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Chiari malformation and hydrocephalus in patients with tethered cord syndrome

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Introduction: We followed a series of 60 patients operated at H.E.M. from 1999-2009 with Tethered Cord Syndrome. They came from a cohort of 152 patients followed by the Spina Bifida group of H.D.E. in Lisbon. We looked at the two main groups, Mielomeningocele (M.M.) and Lipomielomeningocele (L.M.M.) and verified the percentages that had Arnold Chiari (A.C.) II and the percentages that required Shunts.

Material and Methods: The 60 patients were diagnosed based on their MRI and clinical observation. 41 had MM, 15 LMM and 4 had true occult spinal disrrafism. Ages from 1-25 years (average 6,4). The main complaints were: motor, genitourinary, worsening of orthopedic deformities and pain. Surgery for hydrocephalus was only performed when there was clinical and imagiological evidence of active hydrocephalus.

Results: Of the 41 patients with MM, 18 (43%) required a shunt, 32 (78%) had an AC II and 9 (22%) did not. Of the 32 MM with AC II, 13 (41%) needed a shunt and of the 9 without AC II 5 (55%) needed a shunt. Of the 15 patients with LMM 8 (53%) required a shunt and 8 (53%) had AC II. Of The 8 with LMM and AC II, 6 (75%) required a shunt, of the 7 LMM without AC II 2(29%) required a shunt.

Conclusion: AC II is very frequent in patients with Tethered Cord Syndrome and MM and LMM. However the need for shunt according to our results is not as high as the literature tells us. Since the complications of a Shunt surgery are frequent and higher in this group of patients we should be more criterious on the need for the placement of a Shunt.