Retinal Vascular Occlusive Diseases
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Retinal Vascular Occlusive Diseases

Retinal vascular occlusive disease can involve both retinal veins and arteries. Retinal vein occlusion (RVO) is a common form of retinal vascular disease that can lead to vision loss. It is the second most common retinal vascular disease with diabetic retinopathy being the first. RVO classification is based on obstruction location. When the obstruction occurs at or adjacent to the optic nerve, it is referred as central retinal vein occlusion (CRVO). When the obstruction occurs on the venous branch, it is referred as branch retinal vein occlusion (BRVO). Retinal artery occlusion (RAO) is caused by disruption of perfusion of any retinal artery leading retinal ischemia. Embolus formation is the most common etiology of the occlusion. Depending on the disruption location, it can also be classified as central retinal artery occlusion (CRAO) or branch retinal artery occlusion (BRAO). Both RVO and RAO are strongly associated with systemic pathologies and comprehensive systemic workups are indicated. The lecture highlights the method for making the proper diagnosis, the management and follow-up schedule of RVO and RAO. Pertinent clinical trials will be discussed along with their clinical significance.

Course Objectives

1. Enable accurate diagnosis of CRVO, BRVO, CRAO, BRAO.

2. Review the work-up protocol and management strategy when presented with vascular occlusive diseases.

3. Understand referral criteria and auxiliary testing for RVD patients.

Summary/Outline

1. Retinal Artery Occlusion
   a. Anatomy
      i. Systemic arterial circulation
      ii. Ocular arterial system
   b. Sources of Embolus
      i. Thrombus
      ii. Cholesterol
      iii. Calcific
      iv. Fat
      v. Air
      vi. Septic/inflammatory
vii. Tissue
viii. Foreign body
ix. Amniotic Fluid
x. Compression
xi. Vasospastic
xii. GCA
c. CRAO
   i. Pathophysiology
   ii. Patient Symptoms
   iii. Clinical Presentation
   iv. Ocular Management
      1. Methods of IOP reduction
         a. Manually – ocular massage
         b. Pharmacology
         c. Surgically - parecentesis
      2. Follow up management
   v. Giant Cell Arteritis (GCA) induced CRAO – diagnosis and management
d. BRAO
   i. Pathophysiology
   ii. Patient Symptoms
   iii. Clinical Presentation
   iv. Ocular management and follow up management
e. Systemic Management of RAO
   i. Laboratory tests
   ii. Morbidity and mortality statistics

II. Retinal Vein Occlusion
a. CRVO
   i. Pathophysiology
   ii. Patient Symptoms
   iii. Clinical Presentation
      1. Ischemic
      2. Non-ischemic
   iv. Differential diagnosis
   v. Systemic and ocular associations
      1. Hypertension
      2. Hyperlipidemia
      3. Smoking History
      4. Abnormal rheological factors
      5. Chronic open-angle glaucoma
      6. Diabetic Mellitus
      7. Atherosclerotic changes
      8. Increased body Mass
      9. OHTN
   vi. Bilateral and/or in young patient – special consideration
b. BRVO
   i. Pathophysiology
   ii. Patient Symptoms
   iii. Clinical Presentation
       1. Ischemic
       2. Non-ischemic
   iv. Systemic associates

c. Ocular treatments of RVO
   i. Standard of Care in the past
      1. CRVOS
      2. BRVOS
   ii. Newest clinical trials and their clinical indications
      1. SCORE
      2. CRUISE
      3. BRAVO
      4. CATT
   iii. Others
      1. Ozurdex, (Reticert, Illuvien, Medidur)
      2. Bevacizumab