Spina Bifida Occulta Case Series

Retrospective review of all patients referred to a multidisciplinary clinic in a tertiary pediatric surgical center over a 17 years period between April 2004 to September 2021 was performed. Inclusion criteria were <18 years old, diagnosed with CSD, with SSEP and UD done within 1 year of each other. Demographics data collected include age at presentation/at referral/at neurosurgical operation, gender, symptoms at presentation and intra-operative diagnoses. Pre-operative SSEP and UD findings were documented. Primary outcome was UD results in the group with normal and abnormal SSEP. Secondary outcome was urological and bowel function outcome in 4 groups of patients (Group A-both normal SSEP and UD, Group B- abnormal SSEP only, Group C - abnormal UD only and Group D-both abnormal SSEP and UD).

Results: A total of 45 patients were included for analysis. Mean follow up time was 118.9 months (24-216 months, SD 55.8 months). SSEP was normal in 20 patients and abnormal in 25 patients. Baseline demographics, preoperative symptoms and imaging were similar between 2 groups. Primary outcome Patients with abnormal SSEP were more likely to have abnormal UD results with a statistically significant difference (84% vs 40%, $p < 0.05$). They have a significantly higher end-fill detrusor pressure (12% vs 0%, $p < 0.05$), abnormal bladder compliance (20% vs 0%, $p < 0.05$), abnormal cystometric capacity (48% vs 10%, $p < 0.05$), poor emptying efficiency (24% vs 5%, $p < 0.05$) and sphincter incompetence (8% vs 0%, $p < 0.05$). Secondary outcome When compared to Groups A to C, patients in group D were more likely to be on anti-cholinergic (33.3% vs 4.3%, $p < 0.05$), required clean intermittent catheterization (42.9% vs 4.3%, $p < 0.05$) and had intravesical botulinum injection (19% vs 0%, $p < 0.05$). All the patients who had augmentation cystoplasty were in this group as well. Bowel function in terms of regular enema use was also statistically significantly higher in this group (33.4% $p < 0.05$).

Conclusion: Pre-operative SSEP and UD results correlate well in patients with closed spinal dysraphism. Patients with abnormal SSEP and UD preoperatively have higher risk of urological deterioration over time. Close monitoring in this group is warranted [1)]

A total of 78 patients with spina bifida occulta (30 SCM and 48 TCS due to fatty filum terminale) were included in the study. Radiological images of these patients were retrospectively evaluated. Karaaslan et al. evaluated the pelvic incidence, pelvic tilt, sacral slope, sagittal vertical axis (SVA), T1 pelvic angle, lumbar lordosis (LL), thoracic kyphosis, thoracolumbar alignment, and change in those parameters with age.

Correlation coefficients between age and LL, T1 pelvic angle, and the SVA in patients with TCS due to fatty filum terminale were statistically significant. In addition, correlation coefficients between age and LL and the SVA in patients with SCM were statistically significant. Notably, LL was increased at a statistically significant level with age in patients with TCS and SCM.

Improved knowledge of spinal balance parameters in patients with tethered cord syndrome (TCS) and split cord malformation (SCM) may be helpful in understanding the clinical course of these pathologies, and provide information regarding the success of surgery at the follow-up period [2)].

1)

Hung JW, Chow JS, Kuok MC, Lam AK, Lee JL, Yam FS, Chung KL, Wu SP, Cheung FC, Chan WK, Leung MW. Correlation of urodynamic studies and somatosensory evoked potential and their prognostic

value in children with closed spinal dysraphism. J Pediatr Urol. 2022 Dec 9:S1477-5131(22)00579-4. doi: 10.1016/j.jpurol.2022.12.004. Epub ahead of print. PMID: 36566130.
2)

Karaaslan B, Gulsuna B, Toktaş O, Borcek AO. Sagittal spinopelvic alignment in tethered cord syndrome and split cord malformation. Br J Neurosurg. 2022 Feb 8:1-6. doi: 10.1080/02688697.2022.2034741. Epub ahead of print. PMID: 35132932.