A 3-year single centre experience of skull base surgery

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Background

- Acoustic neuromas are the most common intra-cranial tumour and represent 90% of cerebellar-pontine angle tumours[1].
- Operative complications are variable but in the region of 20% when transient complications are excluded[2,3].
- Reported length of stay is 4.9 days varying with tumour size and the presence of complications.
- In our institution the translabyrinthine and retrosigmoid approaches are performed with the latter favored for large tumours.

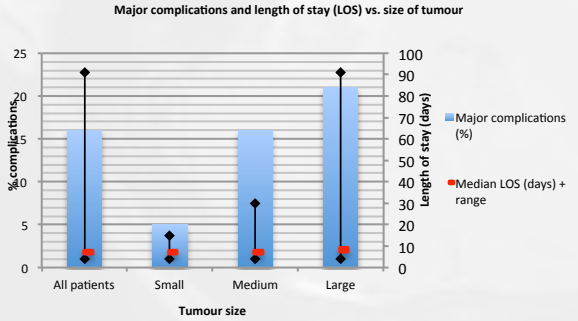
Aims

1. To audit the practice of skull base surgery and determine our patient population
2. To quantify the complications associated with our practice including length of stay.

Methods

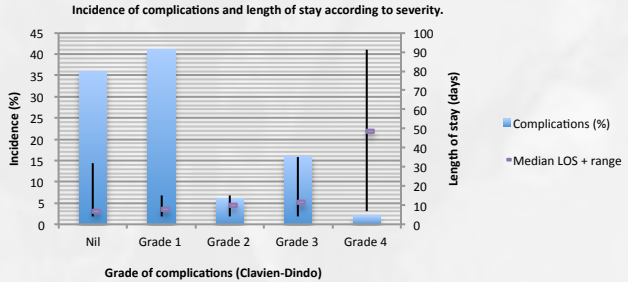
- Retrospective case-note review of all patients undergoing acoustic skull base surgery form January 2010 to July 2013.
- Data collected including demographics, surgical approach, intra/post-operative complications and length of stay.
- Complications classified according to Clavien-Dindo grading system. Major complications considered to be Grade 3 and 4.
- 103 patients identified as having undergone skull base surgery during the audit period, 100 sets of case notes were obtained and reviewed.

Size of tumour	All patients n=100	Small (<1.5cm) n=21	Medium(1.6-2.5cm) n=31	Large (>2.5cm) n=48
Patient demographics: Age(mean, SD) years Gender M:F	49.6±12.4 51:49	48±9.5 10:11	52±10.1 17:14	49.1±14.5 24:24
Co-morbidities:				
- CVS	30	33	23	33
- Resp	12	5	10	17
- Neuro	13	10	3	8
- Endo	6	10	3	20
- Other	23	29	23	21



Results

- 64% of patient had some form of complication (mostly transient).
- 18% had a major complication (Grade 3/4).
- Complications appeared to be associated with tumour size and retrosigmoid approach and this correlates with an increased length of stay.
- The majority of surgical procedures were for large tumours (>2.5cm).



Surgical Approach	Translabyrinthine. N=50	Retrosigmoid. N=50
Length of stay (days). median (range)	7(4-30)	9(4-91)
Incidence of major complications (%).	12%	20%

Grade of complication	Incidence %)
Grade 1: Any deviation from post-op course, no intervention.	
Neurological:	
• Audiofacial CN palsy	38
• Impaired balance	7
• Bulbar palsy	4
Non-neurological	
• Persistent headache	3
• Persistent nausea	3
• Wound haematoma/dehiscence	4
Grade 2: Any deviation from post-op course requiring pharmacological intervention.	
Neurological	
• Audiofacial CN palsy:	4
• Seizures	1
Non-neurological	
• Pneumonia	3
• Atrial fibrillation	1
Grade 3: Requiring surgical, endoscopic or radiological treatment	
Neurological	
• Audiofacial CN palsies	4
• Hydrocephalus	1
Non-neurological	
• CSF Leak	8
• Abdominal wound haematoma	1
Grade 4: Life threatening complication requiring neurocritical care management	
Neurological	
• Cerebellar swelling	1
• Seizure	1
• Pneumocephalus	1

Conclusions

- Although our sample size is small, our incidence of complications is comparable with published data [2,3].
- Complications were more common in patients undergoing surgery for large tumours and retrosigmoid surgical approach in keeping with published data [3].
- Length of hospital stay appeared to be associated tumour size, surgical approach and the presence/grade of complications.

References:

1. Giordano A. et al. Acta Otorrinolaringologica Espanola, 2012; 63(3):194-9
2. Sanna et al. Otol Neurotol, 2004;25:379-386
3. Sughrue et al. J Neurosurg, 2011;114:367-374