

Early versus late surgical treatment for infantile esotropia

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Purpose: To report the long term outcomes of early versus late surgical treatment for infantile esotropia in a hospital based cohort.

Methods: The medical records of patients who were diagnosed with infantile esotropia and underwent bimedial recession surgery by a single surgeon through 2002 to 2014 with a minimum follow up of 2 years were retrospectively reviewed. Included subjects were divided into two groups with regard to timing of initial surgery as early (<24 months) and late (>36 months) groups. Postoperative outcomes were analyzed and compared.

Results: A total of eighty-six patients (40 females) diagnosed with infantile esotropia at a median age of 10.48 months were included in the study. Follow up ranged from 25 to 191 months (median: 52.3 months). The mean preoperative deviation was 51.2 prism diopters (Range: 30 – 90). There were 59 patients in the early surgery and 27 patients in the late surgery group. Bimedial recessions ranging from 4.5 mm to 6.5 mm were performed at a median age of 13.2 months in the early surgery group and 40.0 months in the late surgery group. At the end of follow up, surgical alignment within 10 prism diopters was achieved in 67.8 % of the early and 62.9 % of the late surgery group (p=0.66). In the early group, % 30 of the patients with a documented evaluation of stereoacuity had achieved some level of stereopsis (≤ 2000 seconds of arc) while in the late group % 21 had achieved this outcome (p= 0.47). Stereopsis better than 400 seconds of arc was present in 15% of the early and 5% of the late surgery group (p= 0.28). Horizontal re-operations were required in 25.5 % of the patients in the early surgery group and in 11.1 % of the patients in the late surgery group (p=0.13).

Conclusions: In this hospital based cohort of infantile esotropia patients, similar motor and sensory outcomes were found in early and late surgical groups. Although not statistically significant, achievement of some level of stereopsis and additional horizontal reoperations were more frequent in the early surgery group. Patients undergoing early surgery might benefit from stereopsis; however they should be informed about the requirement of additional surgeries.

Binocular function years after surgery

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Purpose: To demonstrate that in surgically treated infantile esotropia (IE) patients, with no previous signs of binocularity, it is possible after a very long therapy with medical and orthoptical regular follow up, to achieve functional rehabilitation well above the conventionally accepted age for sensorial recovery.

Methods: In a retrospective observational cohort study, 45 patients with IE and long-standing esotropia, aged between 11 to 41 years, were enrolled. They were operated with at least 6 years of follow-up and obtained binocularity above 9 years of age. Case notes were reviewed and various parameters including final outcomes were evaluated.

Results: Amblyopia was treated to normal isoacuity. The majority reached a stage of fusion in real space (62.2%), fusion and stereopsis was found in 14 patients (31.1% and only 3 remained with simultaneous perception (6.7%). The time lag between the first appointment and first signs of binocularity varied between 5-16 years and follow-up between 6-36 years.

Conclusions: Cases that might otherwise be seen as of psycho-social outcome may achieve a functional rehabilitation, even after a follow-up as long as 16 years, something that is relevant in a disease like strabismus that affects 2-5 % of the population in Europe and the USA. This can be far-reaching in consequences not only for patients but for their social role and integration, thus for quality of life. It also reinforces the notion of brain and visual system plasticity well above the accepted (7 years of age) period of recovery.