubertal status (Tanner stage S3) and height (1.7 m, 75th percentile) were appropriate for his chronological age. Skull radiography and a CT scan of the brain (figure) both showed that the projectile was lodged in the sella turcica. Digital subtraction angiography excluded injury of the major cerebral vessels.

Because of the location of the bullet screening of pituitary function was done, and showed 8 am serum cortisol concentrations of 28 nmol/L (normal range 171–536 nmol/L), thyroid-stimulating hormone 0.63 mIU/L (normal range 0.27–4.20 mIU/L), free thyroxine 13.5 pmol/L (normal range 13.6–23.2 pmol/L), luteinising hormone 0.7 IU/L (normal range 1.3–9.8 IU/L), insulin-like growth factor 1 19.4 nmol/L (normal range 28.8–127.3 nmol/L), and prolactin 13.04 pmol/L (normal range 174–660.9 pmol/L). Testosterone was undetectable (concentration <0.1 nmol/L; normal range 1–38.5 nmol/L). These results confirmed a diagnosis of complete anterior hypopituitarism. The

patient received hydrocortisone, thyroxine, and testosterone replacement. Because of the high cost, and because he had achieved the 20th percentile for his expected adult height, we did not supplement growth hormone. 19 days after initial presentation, the patient had polyuria and hypernatraemia. He was diagnosed with diabetes insipidus, complicated by diminished thirst that was probably secondary to ballistic trauma to the hypothalamus. He responded well to treatment with desmopressin. The projectile was left in situ and removal will be contemplated if sepsis occurs.

We have shown for the first time a CT image of a projectile, lodged in the pituitary fossa, that induced panhypopituitarism. The development of diminished thirst in this patient makes this case interesting and unique.

### Contributors

BG was the main author and did the literature search. JS, PS, and IR reviewed and revised the Case Report. PS gave expert opinion on neurosurgery, and IR gave expert opinion on endocrinology. All authors were directly involved in care of the patient; IR was the physician principally responsible for care of the patient. Written consent to publish was obtained.

### Conflicts of interest

We declare that we have no conflicts of interest.

Published Online

October 28, 2013

[http://dx.doi.org/10.1016/S2213-8587\(13\)70047-0](http://dx.doi.org/10.1016/S2213-8587(13)70047-0)

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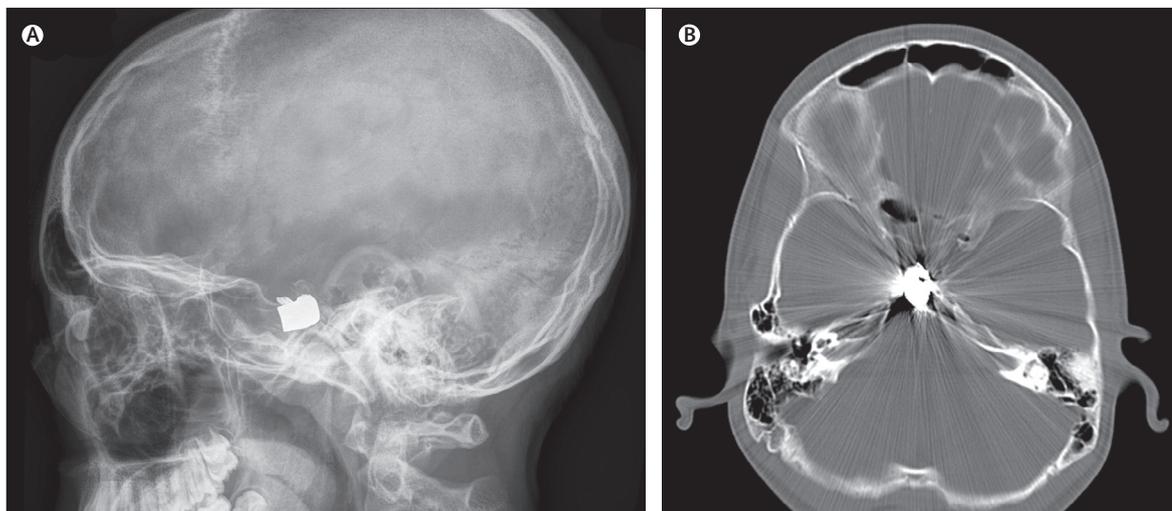


Figure: Plain radiograph showing a 9 mm bullet partly located in the sphenoid sinus (A), and CT scan showing a fracture of the clivus with the bullet partially located in the pituitary fossa, and associated artifact (B)