ICG-assisted endoscopic transorbital resection of orbital apex cavernous hemangioma – First reported case

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The application of Indocyanine green (ICG) in medical field is common. It is used in ophthalmology including assessment of the retinal and choroidal circulation. Posterior orbital tumor is very challenging to orbital surgeon due to the poor surgical access, limited visualization and close proximity to important neurovascular structure. This is a case report to illustrate the use of indocyanine green fluorescence integrating with endoscopic transorbital technique to facilitate the removal of posterior orbital pathology.
METHODS

- A 64 years old Chinese woman was diagnosed with orbital cavernous malformation of right eye, causing compressive optic neuropathy.
- Presented with painless blurry vision of right eye.
- Physical examination demonstrated a superior and infra temporal visual field defect of right eye with right optic disc swelling.
- CT showed 1 cm oval lesion posterior intraconal space near orbital apex.
- Features suggested of orbital cavernous malformation.
- Right endoscopic transorbital excision was performed with ICG-assisted endoscopic technique, jointly operated by oculoplastic surgeon and endoscopic skull base neurosurgeon.
FINDINGS

- The use of ICG during operation resulted in delayed enhancement of the lesion at around 1 minute 30 seconds
- Surrounding recti muscles showed rapid enhancement at around 30 seconds
- The incision of periorbita was guided by ICG enhancement
- Total excision of tumor was achieved. Patient enjoyed good visual recovery and cosmetic results
Preop scan

Postop scan
CONCLUSION

- This case report demonstrated good result of the use ICG integrated endoscopic transorbital technique for orbital cavernous malformation successfully.
- To our knowledge, this is the first case report of this integrating technique in management of orbital cavernous malformation.