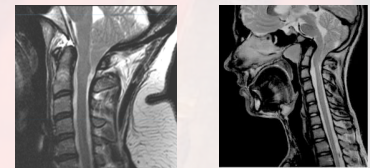


# Polysomnographic evaluation of sleep in Chiari Type 1 malformation before surgical decision and after surgery

D. Cugy (1,2), J.R. Vignes (3), M. Guibourd de Luzinais (3)

U(1)UHC (BORDEAUX, FR); (2)CHU Bordeaux, EFSN - Sleep Clinic (Bordeaux, FR);  
(3)Neurochirurgie, CHU BORDEAUX (BORDEAUX, FR)

**Objectives / Instruction:** Chiari malformation is known to be associated with sleep apnea but others sleep disorders could be identified. We report here our experience of nocturnal polysomnographic performed before surgical decision and after surgery of Chiari type 1 malformation



**Methods:** Retrospective analysis. Since 2010, we explored patients with Chiari malformation during the pre-operative assessment, and when possible or indicated after surgery. Nocturnal video-polysomnographic were performed in the sleep laboratory. Furthermore, at each evaluation, patient completed Epworth Sleepiness Scale (ESS), Pichot ADA asthenia scale, Pichot Q2DA depression scale and Modified Essay Questions (MEQ).

**Results:** Seventeen patients were recorded before surgical assessment and 6 after surgery. Mean age was  $43 \pm 13$  years old. All patients have sleep fragmentation by arousals, due to Periodic Limb Movements (PLM) for 11 patients, and significant sleep apneas (mean 18/h) for 6 patients. Mean total sleep time (TST) was  $405 \pm 19$  mn, under normal data from our sleep lab (mean =  $415 \pm 2$  mn). REM sleep represented only 13% of the TST. After surgery, we observed an increase of mean TST to  $432 \pm 25$  mn (vs  $385 \pm 44$  mn before) and of the REM sleep (17% of the TST vs 13%) for the 6 reevaluated patients. Sleep apnea index decreased from 18/h to 13/h and PLM appeared to be less frequent. Considering self-evaluation, only ESS has significant abnormal results with a mean score at  $11 \pm 3$  before surgery. For the 6 patients, all scores decreased after surgery: from  $12 \pm 2$  to  $6 \pm 3$  for ESS,  $16 \pm 5$  to  $7 \pm 2$  for ADA,  $8 \pm 3$  to  $3 \pm 2$  for Q2DA and  $4 \pm 2$  to  $1 \pm 1$  for MEQ.

**Conclusions:** Our retrospective data showed a higher association with PLM than to apneas in Chiari malformation. Furthermore, sleep architecture parameters were altered. So polygraphy was insufficient to explore sleep and a polysomnographic study has to be preferred. Use of Epworth Sleepiness Scale questionnaire as a screening tool appeared to be useful for sleepiness evaluation before surgery.

Disclosure: Nothing to disclose



Before

After

## References:

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