CAN A HANDHELD NON-MYDRIATRIC FUNDUS CAMERA REPLACE TRADITIONAL DILATED FUNDUS EXAMINATION IN PAEDIATRIC OPHTHALMOLOGY OUTPATIENT SETTING?

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https://us04web.zoom.us/j/71178033986?pwd=RWNuL2tvMmFoMlNQR3dPQnB0NFU4Zz09

INTRODUCTION:

- All children seen in paediatric ophthalmology outpatient appointments with suspected amblyopia or reduced vision require retinal examination to exclude organic disease as a cause.
- Traditionally this involves dilated fundal examination with slit-lamp bio-microscopy which may be challenging as well as time consuming in this patient population.

OBJECTIVE:

Our study evaluated the feasibility for non-mydriatic fundus photography with a handheld fundus camera to replace dilated fundus examination to screen for retinal pathology in children.

FIGURE 1 – HANDHELD FUNDUS CAMERA(AURORA, OPTOMED)

METHOD:

- 80 eyes of 40 consecutive children presenting to a paediatric ophthalmology outpatient appointment underwent non-mydriatic fundus photography with a handheld fundus camera (Aurora, Optomed).
- Recorded parameters included age, refractive error, diagnosis, pathology identified using non-mydriatic fundus photography and pathology identified with mydriatic slit-lamp bio-microscopy.

RESULTS:

- 43 children had fundus photos taken, ranging 9months – 17 years of age.
- Fundus photography was successfully undertaken in 93% of children.
- No pathology was identified with dilated fundal examination that had not been identified with non-mydriatic fundus photography.
- 33% had manifest strabismus, 13% had amblyopia, 15% had underlying conditions which could have affected compliance (e.g Learning difficulties, behavioural problems, autism, etc)
- Abnormalities detected on the camera included chorio-retinal atrophy, chorio-retinal coloboma, swollen discs and macular scars.

Refractive Error	Number of eyes
>+5 dioptres	6
+2.5 to +5 dioptres	12
>0 to +2.5 dioptres	22
0 to -2.5 dioptres:	33
-2.5 to -5 dioptres	6
>-5 dioptres	1

FIGURE 2 – Refractive error of the children. Higher refractive error is associated with poor fixation.

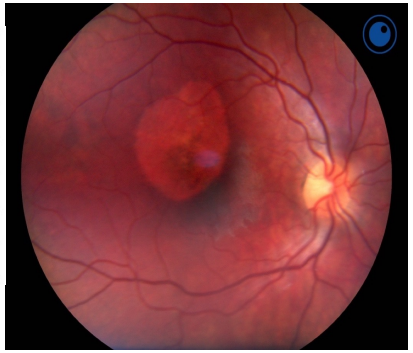

FIGURE 3 – Chorio-retinal atrophy

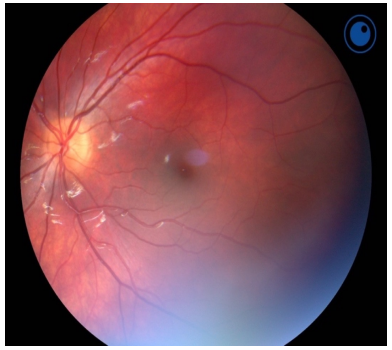

FIGURE 4 - Disc + Macula Clear

CONCLUSION:

Non-mydriatic, handheld fundus photography offers a safe alternative to traditional dilated fundus examination with slit-lamp bio-microscopy which is subjectively easier to undertake. This mode of examination is particularly suited to the paediatric population whose pupil size is usually larger than their adult counterparts.