Combined Approach to Skull Base Tumours

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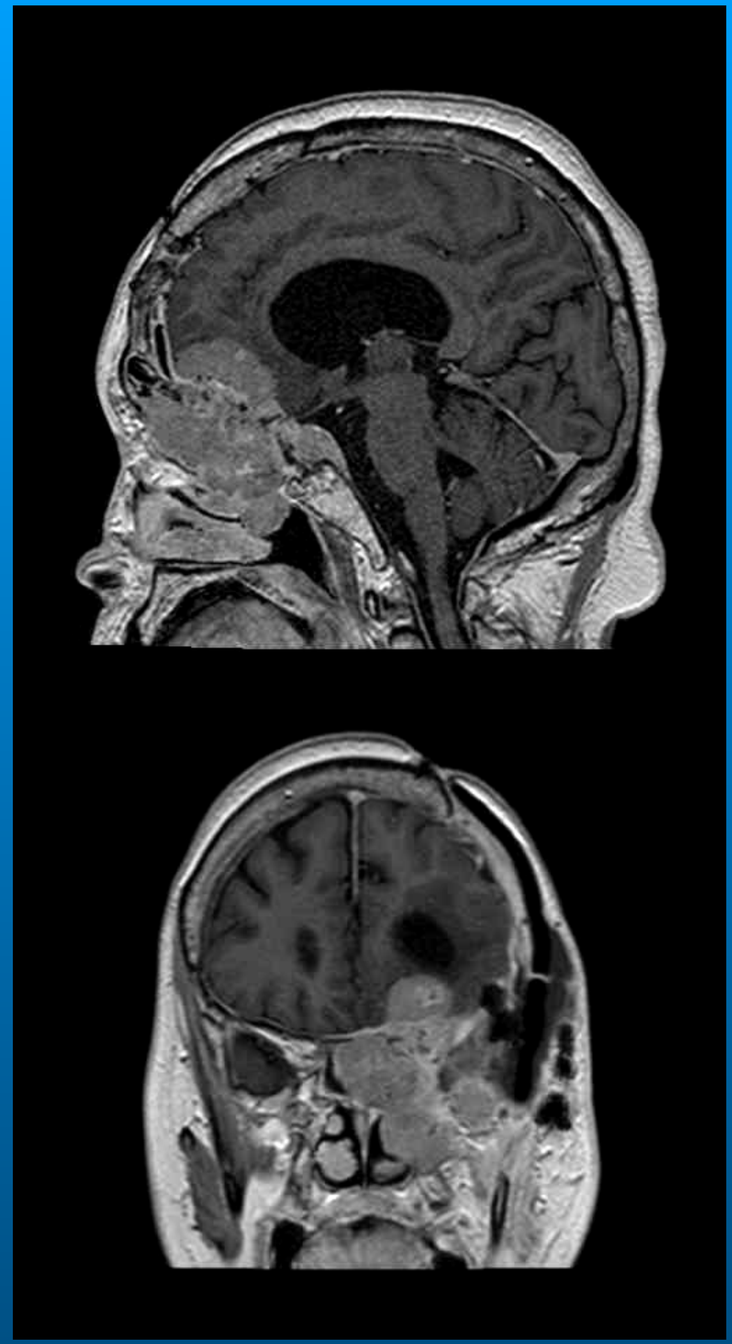
Introduction

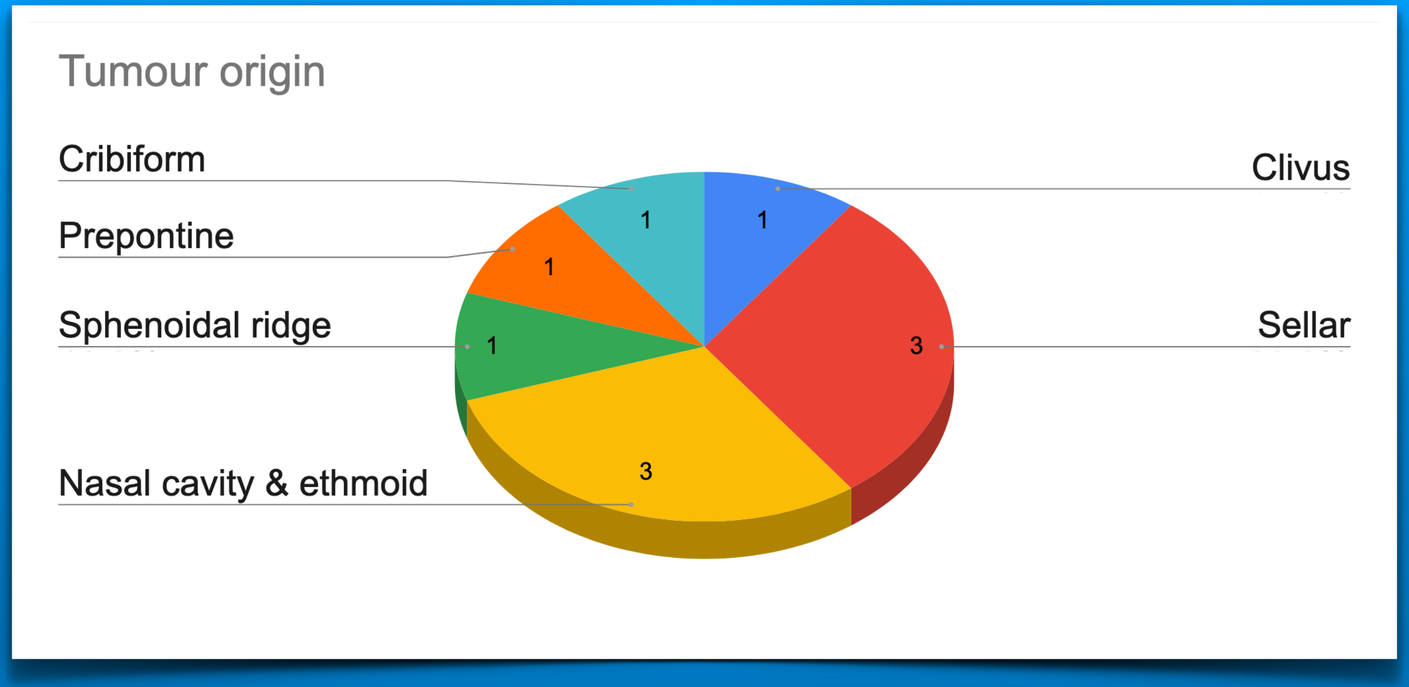
- Skull base tumours have historically been considered to have poor prognosis, with varying presentation, difficult and incomplete resection, resultant neurological deficits, recurrence, and high mortality.
- With combined extended approach to skull base tumours, optimal access can be achieved for tumour resection.

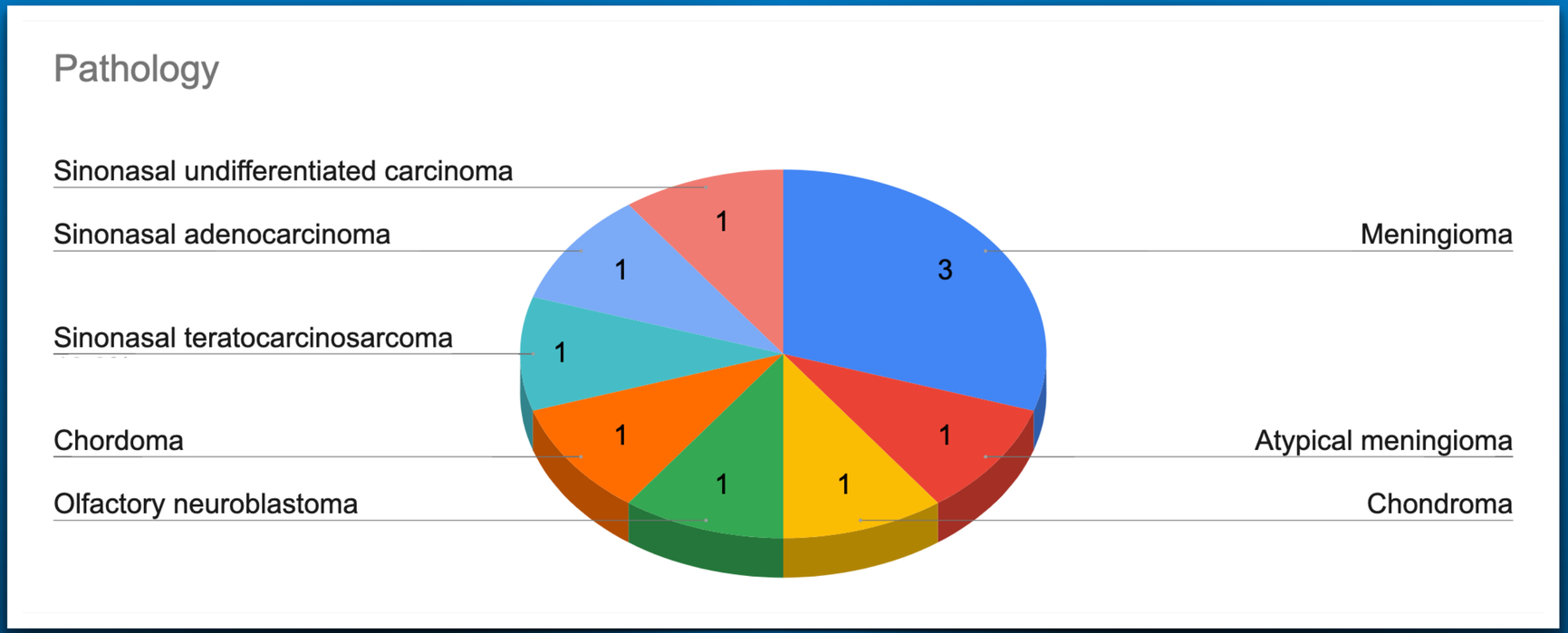
Method

- Single centre retrospective review of combined neurosurgical-otorhinolaryngological approach to skull base tumours from 2017 to 2020, including extent of resection, surgical approach, method of reconstruction, complications, recurrence, and subsequent management



Demographics	
Number of patients	10
Male: Female	1:1
Mean age at OT	53.7 (20-75)
Median tumour size	3.3 (2.0-7.2) cm
Benign vs Malignant	1:1
Prior Radiotherapy	1



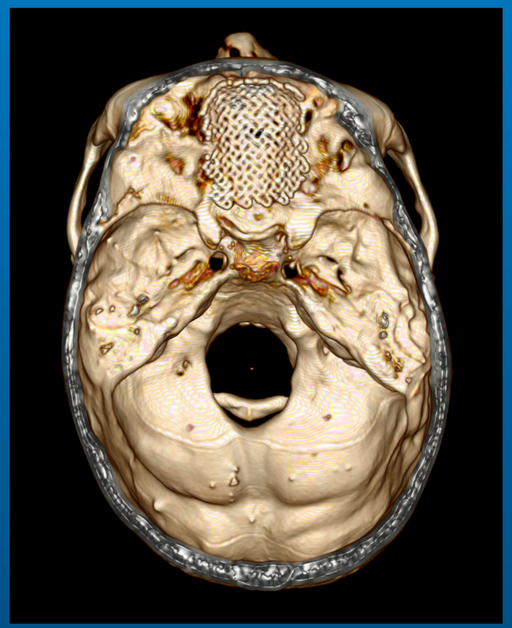


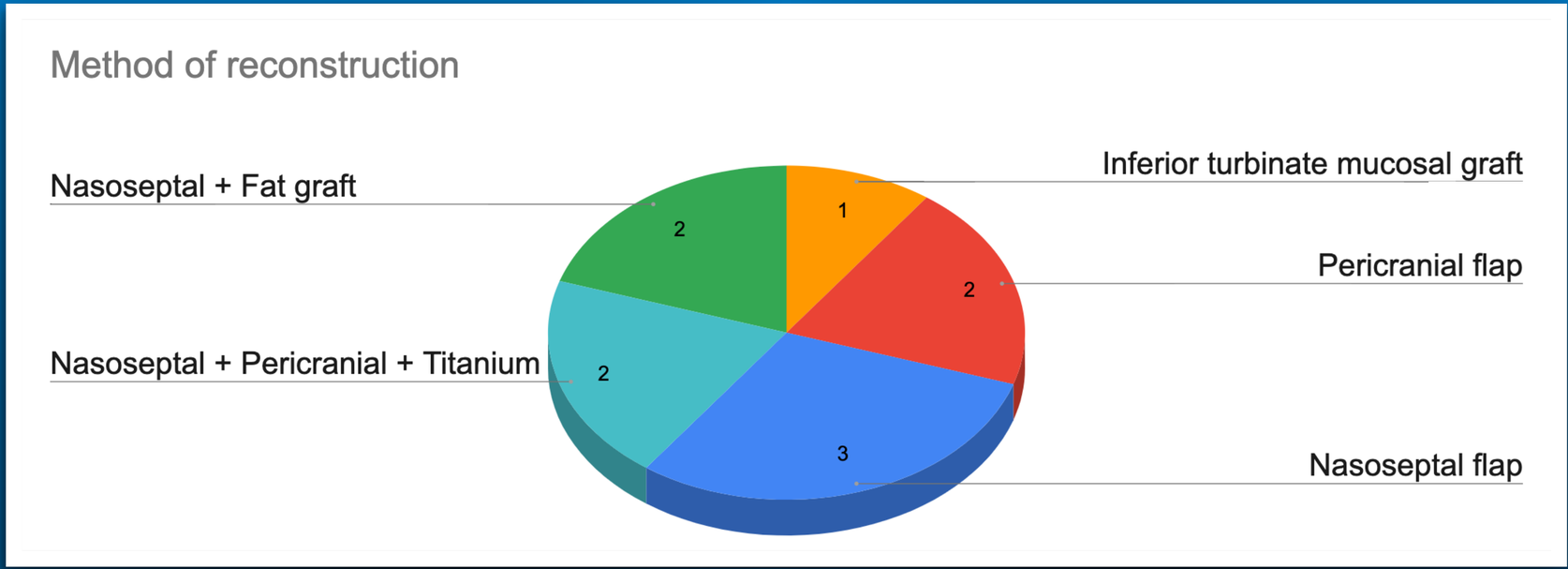
Approach and Reconstruction

Bicoronal + endoscopic endonasal (4 cases)	
Pericranial flap	2
Pericranial + Nasoseptal flap + Titanium	2
Perioperative lumbar drain	1
Malignant	All
Gross total excision	All

VS

Endoscopic endonasal (6 cases)	
Nasoseptal flap	3
Nasoseptal flap + Fat graft	2
Inferior turbinate mucosal flap	1
Benign vs Malignant	4:1
Gross total vs Partial excision	3:3





Complications

Immediate complications	1 (CVA)
Early complications	1 (CSF leak)
Late complications	0
Flap complications	0

CSF leak can be as high as 15% despite use of a pedicled flap and perioperative lumbar drain.

Fathalla, Hussein, et al. Neurosurgical review (2017)

- CSF leak from ***viable flap*** edge occurred in 1 patient at day 7 post-op for sinonasal undifferentiated carcinoma (SNUC) with pericranial flap.
  Symptoms ***resolved*** with lumbar drain insertion. Drain removed on day 17 after nasoendoscopy confirmed ***no CSF leak***. Recovery was otherwise ***uneventful***.
  - ***10% CSF leak*** compares favourably to ***Kassam*** et al.
- 1 patient developed small infarct post-op after endoscopic endonasal resection of tuberculum sella meningioma. Recovery was uneventful.

Outcome	
Mean follow up	26.7 (1.5 - 45.25) months
Median survival	32 (6.5 - 46) months
Overall Survival : Death	8 : 2
Gross total excision	7 (70%)
Recurrence	2 (29%)
Survival in recurrence	1 (50%)
Survival in partial excision	2 (66%)
Overall disease free	5 (50%)
Recurrence interval	6.8 - 22.5 months
Median disease free survival	18.9 (6.5 - 45.5) months
Median symptom free survival	25.5 (6.5 - 46) months
ECOG 1 at last follow up	6 (75%)

Recurrence and Mortality

Pathology	SNUC	Atypical meningioma	Olfactory neuroblastoma
Adjuvant	RT	Declined all further treatment	RT
Recurrence (months)	6.8	Residual tumour	22.5
Location	Local	Local	Drop metastasis
Outcome	Death	Death	ECOG 3
Survival duration (months)	13	26	41.5

Conclusion

- Skull base tumours managed with combined approach can yield good gross excision with a low complication rate and an excellent outcome in disease free survival and functional status.