

GERTRUDE D. PYRON AWARD LECTURE
Evolving Concepts in Pharmacologic Vitreolysis

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The attachment of the cortical vitreous to the inner limiting lamina of the retinal surface plays an important role in the pathophysiology of many vitreoretinal diseases, such as idiopathic macular hole, vitreomacular traction syndrome, penetrating ocular trauma and proliferative diabetic retinopathy. Despite continued improvement in techniques and instrumentation, achieving an atraumatic cleavage of the vitreoretinal interface remains difficult, particularly in pediatric patients or when the retina is detached. The desire for a less traumatic approach to vitreoretinal separation in the management of vitreoretinal diseases has led to the investigation of several methods of "pharmacological vitreolysis," a term coined by J. Sebag that refers to the use of agents that alter the molecular organization of the vitreous in order to reduce or eliminate its role in disease. This presentation focuses on reviewing previous efforts to find suitable pharmacologic agents to achieve vitreolysis as well as on presenting the design and results of recent studies using both enzymatic and non-enzymatic methods to alter the structure of the vitreous to effect vitreoretinal separation.