Rare case of round blue cell pituitary tumour with probable hypothalamic involvement

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Introduction

We submit a rare presentation of round blue cell pituitary tumour complicated by cranial diabetes insipidus following transphenoidal surgery.

Case history

• 47 year old lady
• Severe headache
• 10mm non-functioning pituitary macro adenoma.
• Initial plan for conservative management - revised as she developed sixth cranial nerve palsy, bilateral hemianopia and rapidly enlarging pituitary tumour to 20x18x19mm.
• Urgent transphenoidal pituitary surgery
• Repeat surgery in 2 weeks as deteriorated.
• Pituitary tumour was found to be of fibrous consistency
• Histology confirmed poorly differentiated round blue cell tumour with mitotic index 50%, positive for CD99 and CD56, cytogenetically unclassified.
• INI-1 negative.
• Genetic studies awaited.

Management and Discussion

• On 1st post-op day, she developed polyuria and polydipsia, diagnosed with cranial DI and commenced on DDAVP.
• Next day she had a generalised seizure caused by rapidly developing hyponatraemia, managed with strict fluid balance and a fluid restriction of 1.5L daily with dynamic management DDAVP dose.
• Developed excessive thirst despite normal serum sodium and urine osmolality raising the possibility of hypothalamic thirst centre being affected by the aggressive pituitary tumour.
• Chemotherapy started.
• Patient had some improvement in her vision after 2 cycles of chemotherapy with overall prognosis very poor.
• Passed away after 4 weeks.

Conclusion

We presented this case to illustrate a rare, aggressive pituitary malignancy which possibly has invaded the hypothalamus causing disruption to thirst mechanism in addition to causing CDI.

Histology images

Haematoxylin and eosin, original magnification x 40. Cells with scanty cytoplasm and large vesicular nuclei with prominent nucleoli.

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