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Using Video Indirect Ophthalmoscopy to Demonstrate Retinopathy of Prematurity Findings

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Article Summary

Retinopathy of prematurity (ROP) is a significant cause of childhood blindness around the world.^{1,2} Because blindness from ROP can be reduced by appropriate screening and treatment, it is important that ophthalmologists examining at-risk infants are skilled in the nuances of ROP diagnosis, as defined by the International Classification of Retinopathy of Prematurity Revisited.³

Our goal in sharing these images is to demonstrate that video indirect ophthalmoscopy can be a useful tool to educate trainees and inexperienced ROP screeners on nuances in ROP screening. The Vantage Plus LED Digital Binocular Indirect Ophthalmoscope system (Keeler Instruments Inc, Broomall, PA) is a binocular indirect ophthalmoscope with an integrated camera that can capture and store still and/or dynamic digital images during the examination. In a previous study,⁴ we found that the Keeler system could capture still images of sufficient quality to show the presence of pre-plus or plus disease. We have also found that an ophthalmologist skilled in ROP screening could accurately grade the zone, stage, and presence of pre-plus or plus disease when grading videos captured by the Keeler system (personal, unpublished data). Thus we demonstrate here how the use of digital retinal video images obtained during routine ROP rounds using the Keeler system and a 28 D condensing lens can be a valuable tool to show characteristic findings of ROP and teach aspiring ROP screeners the nuances of ROP diagnosis.

Supplementary Material

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References

1. Gilbert C. Retinopathy of prematurity: a global perspective of the epidemics, population of babies at risk and implications for control. *Early Hum Dev.* 2008; 84:77–82. [PubMed: 18234457]
2. Kong L, Fry M, Al-Samarraie M, Gilbert C, Steinkuller PG. An update on progress and the changing epidemiology of causes of childhood blindness worldwide. *J AAPOS.* 2012; 16:501–507. [PubMed: 23237744]
3. The International Classification of Retinopathy of Prematurity Revisited. *Arch Ophthalmol.* 2005; 123:991–999. [PubMed: 16009843]
4. Prakalapakorn SG, Freedman SF, Wallace DK. Evaluation of an indirect ophthalmoscopy digital photographic system as a retinopathy of prematurity screening tool. *J AAPOS.* 2014; 18:36–41. [PubMed: 24568980]