A 12 year old boy sustained a severe head injury by a passing car whilst crossing the road
- Massive basal skull fracture
- Acute onset diabetes insipidus
- Extradural and subdural bleeding requiring surgical decompression.

Pre-operative physical examination:
- Healthy boy
- Height 60th centile for age, Tanner stage III puberty, 10 ml testes bilaterally.
- MR head: apparent pituitary stalk transection right optic nerve transection, confirmed during surgical exploration.

Over next 12 months from age 12-14 years
- Linear growth failure and pubertal arrest
  - Glucagon stimulation test: Max GH
  - GH deficiency: rGH commenced
- Bone age was advanced (14 years at 12), consistent with pubertal status at admission,
  - Testosterone replacement was delayed to age 14:
  - Testosterone undecanoate 40-120mg/day
  - Then testosterone esters IMI
- Final height 165cm
- GH ceased at end of linear growth

Subsequent progress
- Over next 7 years, to age 21: treated with thyroxine, hydrocortisone, testosterone, vasopressin.
  - At 21 he stopped taking thyroxine. Thyroid hormone levels remained normal (FT4 pmol/l, TSH mu/l)
  - Attempted reduction in hydrocortisone → severe tiredness (cortisol <50nmol/l at 8am)
  - Testosterone supplementation ceased at age 23 Testosterone remained normal at 22 nmol/l (10-24)
  - Hydrocortisone gradually withdrawn between ages 23-25, cortisols remain 200-252 nmol/l

At age 25
- Due to excessive lethargy, formal GH testing with ITT max GH 5mu/l
cortisols 200-250nmol/l
but no stress response to hypoglycaemia

Rx GH 2.5 mg/m2/week, with restoration of good health. Diabetes insipidus is persistent and advice given for steroid cover for stress.

Conclusion
- Late recovery of hypothalamic pituitary axes is possible after pituitary stalk transection