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Supplemental material

Variation in pediatric stereoelectroencephalography practice among pediatric neurosurgeons in the United States: survey results
Kennedy et al.
https://thejns.org/doi/abs/10.3171/2021.1.PEDS20799

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Survey of SEEG Practice Preferences for Pediatric Epilepsy Surgeons

**Training**

1. Have you completed an epilepsy fellowship?
   - Yes
   - No

2. Have you completed a pediatrics fellowship?
   - Yes
   - No

3. Do you currently use stereo-electroencephalography (sEEG) in your practice?
   - Yes
   - No
Survey of SEEG Practice Preferences for Pediatric Epilepsy Surgeons

Surgeon Experience

4. Have you used sEEG in the past year?
   - Yes
   - No

5. Do you perform other invasive monitoring such as grids or strips?
   - Yes
   - No

6. Why do you prefer grids and/or strips over sEEG?
   - Safety
   - Cost
   - Lack of sEEG Training
   - Tried sEEG and didn't like it
   - Other (if more than one of the above reasons applies, please list them here)

   [Box for other reasons]
7. Where did you learn sEEG techniques? Select all that apply.

- [ ] Residency
- [ ] Pediatrics Fellowship
- [ ] Epilepsy Fellowship
- [ ] sEEG Course
- [ ] Other Period of Focused Study
- [ ] None of the Above
Survey of SEEG Practice Preferences for Pediatric Epilepsy Surgeons

Surgeon Experience

8. For how many years has your pediatric sEEG program existed?

- [ ] <12 months
- [ ] 12-24 months
- [ ] 2 years
- [ ] 3 years
- [ ] 4 years
- [ ] >5 years

9. How many unique pediatric sEEG patients do you operate on per year?

- [ ] 

10. What proportion of your pediatric invasive monitoring is performed with sEEG (rather than grids/strips)?

- [ ] 0-10%
- [ ] 10-30%
- [ ] 30-50%
- [ ] 50-70%
- [ ] 70-90%
- [ ] 90-100%

11. How old was your youngest sEEG patient? (Years)

- [ ] 

12. What was the duration of your longest implant? (Days)

- [ ] 

13. What is your estimated median implant duration? (Days)

- [ ] 

14. What type of research are your pediatric sEEG patients involved in? Check all that apply.

- [ ] None
- [ ] Outcomes
- [ ] Electrocorticography (ECoG) analysis
- [ ] Stimulation studies using sEEG electrodes
### Technical Aspects

15. How long do you spend planning trajectories for a typical case?
- <1 hour
- 1-2 hours
- 2-3 hours
- >3 hours

16. What method of stereotaxy do you currently use?
- Rosa Robot
- Crenshaw Robot
- Vertek (Stealth)
- Varioguide (Brainlab)
- Leksell Frame
- CRW/BRW Frame
- Talairach Frame
- Other (please specify)

17. What imaging modalities do you use in sEEG planning? Check all that apply.
- MRI without contrast
- CT without contrast
- MRI with contrast
- CT with contrast
- CTA
- CTV
- MRA
- MRV
- Conventional Angiography
- Other (please specify)

18. What type of cranial fixation do you use for robotic SEEG insertion?
- CRW Frame
- Leksell Frame
- Mayfield
- Other (please specify)
19. Which surgical instrument do you primarily use to open the dura?

- Insulated cautery probe
- K-wire
- Open dura intentionally with the drill
- Sharp needle

Other (please specify)

20. What is your estimated median number of electrodes per initial implant?

21. What proportion of your implants are bilateral?

- 0-10%
- 10-30%
- 30-50%
- 50-70%
- 70-90%
- 90-100%

22. In what proportion of cases do you add electrodes after the first implantation?

- 0-10%
- 10-30%
- 30-50%
- 50-70%
- 70-90%
- 90-100%

23. Do you have a standard non-lesional temporal array?

- Yes
- No

24. Do you have a standard frontal array?

- Yes
- No

25. In what proportion of cases do you employ a dedicated insular electrode?

- 0-10%
- 10-30%
- 30-50%
- 50-70%
- 70-90%
- 90-100%
26. What approaches do you commonly use for dedicated insular electrodes? Check all that apply.

- [ ] From Superior/Anterior
- [ ] From Superior/Posterior
- [ ] Orthogonal (Transsylvian)
- [ ] Other (please specify)

27. Do you use any particular strategies for thin bone?
Survey of SEEG Practice Preferences for Pediatric Epilepsy Surgeons

Outcomes

28. What proportion of your SEEG cases:

<table>
<thead>
<tr>
<th></th>
<th>0-10%</th>
<th>10-30%</th>
<th>30-50%</th>
<th>50-70%</th>
<th>70-90%</th>
<th>90-100%</th>
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</thead>
<tbody>
<tr>
<td>Define a network of focal</td>
<td></td>
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<tr>
<td>epilepsy</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Undergo a focal treatment</td>
<td>○</td>
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<td>surgery, i.e. resection,</td>
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<td>ablation, RNS, or</td>
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<td>hemispherotomy?</td>
<td>○</td>
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<tr>
<td>Undergo a non-focal treatment</td>
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<tr>
<td>surgery, i.e. DBS, callosotomy</td>
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<td>VNS?</td>
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</tbody>
</table>

29. In your experience, approximately what percentage of your SEEG cases have resulted in symptomatic hemorrhage requiring surgery?

30. In your experience, approximately what percentage of your SEEG cases have resulted in asymptomatic hemorrhage?

31. In your experience, approximately what percentage of your SEEG cases have resulted in post-operative infection?

32. In your experience, approximately what percentage of your SEEG cases have resulted in death?

33. Following surgery, do you correlate actual trajectories with planned trajectories for every electrode?

   ○ Yes
   ○ No

34. Choose which best represents your opinion. sEEG informs a resection strategy:

   ○ More effectively than grids/strips
   ○ As effectively as grids/strips
   ○ Less effectively than grids/strips
Optional

35. Please enter your name and institution if you wish

Name

Institution
<table>
<thead>
<tr>
<th>Responses</th>
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<tr>
<td>13mm bolt</td>
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<tr>
<td>Add suture after placement and strain relief staples</td>
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<tr>
<td>anchor bolt more deeply, make sure incision lines up perfectly with trajectory to avoid deflection from thick muscle</td>
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<tr>
<td>anchoring by suturing the electrode to the scalp rather than anchor bolt</td>
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<tr>
<td>Avoid it, or rarely, sew electrode to the scalp after placement</td>
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<tr>
<td>Be careful</td>
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<tr>
<td>Can place the electrode without a bolt but i haven’t had to do this yet.</td>
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<tr>
<td>Careful. suture to skin depth electrode without a bolt for very thin bone, implanted with a slotted cannula</td>
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<tr>
<td>Don’t tighten the bolt too tight &amp; use a lot of padding when wrapping the head so they don’t get bumped or shoved.</td>
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<tr>
<td>Don’t use SEEG with thin bone (under about age 10)</td>
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<tr>
<td>Don’t worry about perfect purchase</td>
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<tr>
<td>Great care... sometimes a skin pursestring suture</td>
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<tr>
<td>If redo with resorbed bone, then do not use anchor bolt</td>
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<tr>
<td>larger diameter bolts (3.2mm). sometimes have to stick the electrode in place without bolt</td>
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<td>no-avoid if possible</td>
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Supplementary Table 1: Answers to the Question: Do you use any particular strategies for thin bone?