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Intractable Electrodes for Epilepsy

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Description

Epidural electrodes are a helpful but underappreciated tool in the preoperative evaluation of refractory epilepsy. We've switched to using cylindrical epidural 1-contact electrodes (1-CE) instead of Peg electrodes in recent years. 1-CEs are more adaptable because explanation can be done at the patient's bedside. Here, we share our 1-CE experience as well as the technical details that go along with it. From September 2011 to July 2021, 56 patients with intractable epilepsy who had epidural electrode insertion for presurgical evaluation at the Charité University Hospital's Department of Neurosurgery were included in this retrospective study. The median age of the patients at surgery was 36.3 years (range: 18–87), with 30 (53.6%) females and 26 (46.4%) males. 507 electrodes were implanted in total, including 93 Fo electrodes, 33 depth electrodes, and 381 epidural electrodes, with a total surgery duration of 100.5 38 minutes and 11.8 5 minutes per electrode. In 21 patients, there were a total of 24 problems (8 Fo electrode dislocations, 6 CSF leaks, 6 epidural electrode dislocations or malfunction, 3 wound infections, and 2 haemorrhages); 11 of these required revision surgery. In Peg electrodes, the relative electrode complication rate was 3/222 (1.4 percent) and in 1-CE, it was 3/159 (1.9 percent). In conclusion, 1-CE epidural recording is technically possible, has a low complication rate, and can effectively replace Peg electrodes.

We describe our experience with epidural electrodes in the context of preoperative monitoring for epilepsy surgery, as well as the technical complexities of this technique, in this article. In recent years, we've switched to using 1-CE electrodes instead of Peg electrodes for epidural electrode insertion. This happened because the Peg electrodes' approval had run out and the production business was unable to extend it. As a result of these circumstances, we altered the procedure using 1-CEs and discovered that the new technique allowed for easier handling, such as bedside removal without the need for further general anaesthetic or reopening the incision.

When compared to other procedures, such as subdural or depth electrodes, epidural electrode implantation preserves the dura's integrity. Iatrogenic CSF leaks may occur, however they did not require surgical intervention in our research sample. Epidural electrodes allow for a reasonably quick placement of bilateral electrodes without the need for a craniotomy or a second procedure to remove them. The diameter of the 1-CE is substantially smaller than that of Peg electrodes, allowing for more adaptable handling.

In comparison to the complication rates in Fo and depth electrodes (8/93 (8.6%) and 2/33 (6.1%), our results demonstrated that epidural electrodes had a low complication rate of 6/381 (1.6%). With 3/222 (1.4 percent) Peg dislocations, 1/159 (1.3 percent) 1-CE dislocations, and 1/159 (0.6 percent) 1-CE dislocations, the relative complication rates of the two epidural electrode types were comparable. To avoid dislocation in the 1-CE, we make a "notch" in which the electrode tip is put after the burr hole is formed with a small Kerrison punch, such as a 2 mm Kerrison punch. The burr hole is filled with bone wax or gelita sponge after the 1-CE is placed to ensure that the electrode remains in its allocated area [1-5].

Conflict of Interest

None.

References

1. Picot, Marie-Christine, Jaussent A. Audrey, Neveu Dorine, and Kahane Philippe, et al. “Cost-effectiveness analysis of epilepsy surgery in a controlled cohort of adult patients with intractable partial epilepsy: A 5-year follow-up study.” *Epilepsia* 57 (2016): 1669-1679.
2. Almeida, Antonio N., Martínez Victor, and Feindel William. “The first case of invasive eeg monitoring for the surgical treatment of epilepsy: historical significance and context.” *Epilepsia* 46 (2005) 1082-1085.
3. Barnett, Gene H., Burgess C. Richard, Awad A. Issam, and Skipper J. George, et al. “Epidural peg electrodes for the presurgical evaluation of intractable epilepsy.” *Neurosurg* 27 (1990): 113-115.
4. Schmidt, Richard F., Wu Chengyuan, Lang J. Michael, and Soni Pranay, et al “Complications of subdural and depth electrodes in 269 patients undergoing 317 procedures for invasive monitoring in epilepsy.” *Epilepsia* 57 (2016): 1697-1708.
5. Lee, Wan-Su, Lee Jung-Kyo, Lee Sang-Ahm, and Kang Joong-Koo, et al. “Complications and results of subdural grid electrode implantation in epilepsy surgery.” *Surg Neurol* 54 (2000): 346-351.

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