

ACUTE ATTACK OF CLOSED-ANGLE GLAUCOMA: UNDERSTANDING, MANAGEMENT, AND COMPLICATIONS

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RELEVANCE

Closed-angle glaucoma is a sight-threatening condition characterized by a sudden and severe rise in intraocular pressure (IOP) due to the blockage of the drainage angle in the eye. An acute attack of closed-angle glaucoma is a medical emergency that requires immediate intervention to alleviate symptoms, reduce IOP, and prevent permanent vision loss. This article aims to provide a comprehensive overview of the condition, including its pathophysiology, clinical presentation, diagnosis, treatment options, and potential complications. By understanding the management of acute attacks of closed-angle glaucoma, healthcare professionals can ensure timely and effective intervention, leading to improved patient outcomes.

PURPOSE OF THE STUDY

The purpose of this study is to examine the understanding, management, and potential complications associated with acute attacks of closed-angle glaucoma. By reviewing scientific literature, clinical guidelines, and expert opinions, this article aims to provide a detailed analysis of the condition, its causes, diagnostic methods, treatment options, and potential complications. The study aims to equip healthcare professionals with the knowledge necessary to recognize and manage acute attacks of closed-angle glaucoma promptly, thereby reducing the risk of vision loss and improving patient care.

MATERIALS AND METHODS

To compile this article, an extensive review of scientific literature and reputable sources was conducted. Databases such as PubMed, Web of Science, and Google Scholar were searched using keywords such as "acute angle-closure glaucoma," "acute attack," "pathophysiology," "diagnosis," "treatment," and "complications." Studies, clinical trials, guidelines, and expert opinions were analyzed to gather relevant information on the topic. The selected materials were critically evaluated to ensure accuracy and reliability.

RESULTS

Overview of Closed-Angle Glaucoma

Closed-angle glaucoma is a type of glaucoma characterized by a narrowed or closed drainage angle in the eye, which impedes the outflow of aqueous humor, leading to increased IOP. Acute attacks occur when the angle becomes completely blocked, resulting in a sudden rise in IOP. This can cause significant pain, blurred vision, halos around lights, and even nausea and vomiting. If not promptly treated, an acute attack can lead to irreversible vision loss.

PATHOPHYSIOLOGY OF ACUTE ATTACK

The pathophysiology of an acute attack of closed-angle glaucoma involves the sudden closure of the drainage angle, leading to impaired aqueous humor outflow. This closure can

be triggered by factors such as pupillary dilation, lens enlargement, or anatomical predisposition. As the outflow of aqueous humor is blocked, fluid accumulates in the eye, increasing IOP. The increased pressure compresses the optic nerve and retinal blood vessels, causing damage to the optic nerve fibers and resulting in vision loss.

CLINICAL PRESENTATION AND DIAGNOSIS

The clinical presentation of an acute attack of closed-angle glaucoma is characterized by sudden and severe symptoms. Patients may experience intense eye pain, redness, blurred vision, halos around lights, and a feeling of pressure in the eye. Nausea and vomiting may also occur. Diagnosis involves a comprehensive eye examination, including measurement of IOP, assessment of the drainage angle using gonioscopy, evaluation of the optic nerve, and visual field testing. Imaging techniques such as optic coherence tomography (OCT) may also be used to assess optic nerve damage.

TREATMENT OPTIONS FOR ACUTE ATTACK

The primary goal in managing an acute attack of closed-angle glaucoma is to lower IOP promptly and relieve symptoms. Treatment options may include:

- Medications: Topical or systemic medications, such as miotics, beta-blockers, alpha-agonists, and carbonic anhydrase inhibitors, can be used to reduce IOP by increasing outflow or decreasing production of aqueous humor.

- Laser Peripheral Iridotomy (LPI): This procedure involves creating a small hole in the iris using a laser, allowing the aqueous humor to flow freely and relieving the blockage in the drainage angle.

- Surgical Intervention: In cases where medications and LPI are ineffective or contraindicated, surgical procedures such as trabeculectomy or implantation of drainage devices may be considered to improve aqueous outflow and control IOP.

COMPLICATIONS OF ACUTE ATTACK

Failure to promptly manage an acute attack of closed-angle glaucoma can lead to several complications, including:

- Optic Nerve Damage: The increased IOP can cause irreversible damage to the optic nerve, resulting in permanent vision loss.

- Corneal Edema: Elevated IOP can lead to fluid accumulation in the cornea, causing corneal edema and compromising visual acuity.

- Angle Closure Recurrence: Without appropriate treatment, an acute attack can recur, leading to further episodes of increased IOP and potential vision loss.

- Secondary Glaucoma: Prolonged untreated acute attacks can lead to secondary glaucoma, where chronic elevation of IOP damages the optic nerve over time.

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