Purpose: Epilepsy surgery has been demonstrated a valuable treatment for drug resistant focal epilepsy patients; nonetheless few studies assess the very long-term post-operative outcome of epilepsy surgery. Aim of this study is presenting the long-term outcome of a series of patients who underwent a tailored cortical resection from May 1996 to December 2003.

Method: Assessment of the clinical outcome and of the potentially associated anatomo-electro-clinical variables.

Results: We identified 420 patients (46% females) with at least 10 years follow-up (range: 10-17.6, mean: 13.4 years); 81% of subjects had a seizure onset < 14 years of age, 42% < 6 years. Surgery was realized in adult age in 80.2%, at a mean age of 27.5 years and a mean duration of 18.7 years. MRI was normal in 10.2% of cases; 41.6% of subjects underwent a pre-surgical Stereo-EEG evaluation. Surgery was performed in the left hemisphere in 44.5% of cases; a lesionectomy was realized in 34 patients, in the remaining a corticectomy, including the eventual lesion, was performed. Surgery was: temporal (58.6%), frontal (19.4%), parietal (4%), occipital and central (0.7% each), multilobar (16.6%). Malformative pathologies represented the commonest histological finding (43.6%). Seizure freedom was achieved by 70% of subjects (Engel class Ia: 42.8%, Ib: 9%, Ic: 12.4%, Id: 5.4%). 10.7% are in class II, 9% in class III and 10.3% in class IV. AEDs were stopped in 35.7% and tapered in further 18% of cases. A relapse was observed in 10 cases. An MRI-identifiable discrete lesion represented a statistically-significant favourable predictor, whereas early epilepsy onset (< 5 years), the necessity to perform Stereo-EEG, an extratemporal resection and FCD I at histology statistically correlated with a negative outcome.

Conclusion: A very long-term seizure control following individually-tailored epilepsy surgery can be achieved in 70% of the patients, allowing a drug discontinuation in around 50%.