SLT role in Awake Craniotomy
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Does my bum look big in scrubs!?
What we did

- SLT / Neuropsychology project (2013) – Explored the role of SLT and Neuropsychology in patients with Low Grade Gliomas
- Explored/Developed Awake Craniotomy Pathway
- Supported 3/4 pre-intra-post operatively
- Networking / UK Forum (protocol used is in line with other major sites involved in awake craniotomy)
Why we did it

- Awake Craniotomy: Technique of choice for certain Neurosurgical procedures, including excision of lesions from eloquent cortical areas and procedures for epilepsy and movement disorders
- Safe, well tolerated procedure, careful patient selection is the key to success
- Define SLT Role within pathway:
  - Pre/Post op assessment (identifying appropriate patients for the procedure i.e. difficult using those with cognitive changes)
  - Intra op cortical mapping/continuous monitoring
  - Better patient outcomes as more accurate assessment during resection (historically only automatic speech used)
  - Additional support for patient/relatives
  - Signpost rehab/ongoing support mechanisms
How we did it

Cortical Regions

<table>
<thead>
<tr>
<th>Frontal Regions</th>
<th>Function(s)</th>
<th>Intra-operative tasks from DuLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inferior frontal gyrus</td>
<td>Articulatory processing /syntax (writing)</td>
<td>Verbal DDK, repetition, verb generation, action naming</td>
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<tr>
<td>Posterior midfrontal gyrus</td>
<td>Action naming/writing</td>
<td>Action Naming</td>
</tr>
<tr>
<td>Supplementary motor area (posterior superior frontal gyrus)</td>
<td>Language Initiation</td>
<td>Sentence completion (closed and broad context), fluency</td>
</tr>
<tr>
<td>Precentral gyrus</td>
<td>Motor network</td>
<td>Repetition, Verbal DDK</td>
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</tbody>
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Subcortical Pathways

<table>
<thead>
<tr>
<th>Subcortical pathways</th>
<th>Function(s)</th>
<th>Intraoperative language tasks from DuLIP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subcallosal fascicle</td>
<td>Initiation of speech</td>
<td>Fluency, sentence completion</td>
</tr>
<tr>
<td>Superior longitudinal fascicle (arcuate fascicle)</td>
<td>Articulatory processing/ Phonology</td>
<td>Verbal diadochokinesis, repetition/ phonological odd word cut</td>
</tr>
<tr>
<td>Inferior frontoparietal fascicle</td>
<td>Semantics, reading, judgment</td>
<td>Semantic association, semantic odd word/picture cut, semantic judgment</td>
</tr>
</tbody>
</table>
What were the outcomes?

- Mr Goetz (Neurosurgeon) emailed a few comments....
  “I felt that your pre-assessment and intra-operative testing were essential to this case and have contributed to his good outcome.”
  “There is a strong case to argue SLT involvement for all awakes as you know, and I am sure Naomi Goodwin (anaesthetist) would agree.”
  “I mentioned this to the WHSCC commissioner who visited today, as one of the resource gaps for the LGGC service. I have provided your names so she may be in touch. We will continue to discuss this internally.”

- Explore potential to create a Neuro-Oncology post at UHW to support with Awake Craniotomy procedures and support MDT management (Neuro-oncology Peer Review 2016)

- Ongoing changes to LGG procedures in Cardiff and Vale i.e. new consultant neuro-surgeons with new ideas, use of fluorescent dye to more accurately localize tumours.

- This is only the beginning and our work to date has provided just a snapshot of the potential within neuro-oncology.