Strabismus in patients with cortical visual impairment: outcomes of surgery and observations of spontaneous resolution.

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BACKGROUND

- Cortical visual impairment (CVI) is the leading cause of uncertainty vision loss in children in the US with a concurrent rate of strabismus as high as 73%1,2.
- Few guidelines exist as to management of strabismus in patients with CVI, and the rate of surgical success in these patients is uncertain.

METHODS

- Chart review was performed of all patients seen by author MSB between 10/2003 and 10/2013 with a diagnosis of both CVI and any type of strabismus. Four groups were identified. Exclusions were made for patients undergoing strabismus surgery, patients with strabismus before birth, and patients with strabismus who did not show any improvement in visual behavior and strabismus was observed without undergoing surgery.

RESULTS

- A total of 70 patients were included in the chart review after exclusions.
- It is the standard practice of the senior author (MSB) to observe children with CVI and strabismus who display poor visual behavior. If significant improvement in vision is observed, strabismus surgery is offered to those that have a persistent stable angle of strabismus regardless of age. In some of these patients, spontaneous resolution of strabismus occurs as vision improves and no surgery is required.
- Number of patients that underwent spontaneous resolution of their strabismus vs. persistent strabismus without improvement in their vision are shown in figure 1. Results of patients undergoing surgery are also shown in figure 1. Patients were placed in outcome groups 1-4 as shown.
- A statistically significant difference in age at presentation was observed between the 4 groups. No other statistically significant differences in age or the initial size of strabismic deviation were observed (table 1).
- While the age at spontaneous resolution compared to the age at surgery did not meet the threshold for statistical difference, the number of patients undergoing spontaneous resolution is relatively small, so there may indeed be a difference that did not reach significance due to small sample size.
- Numbers of patients with esotropia vs. exotropia were compared (table 2). No statistically significant differences between groups 1-4 were observed.
- Underlying cause of CVI is detailed in table 3. No statistically significant differences were observed between outcome groups 1-4.

DISCUSSION

- A considerable minority (16%) of patients with CVI and strabismus are observed to have spontaneous resolution of their strabismus. It is still uncertain if this group would be larger if a longer period of observation was undertaken before strabismus surgery.
- Of the patients who had strabismus surgery, 56% maintained an alignment of ≤10Δ with only 16% recurring with an angle of >25Δ. In the properly selected patient with CVI that displays improving visual behavior and a stable angle of strabismus, it is our opinion that strabismus surgery should be considered.

REFERENCES