Has Implementation of Optical Coherence Tomography Affected Utilization of Fluorescein Angiography?

Timothy J. Bennett, CRA, FOPS
Penn State Ophthalmology
P O Box 850, HU-19
Hershey, PA 17033 USA
Email: tjbennett@psu.edu

Background: Optical coherence tomography (OCT) is a relatively new imaging procedure that is useful in the diagnosis of several retinal disorders that have traditionally been imaged with intravenous fluorescein angiography (IVFA). For certain retinal conditions, OCT is now the diagnostic procedure of choice. Compared to IVFA, OCT is less expensive, less invasive, faster, easier to perform, and well tolerated. Anecdotal reports suggest a decline in the utilization of IVFA since the widespread acceptance of OCT.

Methods: Imaging procedure logs from the Penn State Department of Ophthalmology (PSHMC) were reviewed to determine frequency of IVFA use before and after introduction of OCT. Similar census data was solicited from practices across the US. A total of six centers provided census data. Due to a variety of accounting methods as well as different dates of introduction of OCT among the centers, census data prior to introduction of OCT were inconsistent and can only be viewed as anecdotal.

Results: Since the addition of OCT at PSHMC in 2003, the number of IVFA procedures has declined, and OCT is now the most frequently used imaging procedure. Census data showed an 11% drop in IVFA use over the previous year and a 34% drop over two years at PSHMC. Comparing the 27-month period since adding OCT, with the 27-month period prior to OCT, an overall drop in IVFA use of 16% was recorded. The drop in mean monthly IVFA use was statistically significant (p = .01). The combined data from all participating centers showed a total decrease of 9% in IVFA use since the addition of OCT. Four of six centers recorded a decrease in IVFA use, while one center showed an 8% increase and another a 15% increase. The combined drop from the four centers reporting a decline was 15%. The largest drop in IVFA use was 54%. All centers reported an increase in OCT use.

Conclusions: These data indicate a trend toward increased use of OCT and a decrease in IVFA use. The trend is likely to continue as treatment of diabetic macular edema and ARMD shift from traditional laser photocoagulation (requiring IVFA), to medical management with intraocular corticosteroids, or other medications, which can be monitored with OCT. The popularity of OCT has also resulted in a need for education in both performing OCT, and interpretation of OCT results for clinicians.