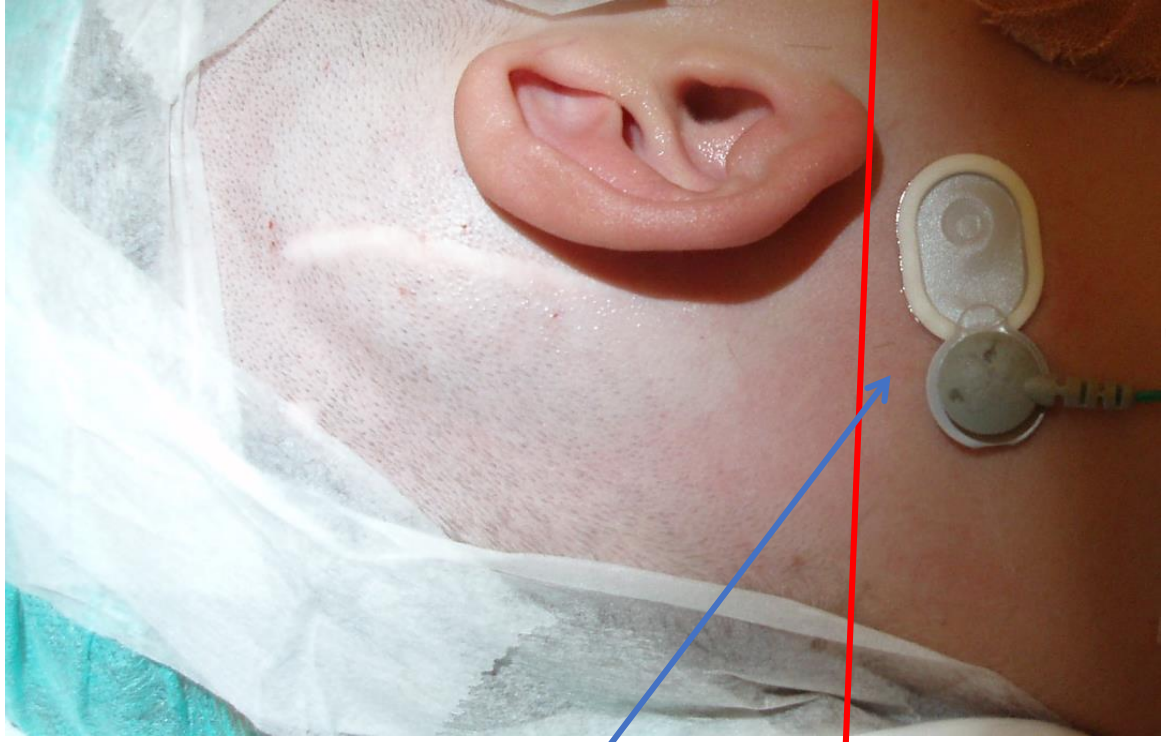
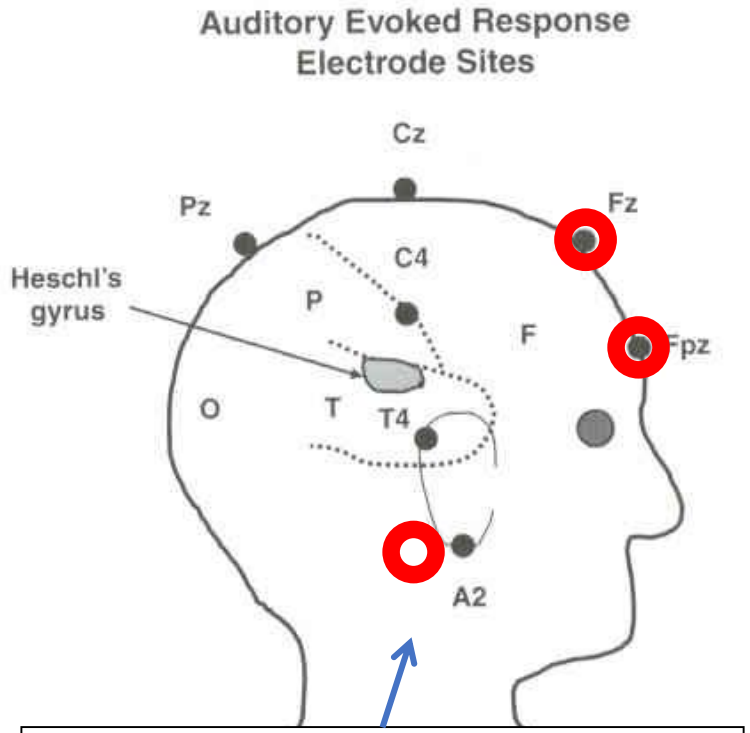
# EABR

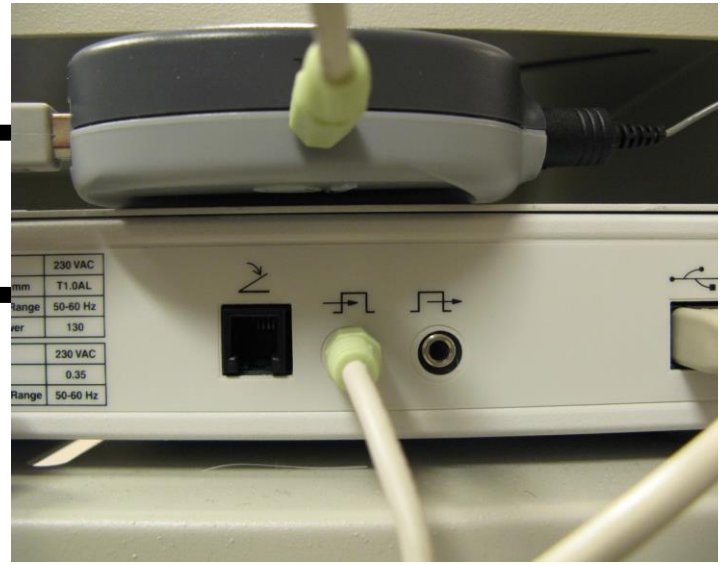
Ralf Greisiger

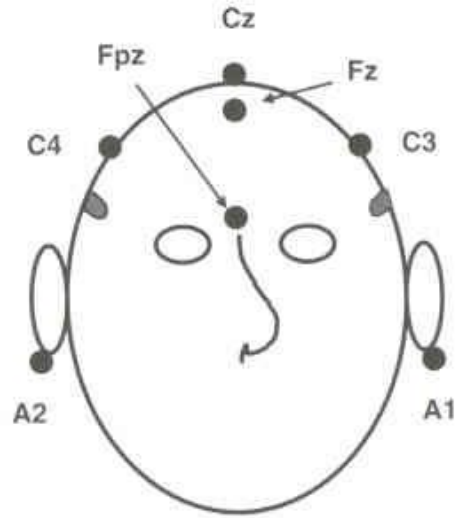





Do not place the electrode too far down, artifact is getting larger

A1 and A2 needs to be placed a bit lower to be out of the surgical field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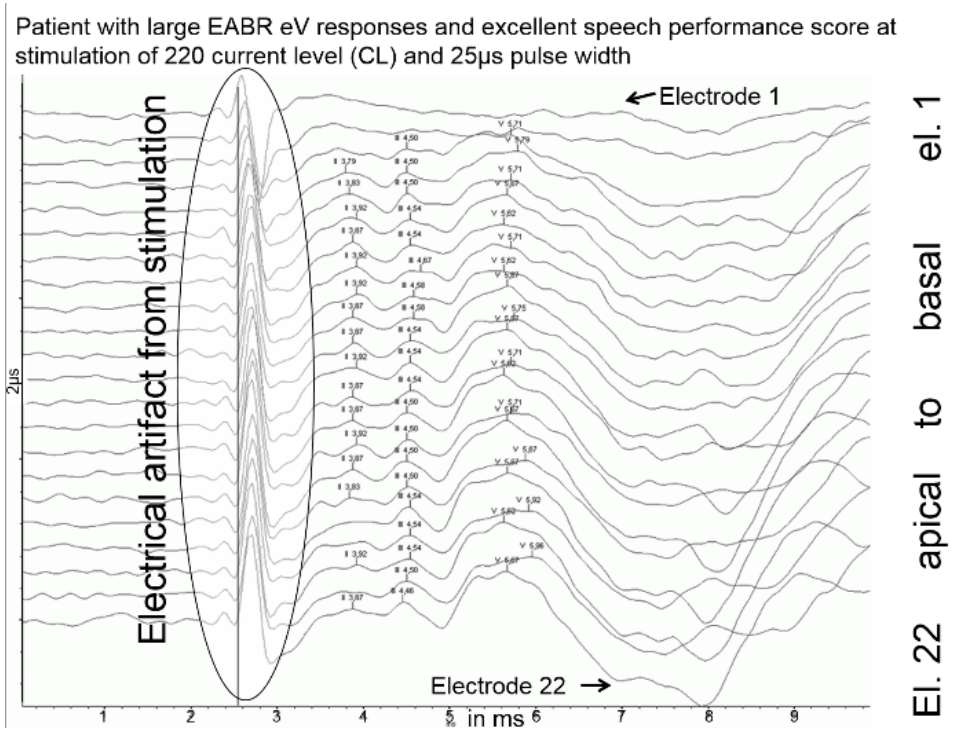
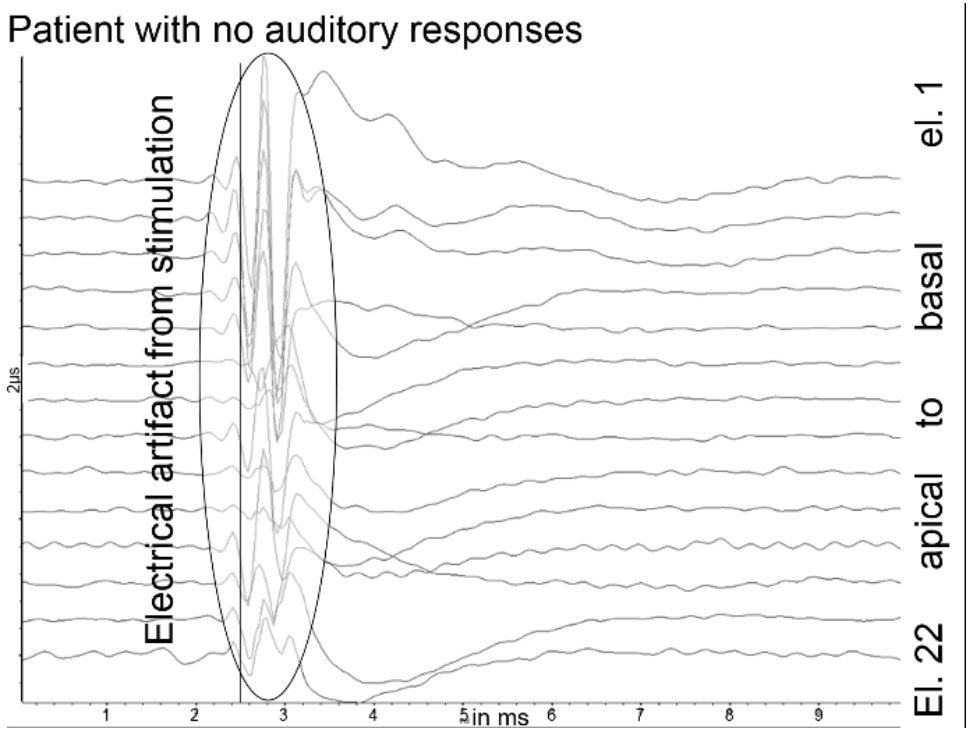
# Intra-OP EABR measurements

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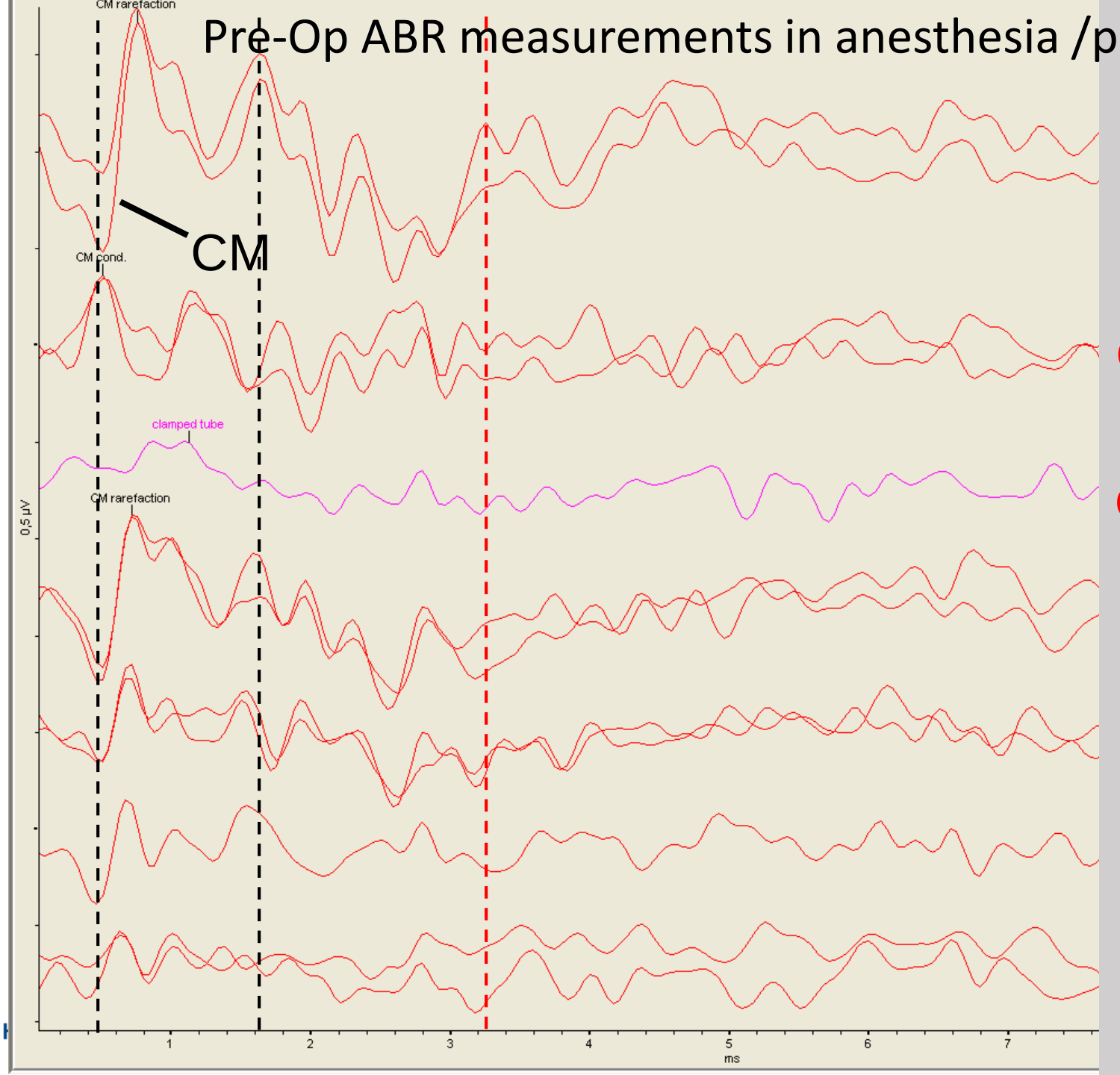
# Pre-Op ABR measurements in anesthesia /patient LA, 2.7y




109dB HL R rarefaction

100dB HL R condensation

100dB HL R clamped tube

100dB HL R rarefaction

90dB HL R rarefaction

80dB HL R rarefaction

70dB HL R rarefaction

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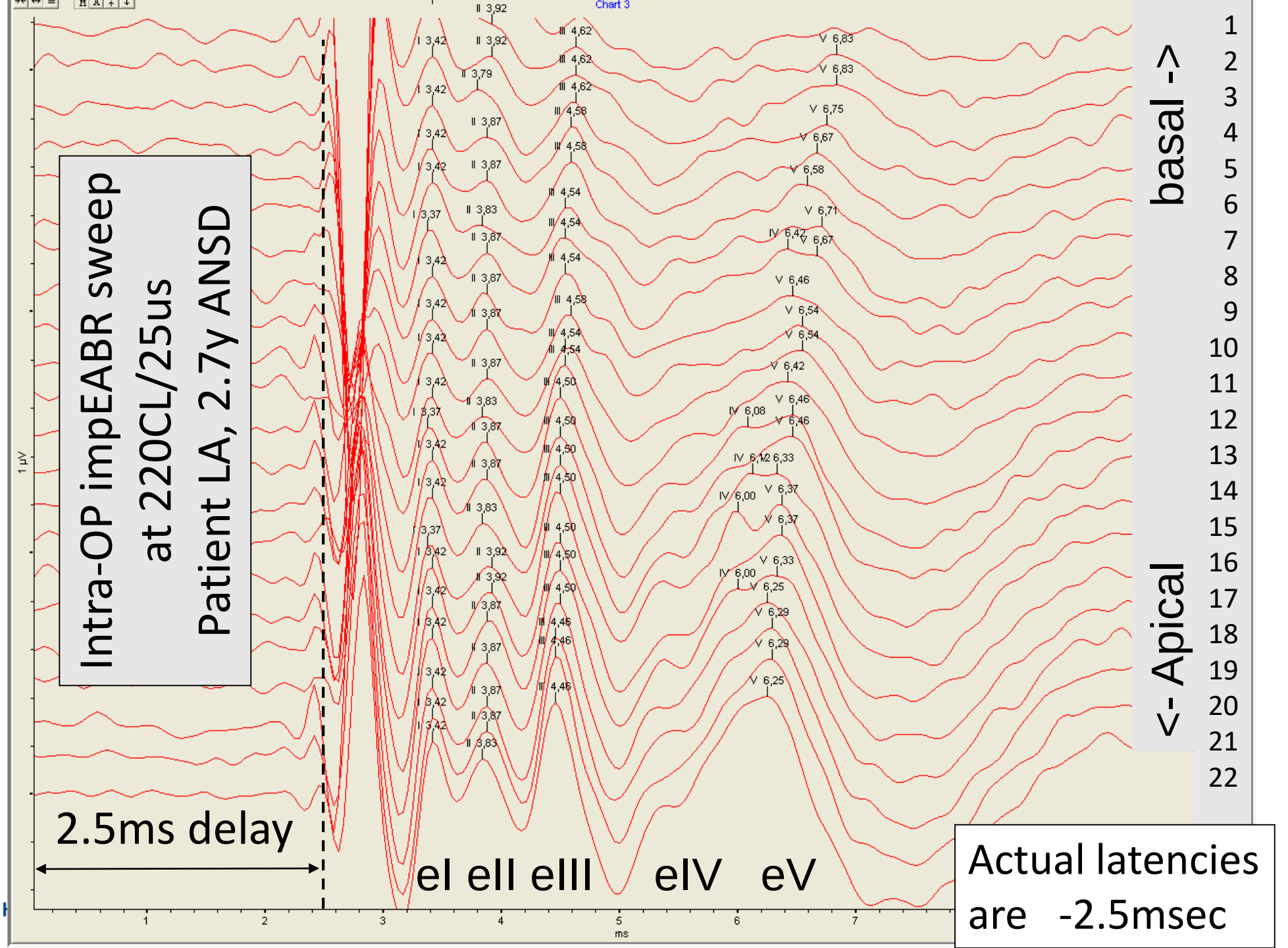
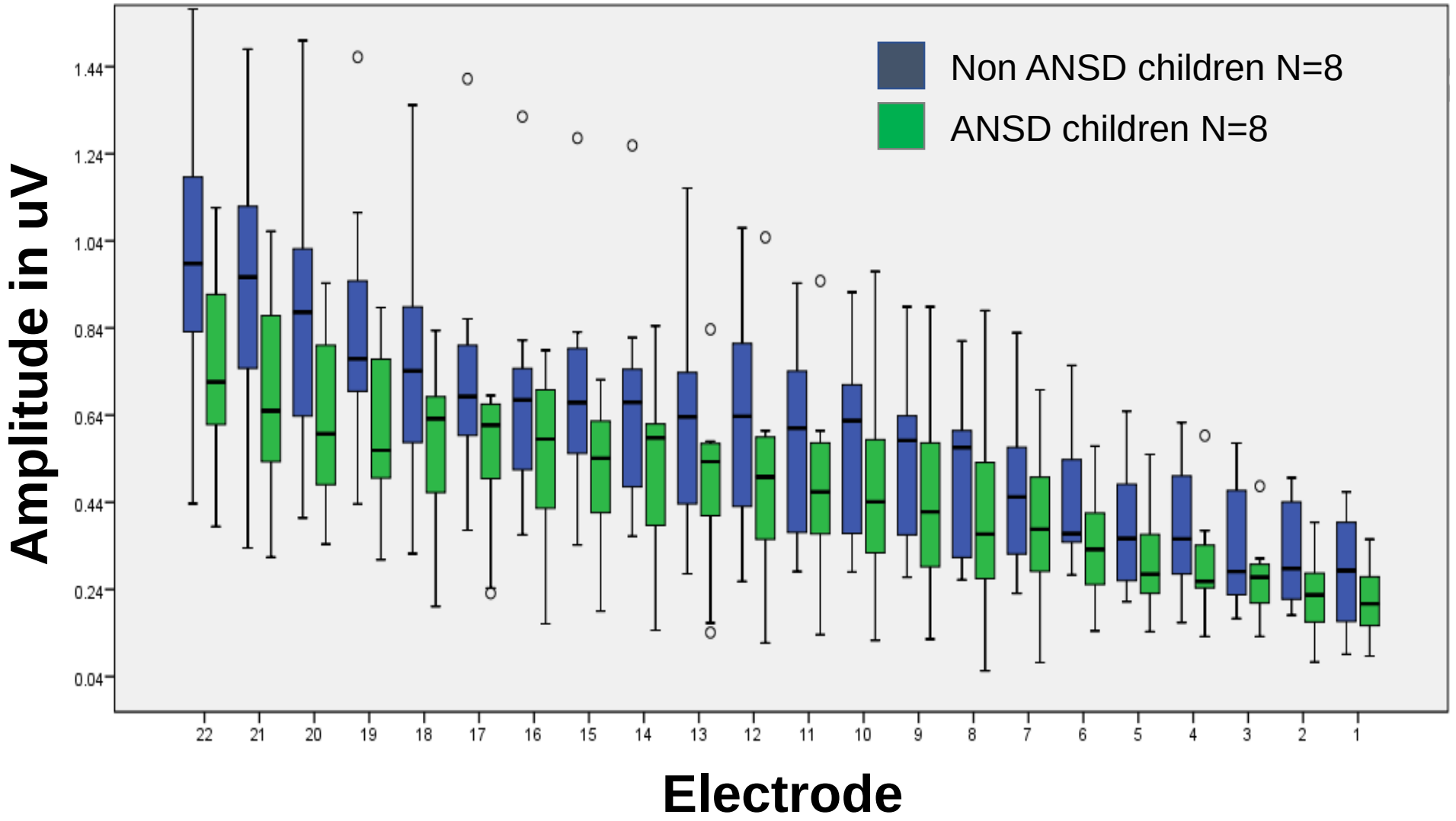

Intra-OP impEABR sweep
at 220CL/25us
Patient LA, 2.7y ANSD
basal ->
<- Apical
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
2.5ms delay
eI eII eIII eIV eV
Actual latencies
are -2.5msec
1 µV
ms

# Amplitude of eV for ANSD vs non-ANSD Children

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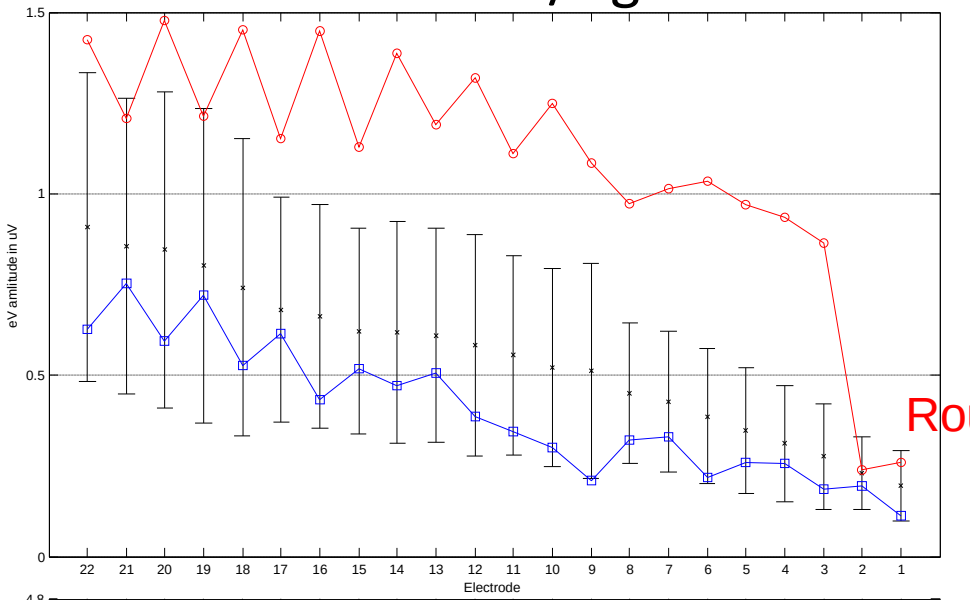
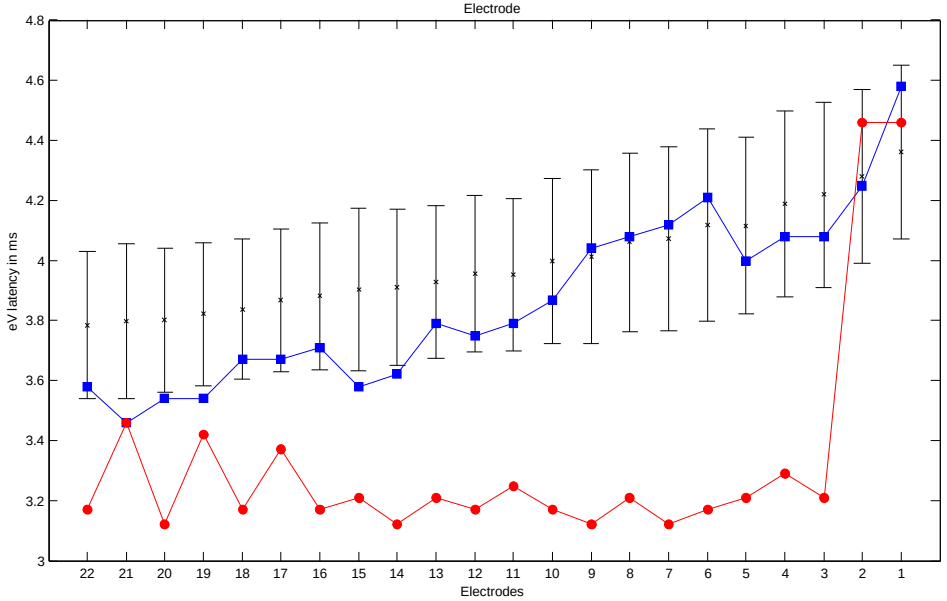
# eV amplitudes and latencies left/right cochleostomy/round window




N=75 ears Mean values and STD

Round window insertion

Cochleostomy insertion




Cochleostomy insertion

Round window insertion

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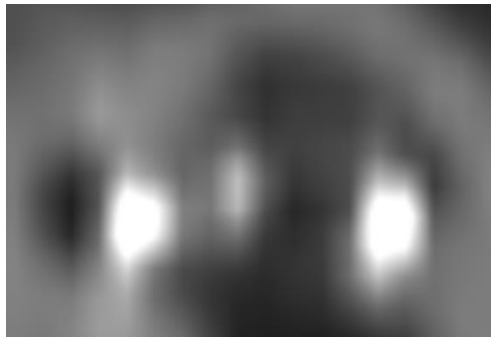
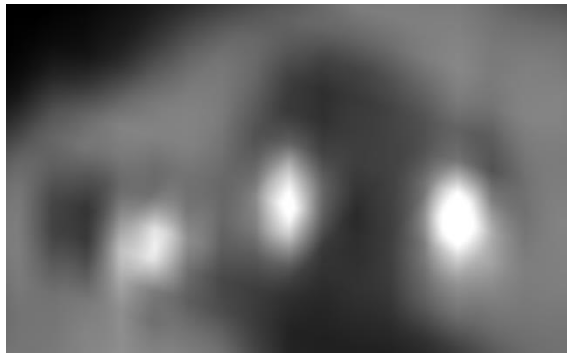
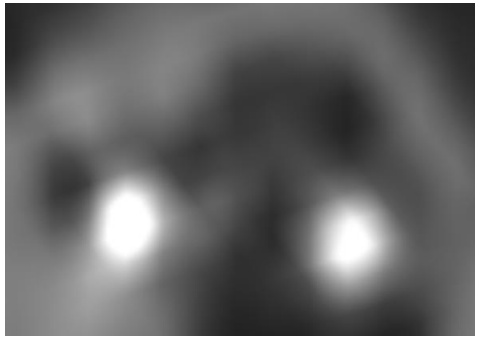
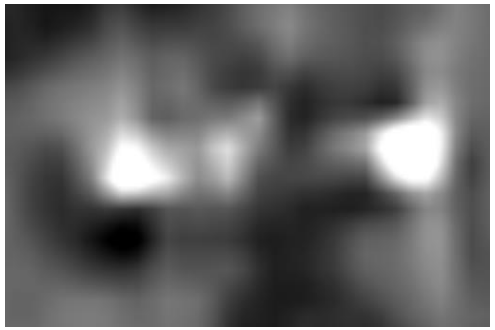
Right side CI2 RW

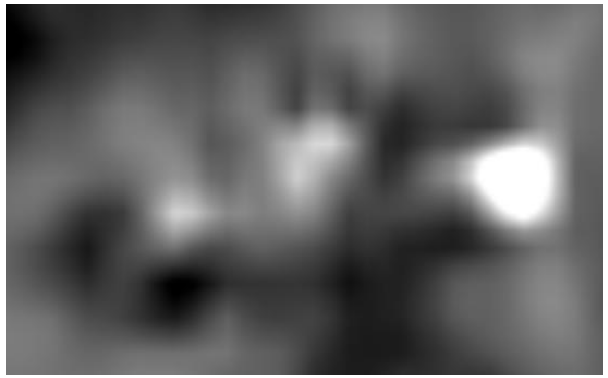


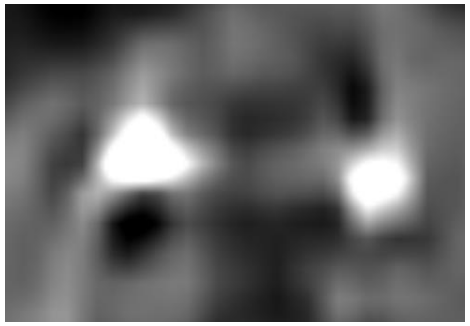




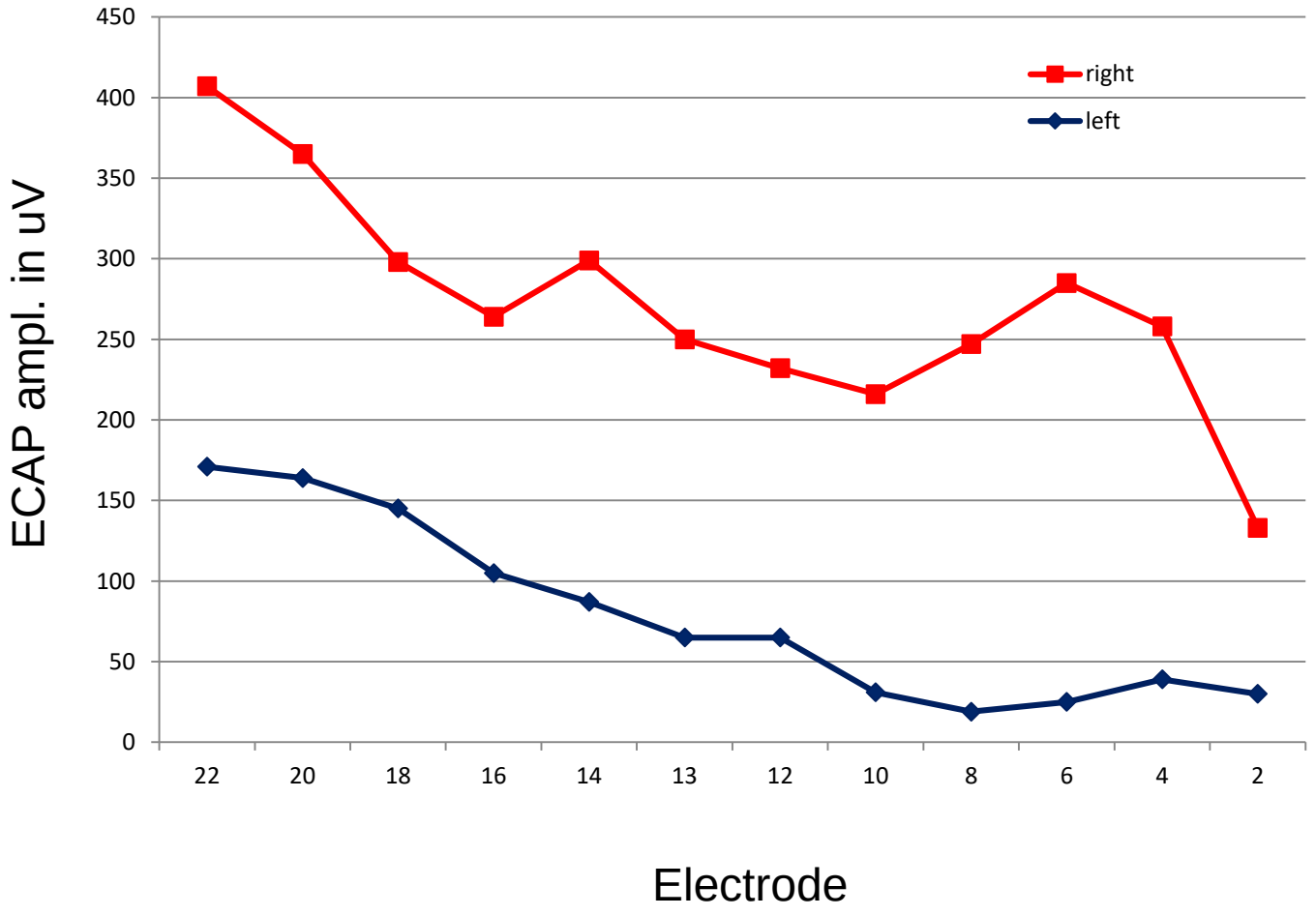
Left side CI1 cochleostomy







# ECAP sweep at 220CL 25us

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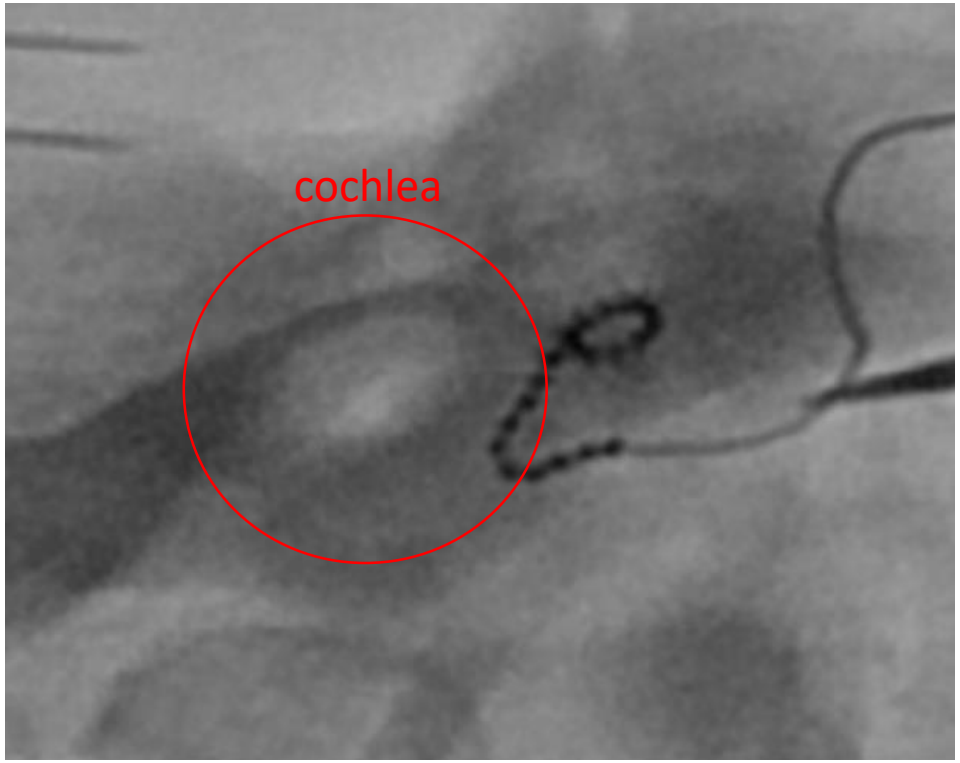
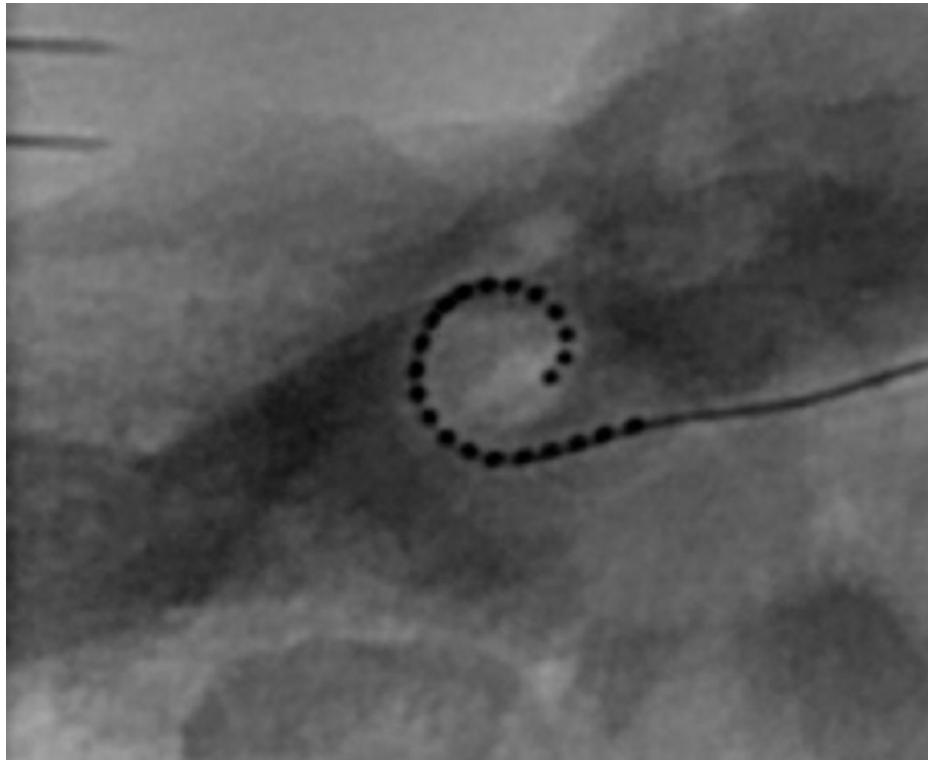
# Fluoroscopy …

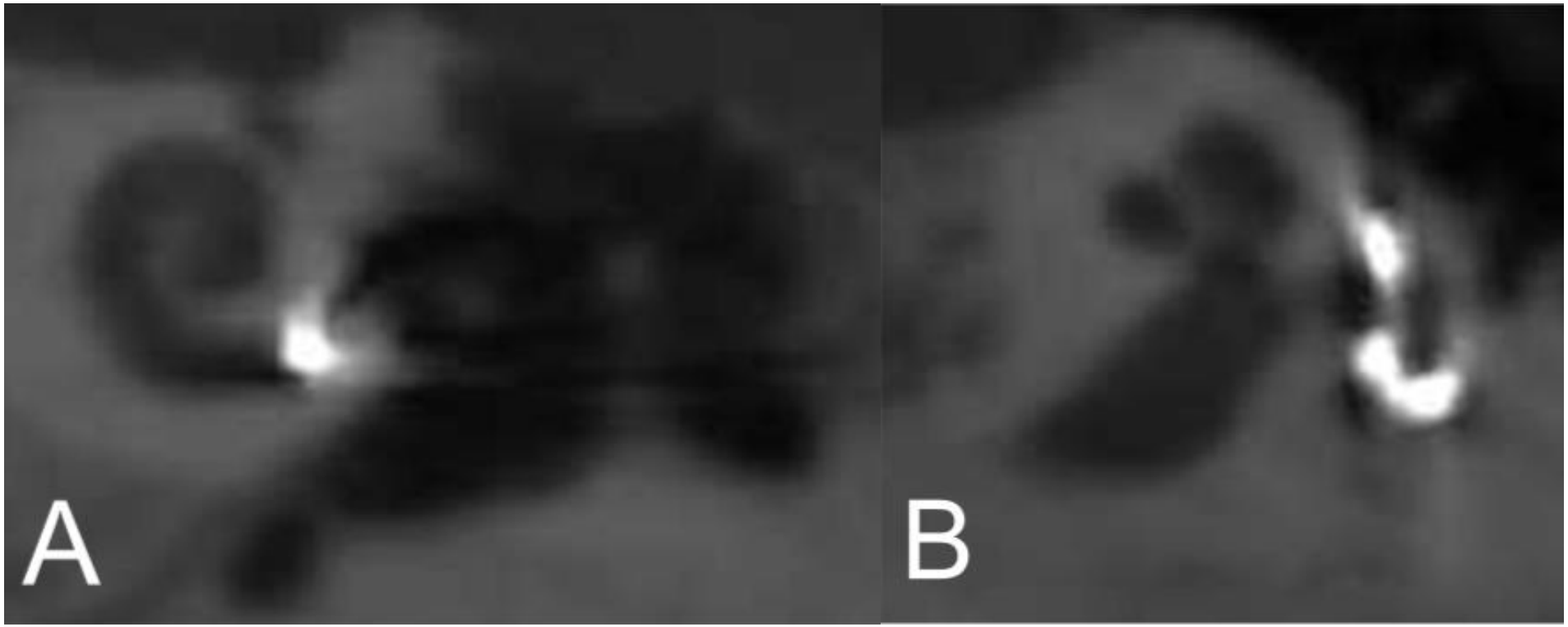
… before revision surgery …



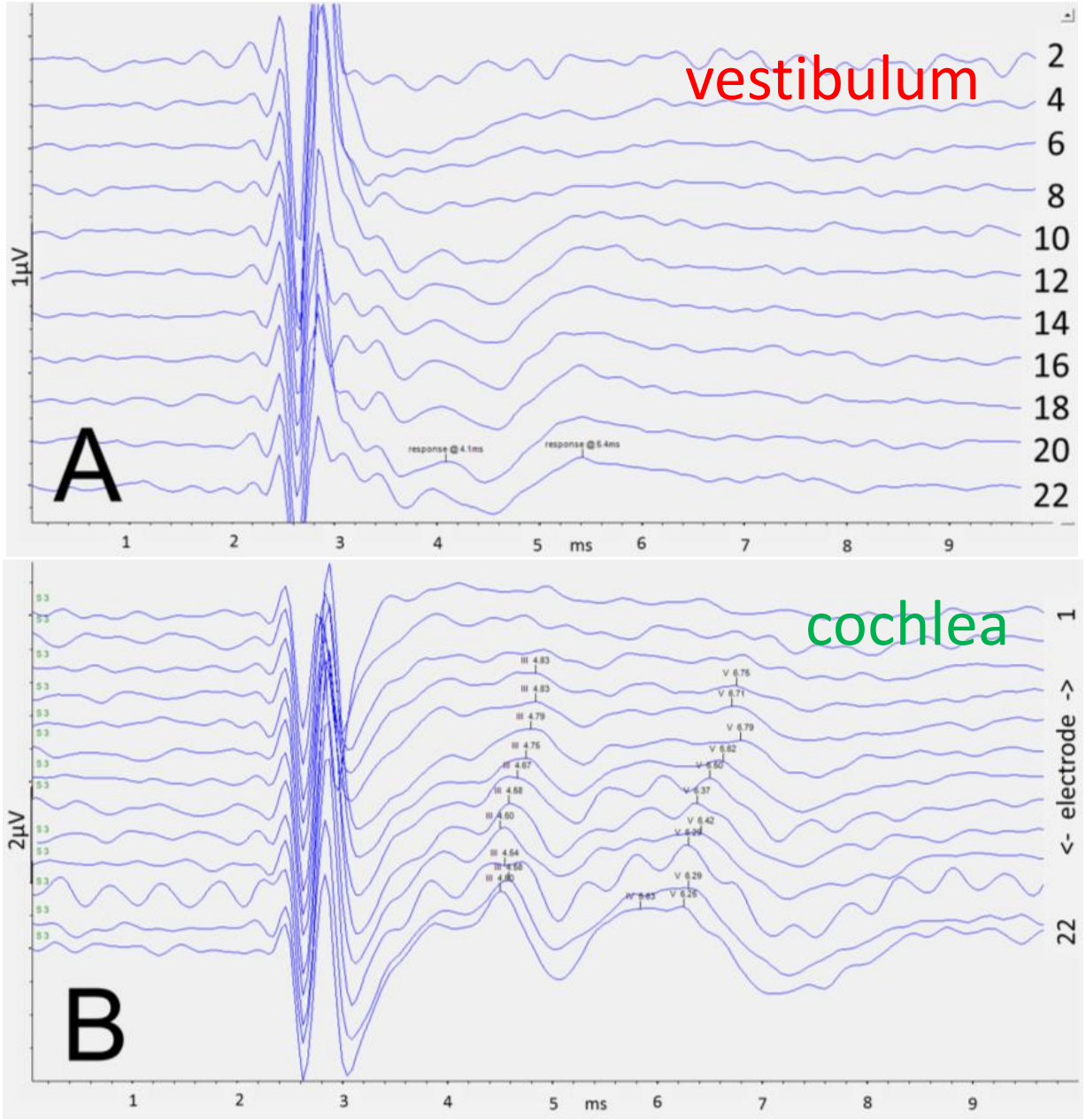

… and after



# Electrode array placed in the vestibulum



# EABR measurements for different placements in the same patient

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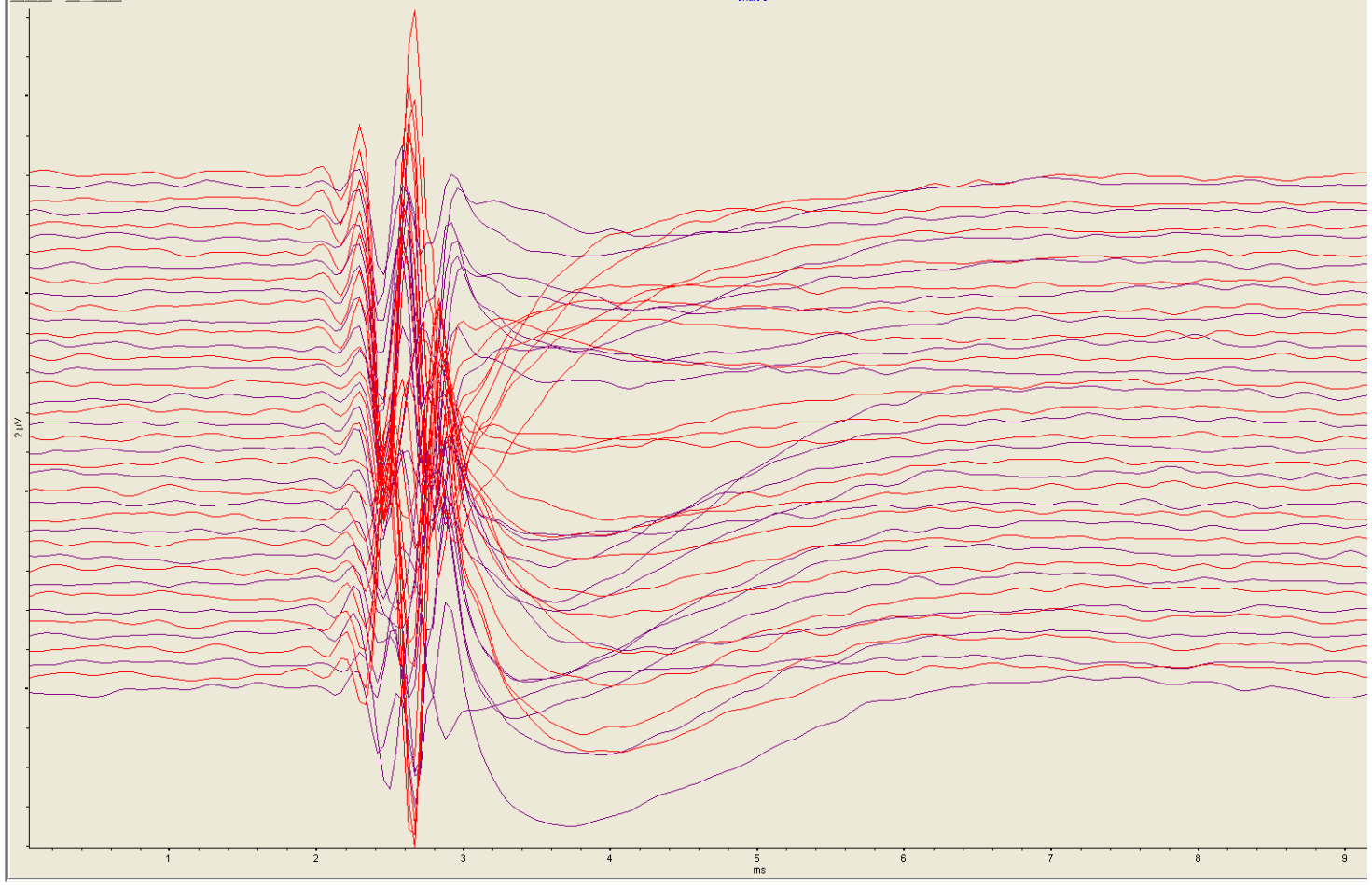
# Displacement Electrode array right side

CT-scan confirms impEABR measurement





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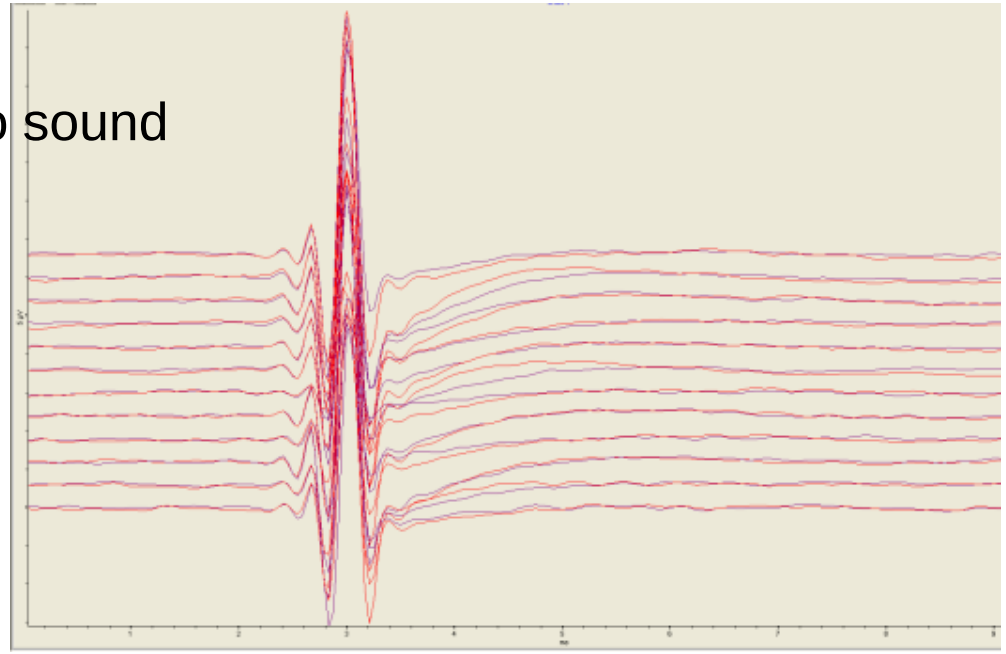
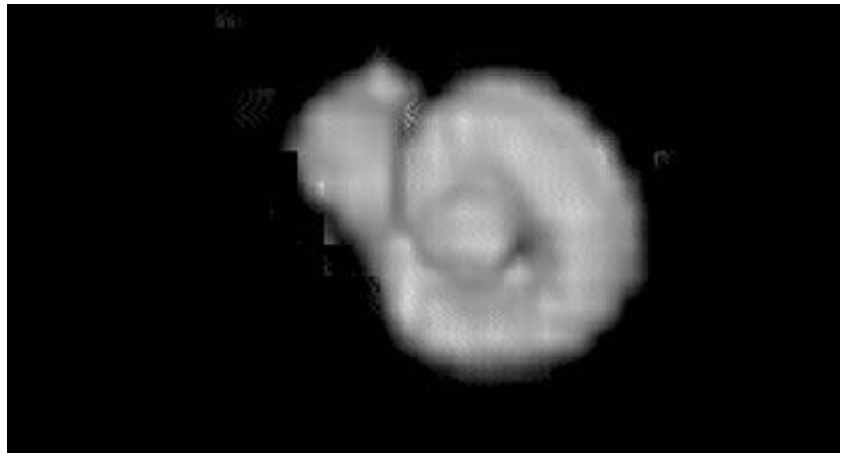
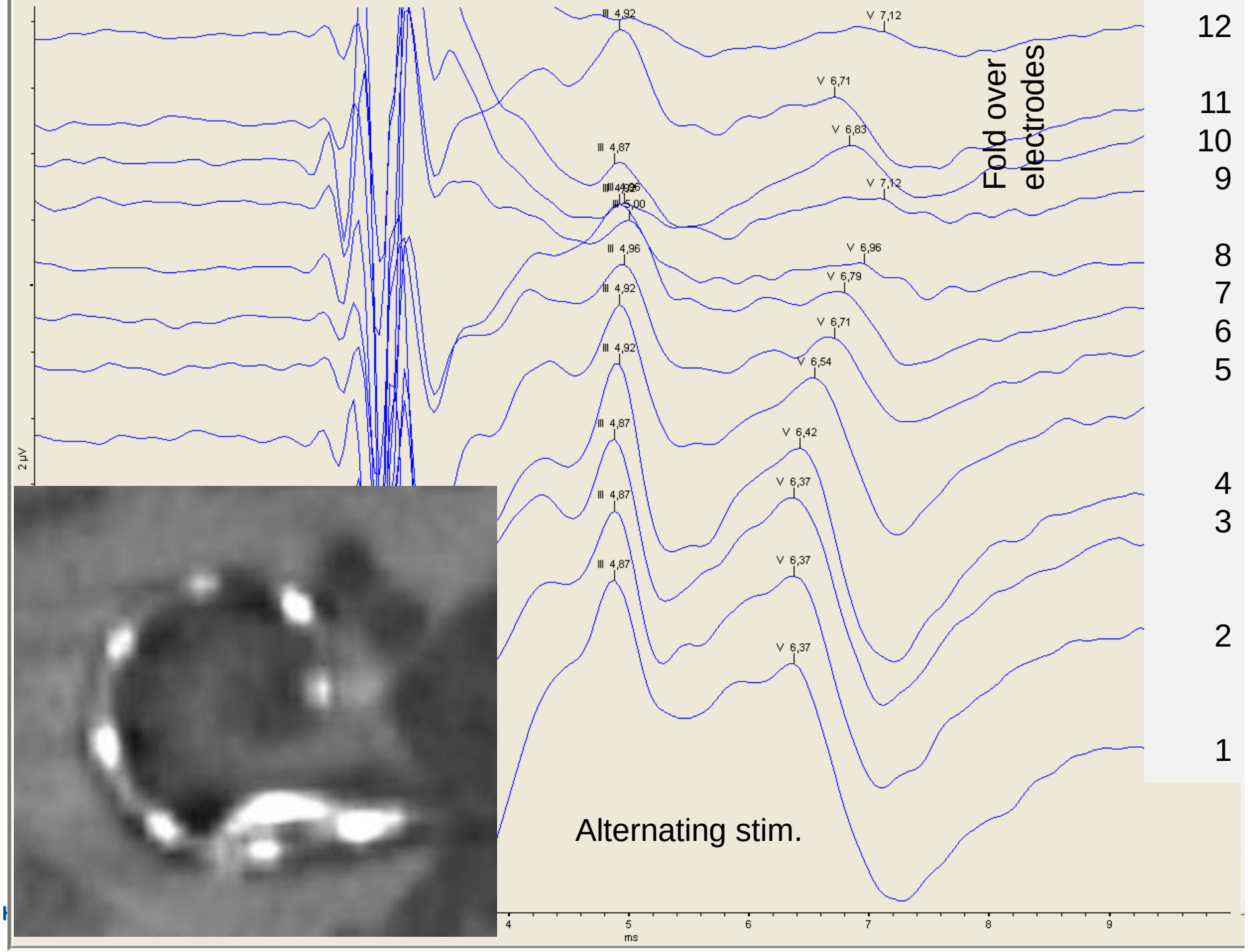
# CHARGE syndrome with cochlea-hypoplasi

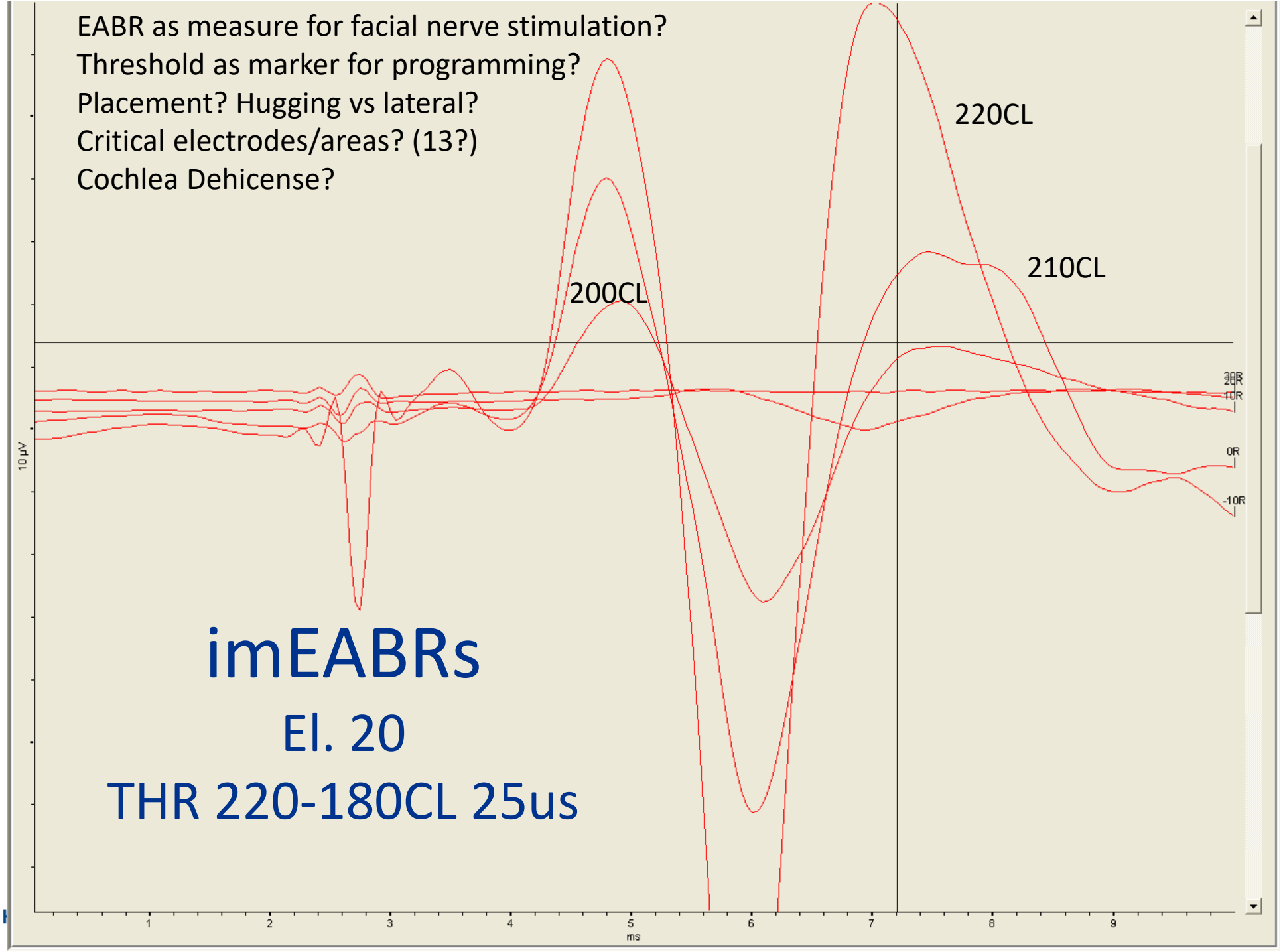
- MRI did show thin nerve of hearing
- No ESRT,ECAP, EABR response
- After 1 year of CI use no reactions to sound
- Explanation will be considered






Fold over electrodes
12
11
10
9
8
7
6
5
4
3
2
1
2 µV
4
5
6
7
8
9
ms
Alternating stim.

EABR as measure for facial nerve stimulation?
Threshold as marker for programming?
Placement? Hugging vs lateral?
Critical electrodes/areas? (13?)
Cochlea Dehicense?




# imEABRs

## El. 20

## THR 220-180CL 25us

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# Test electrode in cases of malformation, poly ANSD, CHARGE, tumor removal …


Usefulness of Electrical Auditory Brainstem Responses to Assess the Functionality of the Cochlear Nerve Using an Intracochlear Test Electrode

Luis Lassaletta, Marek Polak, Jan Huesers, Miguel Dı´az-Go´mez, Miryam Calvino, Isabel Varela-Nieto, and Javier Gavila´n

2017

Otology & Neurotology

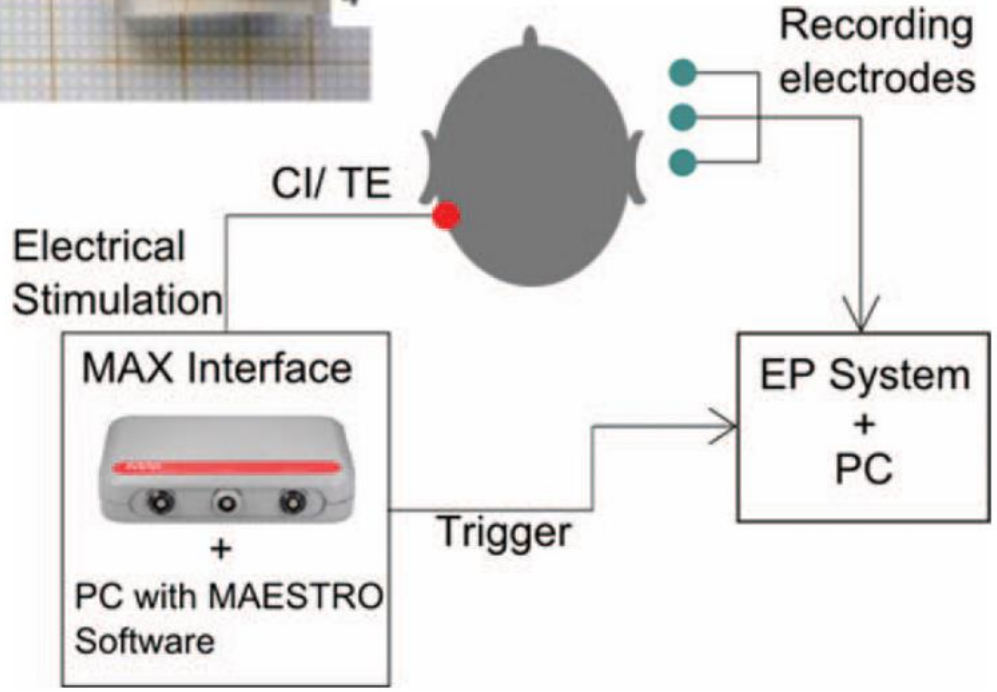


**FIG. 2.** The intraoperative setup used for recording eABR signals with the test electrode (TE) and the cochlear implant (CI). The Nicolet EDX Synergy (Natus) recording system was used as the evoked potential (EP) system.

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