

DIFFERENT USES OF AN ELECTRONIC GOLDMANN

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Introduction

Two years ago, we received at our vision function test laboratory a MonCvONE perimeter, manufactured by Metrovision, that we later called "the new electronic Goldmann".

After learning how the system worked, we realized that we could go further in the visual exploration than the machine was expected to, because of its simplicity of use, (interactivity with the computer mouse) and its high definition camera allowing, on demand, a synchronized video recording of both eyes during the exam.



Purpose

Our purpose was to evaluate different ways of using the electronic Goldmann according to what Doctors and Orthoptists would like to have in the patient medical records and what could help them for decision making.

We focused our research on 3 main purposes :

- attentional visual field : for the evaluation of young children (starting at 2 years of age) or hard to examine and/or simulating patients
- the analysis of eyes deviation for the cardinal positions of gaze,
- the analysis of ptosis for surgical review.

Methods

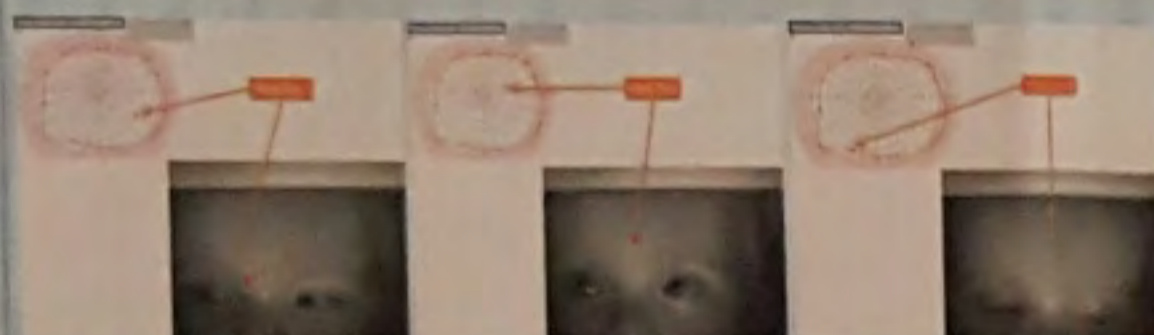
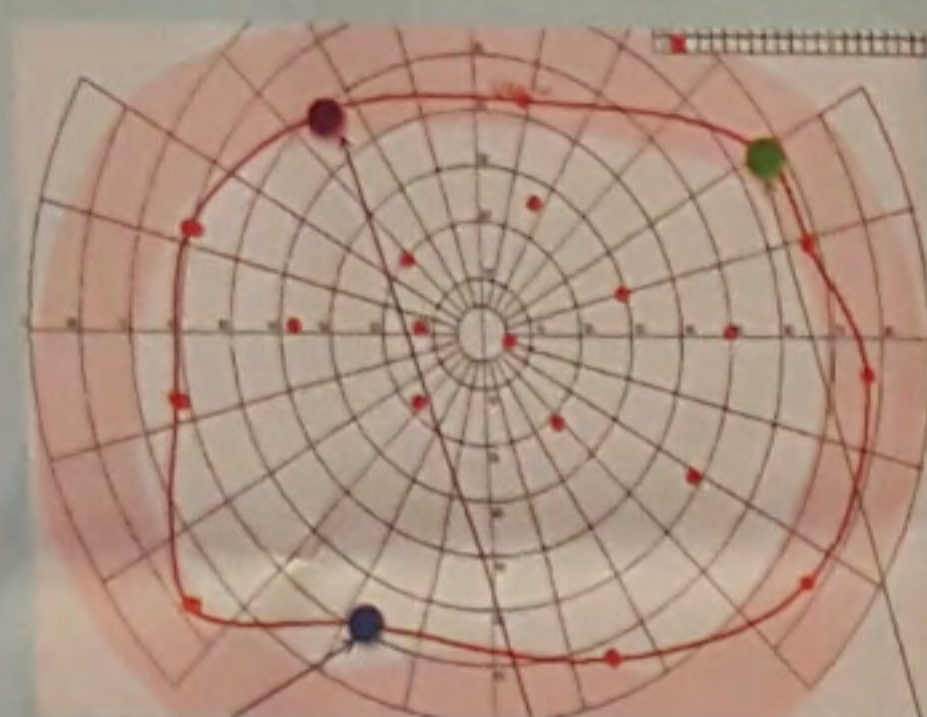
Patients are installed as for a classical visual field test and are filmed during the examination :

- For attentional visual field, as soon as the patient localizes the stimulus spot in his visual field (attraction eye movement seen on the live video feed) the operator validates the position on the map. The saved video can be analyzed afterwards.
- For eyes deviation and ptosis analysis, patient has to look at different spot positions, as defined in our protocol. Video and images are analyzed afterwards.

These examinations have been performed, over the last two years in our laboratory, on a daily basis.

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Attentional Visual field



2 yo -> Glioma

BACKGROUND :
 Visual development delay, BCVA impossible to take



visual attraction > delay < subjective response

Typical Spiral visual field of a simulator

Author Disclosure Block
 T.BIZEAU : None

Analysis of eyes deviation



BACKGROUND : L. Ines, 8 yo -> Duane type I
 increasing delay,
 Genetic : micro deletion on chromosome 1
 BCVA not more than 0,4 RE and 0,5 LE. LogMar



Conclusion

- **Attentional Visual field :**
 Computerized confrontation perimetry can improve the evaluation of the visual field in young infants by providing an objective recording of the examination process in synchrony with the video.

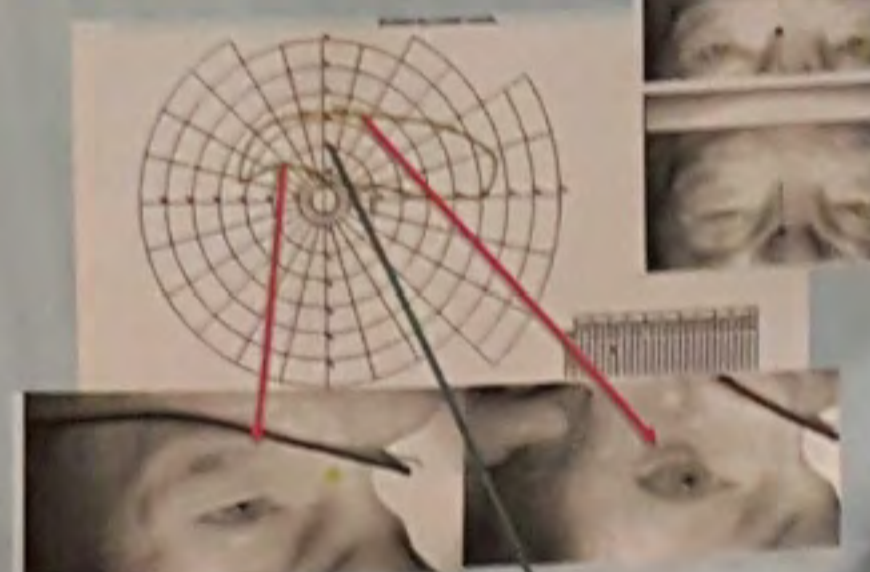
In a large percentage of clinical cases, the classic clues used to detect eye movements (movements of the corneal reflection and of the pupil) are not reliable when the tests are presented at large eccentricities. Experienced operators are then needed for the interpretation of orientation responses and also to interact with the young subjects and maintain their cooperation during the exam.

- **Eyes deviation analysis :**
 This examination allow us to evaluate deviations of the eyes before and after surgery. One remark : the corneal reflection is not in the main visual axis.

- **Ptosis analysis :**
 Objective data are obtained, before and after surgery, by calculating the gain of the visual field area.

=> The computerized Goldmann MonCvONE is a major asset in our practice for screening and monitoring young patients or hardly compliant patients. And we have developed several new application improvements that we use everyday as a "Swiss Army knife" for visual exploration.

Analysis of ptosis



A. Jacques, 73 yo -> Ptosis surgical review
 BACKGROUND :
 BCVA : 0,15 RE and 0,3 LE
 Cataract RLE

Gain of visual field area



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