Gloucestershire Hospitals NHS Foundation Trust

Can we reduce the need for outpatient appointments with paediatric ophthalmologists by using a non-mydriatic handheld fundus camera?

Joshua Au Yeung,[1] Sunil Mamtora,[1] Chanelle Smith,[1] Neil Dave,[1] Ronak Patel,[1] Sachin Shah[1] John Ferris[1]
1Cheltenham General Hospital

BACKGROUND AND AIMS

The assessment of a child with suspected amblyopia includes dilated fundus examination by an Ophthalmologist following review by an orthoptist and optometrist.

There is a considerable nationwide shortage of Paediatric Ophthalmologists and a subsequent limitation in appointment availability. We evaluated the potential utility of a handheld fundus camera (Optomed Aurora IQ, Oulu, Finland) to replace the need for dilated fundus examination.



FIGURE 1 – Aurora IQ Handhend Fudnus Camera, Optomed

METHODS

Forty-three children attending for their initial visit with suspected amblyopia participated in the study. Non-mydriatic fundus photography was attempted prior to their appointment in addition to the standard of care.

Recorded parameters included age, refractive error, diagnosis, pathology identified using non-mydriatic fundus photography and pathology identified with dilated fundus examination. A subjective assessment of the difficulty of image capture using the handheld fundus camera and dilated fundus examination was recorded for each child using a Lickert scale (1-5 with 1 representing very easy and 5 representing very difficult.

RESULTS

Fundus photography was successfully undertaken in 80 eyes from 40 children whose age ranged between 2 months and 13 years with a median of 4 years.

Photography identified 9 children with posterior segment pathology with a sensitivity of 100%. There were no instances of pathology being identified with dilated fundus examination that was not detected with non-mydriatic handheld fundus photography.

The mean difficulty of assessment with the handheld camera was 4.2 compared to 3.4 with conventional dilated fundus examination.

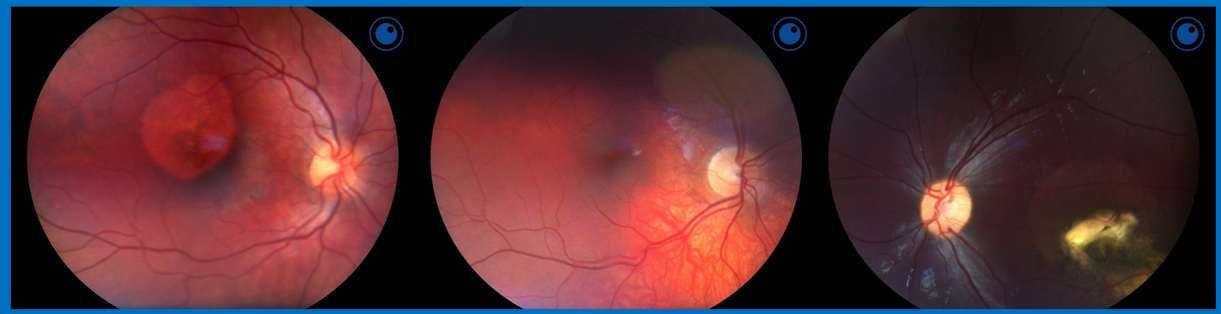


FIGURE 2 – Sample fundus photographs captured during our study demonstrating organic retinal pathology as a cause of reduced vision

CONCLUSIONS

Non-mydriatic handheld fundus photography is a useful addition to the armamentarium of diagnostic equipment for examining children.