Our first experience of treating anisometropic and strabismic amblyopia using liquid crystal glasses

Amblyopia is actually a vision development disorder. This condition mainly happened at the age of early childhood. Several conditions like refractive errors and strabismus trigger amblyopia. In the treatment of amblyopia, first, these conditions should be corrected.

Patching the dominant eye thus make the other eye to work is the corrective measure for amblyopia. It can be done by close the eye with a sticker or something can fit in the eyeglasses. Since, the group undergo this method is children, it looks like very difficult to maintain the eyes patched for a long time. The traditional patching technique is actually unfair for children.
Purpose

The purpose of our study was to evaluate the effectiveness of liquid crystal glasses like a new alternative technique for the patching in the treatment of anisometropic and strabismic amblyopia.
Methods

25 patients were treated in anisometropic and 12 in a strabismic group. The mean patients’ age was 3.62±1.26 years. Amblyopia was unilateral in all cases. The central fixation of the amblyopic eye was diagnosed in all patients.

Glasses with liquid crystal lenses were used for treatment. Depending on the degree of amblyopia, the lens opposite the dominant eye was darkened by 20, 30 or 40 seconds for a period of 60 seconds.
Methods

The design of the glasses makes it possible to install optimal optical lenses.

For patients with strabismus, elastic Fresnel prisms were additionally applied to optical lenses.

The time of wearing glasses was at least 2 hours a day, the treatment period lasted from 2 to 6 months.
Results

Positive pleoptic results were achieved in all patients. In anisometropic group, average monthly increase of visual acuity was 0.9±0.2 line, in strabismic group – 0.8±0.2 line. During the whole period of treatment and observations, visual acuity increased by 3.6±1.4 line and 2.9±1.3 line, respectively.

Functional eye equality was achieved in 26 of 37 patients (70.3%).

3 patients in the anisometropic and 2 in the strabismic group categorically refused from traditional occlusion before applying this method.
Conclusions

Liquid crystal glasses are significantly effective in the treatment of anisometropic and strabismic amblyopia.

Glasses with liquid crystal lenses make it possible to exclude the negative subjective factor of the child's perception of traditional occlusion.