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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **No.** | **Gender/Age（yr）** | **Onset symptoms** | **Disease duration(m)** | **Neurological findings (pre-op)** | **Treatment and Approach** | **Extent of resection** | **Pathology** | **GNAS mutation** | **Gsα expression** | **Endocrine deficits (pre-op)** | **Endocrine deficits ( post-op)** | **Complications** | **Follow-up time (m)** | **Outcome** |
| **Case.1** | M/46 | Dizziness,anorexia, polydipsia/polyuria, visual deterioration | 24 | Visual acuity: L 0.12, R 0.4; bitemporal hemianopsia | Transsylvian | STR | ACP | Negative | Positive | Hypogonadism | Panhypopituitarism | Transient hypernatremia; central fever | 98 | Residual without progression; hormone replacement therapy |
| **Case.2** | M/36 | Headache, poor energy, hypogonadism | 12 | NSPS | Transcallosal | GTR | ACP | Negative | Positive | Hypothyroidism;hyperprolactin | Hypothyroidism | Transient DI | 97 | No recurrence |
| **Case.3** | F/29 | Headache | 1 | NSPS | Transsphenoidal | STR | CP | Negative | Positive | Hyperprolactin;hyperthyroidism | Transient hypothyroidism | Meningitis; visual loss | 57 | No recurrence |
| **Case.4** | M/55 | Dizziness, fatigue, polydipsia/polyuria | 3 | cognitive/memory decline; weakness of lower limb | (1) V-P shunt (2)Transsylvian | GTR | ACP | Undone | Undone | Hypothyroidism | Panhypopituitarism | DI ; thrombus of lower extremity veins | 6 | Died of pulmonary embolism |
| **Case.5** | M/29 | Incidental | 1 | NSPS | Watchful | Undone | Undone | Undone | Undone | Nomal | Nomal | Undone | 28 | No progress |

**Table 1. Radiological characteristics of all included five patients in our study**

**Abbreviation:** CP, Craniopharyngiomas; FD, fibrous dysplasia; INRE, inhomogeneous nodular and ring enhancement; ISO, isointensity; IRE, inhomogeneous ring enhancement; Hypo, hypointense; NE, No enhancement; T1WI, T1-weighted imaging; T2WI, T2-weighted imaging; CE-T1WI, contrast-enhanced T1-weighted imaging.