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## Narrow angle glaucoma treatment guidelines

Published 30 June 2004 Patients with narrow angles can have different presentations, ranging from acute angle-closure attack to anatomical narrow angles without evidence of glaucoma, making management a challenge. In this paper, we will describe our approach to these, including the discussion of narrow angle glaucoma and the closing of the angle and guidance of the iridotomy technique. The term narrow angle refers to an anatomical state in which the irido-terabular cover is caused by any number of factors. The incidence of narrow angle glaucoma in the general population is about 1%, which increases in Inuit Eskimo and East Asia. It is important to note that not every narrow angle can be terminated. This makes history and exams vital in diagnosing patients who are at greatest risk for developing angle-closing glaucoma. The risk factors for primary angle closure glaucoma are:

- Increasing lens thickness;
- Ethnicity (as one, Inuit Eskimo, East Asia). There are different mechanisms for acute glaucoma closing angles, but we will discuss more common mechanisms: the block of the children and the glaucoma caused by the lens. Acute glaucoma is marked by rapid increase in intraocular pressure. A patient with acute angle closure will usually be present with severe pain, tearing, photophobia, blurred vision, velos around lights, corneal edema, a fixed middle dilated pupil and intraocular pressure of 50 to 70 mmHg. Glaucoma on the anterior lens is usually possible in acute attacks. The doctor's initial response should be to assess the angle with gonioscopy. If this is impossible due to the existence of corneal edema, the next step should be to try to break down the attack by reducing IOP with a suppressing aqueous drug (beta-blocker, or carbonic anhydrase inhibitor) and osmotic agents such as glycerin (smoglin) if the patient is not diabetic, or mannitol IV if the patient has no cardiovascular contraindications. Because glaucoma closing angles often occur with lily in a mid-dilated position, using 2% pilocarpine may help the pupil resubars and break down the attack; Use caution with a 4% formula, because it can attack the lens-iris aperture to rotate forward and intensify the closing angle. If your doctor is unable to break the attack and lower the IOP medically, toasting pressure on the cornea with a gonioscopy lens (Zeiss or Posner 4 mirror lens) can be effective in some cases. If these procedures are not helpful, some doctors advocate making anterior paracentesis of the room. This approach does not cure the problem permanently, but it can be effective enough for drugs like pilocarpine, since IOP reduction drugs tend to work better when IOP is below 30 mmHg. However, the risk of paracentesis is that the doctor can flatten the anterior chamber. To prevent this complication, we recommend using a 30 ga. needle on a non-submerged TB syringe. Direct the tip of the needle either to 6:00 or 12:00 To avoid touching the lens. Once in the anterior chamber, the doctor can control the amount of water that is released. If the IOP is lower and the corneal edema heals, the clinical expert should examine the angle gonioscopically again to determine whether there is only appesial closure or if there is an environmental anterior cycchi formation (PAS). If the angle is still open (meaning, with minimal PAS), the surgeon can perform a laser iridotom. But if the narrow angle reflects a longstanding situation, and there are wide areas of PAS formation, an iridotom may solve the problem. In these cases, your doctor may need to consider glaucoma treatment surgery. It is also important to evaluate peer eyes, since it is at risk for the development of angle-closing glaucoma. In most cases, the peer will also have a narrow angle, often prudent to perform a preventive peripheral iridotomy in the peer's eye to prevent potential attacks in the future. If the partner has a deep angle, then the patient should be evaluated for a non-ocular block mechanism of glaucoma. Angle closure attack can also be rained down by indescred cataracts. As cataracts get bigger, the angle can become distinctly narrow, and some surgeons feel that removing the lens may deepen the anterior chamber deep enough and avoid peripheral erythodotomy. Although lens removal is not for any patient, there are cases where narrow angles are a facomorph component where the lens pushes up in the lily. Cataract surgery can be a viable option in these patients. Intermittent angle closures are also patients with intermittent episodes of angle closure that settle between attacks. Over the years, these attacks may or may not cause symptoms such as headaches, eye pain or occasional velos around the lights. Over time, these episodes lead to PAS, which can cause permanent height of IOP (chronic glaucoma angle closure). A patient with intermittent angle closure glaucoma can be a challenge for diagnosis as it may have a normal IOP between episodes. Since frequent symptoms will settle between attacks, and may not exist during the exam, the doctor may need to ask the patient about these symptoms to diagnose intermittent angle closures. Iridotomy is a prognosis guaranteed for peer eyes in acute attacks. In the classic patient closing the intermittent angle, attacks usually occur when the pupil is in a dilated middle state, which can occur early in the morning, late at night, after entering dimly dim areas and in emotional or stressful situations. The middle dilated state can also be induced by over-the-counter cold drugs containing epinephrine-like derivatives. These drugs dilute and keep the anestheses long enough for the mechanism of blocking the escape to hold. Also a prescription drug for seizures, tapiramate (Topamax, Ortho-McNeil) can cause angle closure glaucoma even in patients with primary open-angle configuration. what if A positive response about the history of each of these triggers, continuing to grade Van Herick from the depth of the peripheral anterior chamber in the slot lamp. This is a quick way to measure the width of the angle, which involves bringing the cleft beam at a 60 degree angle onto the anterior-only cornea to limbus. The clinical specialist estimates the depth of the anterior chamber between peripheral lily and corneal endothelium and compares it with the overall thickness of the cornea. Here's a guide to Van Herick's findings:
- Grade 0 is used to describe the side contact of the iridokurnial.
- Primarily the space between lily and corneal endothelium is less than a quarter of the thickness of the cornea.
- Secondly, space is between a quarter and half the thickness of the cornea.
- Grade III is considered an unoccupied angle, with a distance of equal to or greater than half the thickness of the cornea. If the van's degree each shows a narrow space between Iris and Andothelium, it should move towards the gonioscopy. To perform an effective gonorrhocopy in these patients, minimize the amount of light that is both in the room and eat your cleft lamp, as this brightness can actually cause the eye's children to be dichotomed and keep the lily away from the angle. In fact, the doctor should look to simulate the size of the anthehal and configure the patient's angle because it is at times that it is more susceptible to attack. Also, the examiner should not put any black pressure on the eye, as this can open the angle. This is especially a concern when using Zeiss or Posner's 4 mirror lens. Although peripheral laser iridotomy can help the patient with narrow or occluded angles, poor preparation or technique can do more harm than good. Here are a few more subtle points to keep in mind when doing the procedure. Currently, most doctors use a combination of an argon and a Nd:YAG laser for their peripheral laser iridotomies, especially in dark, thick irides. This approach involves thinning the target area with argon beam, then using the Nd:YAG laser to open the hole in the iris. It is a good idea to pretreat a patient with alpha-agonists like brimonidine to help prevent post-surgery IOP spikes. We also recommend pretreating the patient with a 1-2% pilocarpine drop to the olepherine resenter and put the lily in the stretch. Placing iridotomy every 11 or 1 hours is often useful; Placing the iridotomy hole directly at 12 o'clock can cause the surgeon's vision to inadvertently be prevented by bubbles forming during the operation. The position of the door is also very important, since the surgeon would like the iridotomy placed superior enough for the hole to be covered by the upper lid. Undesirable event glaucoma specialists are largely afraid after iridotomy laser prognosis is a ghost or double image caused by the door completely covering the iridotomy hole. The main complications associated with cataract laser iridomi, IOP cluster, are noticeable inflammation and ghost images.
- Laser settings. Argon's laser power range varies depending on the method applied (as one, or the technique of thinning or punching). For punching techniques, most doctors use between 800 and 1,200 milliwatt, with a duration of 0.1 to 0.2 seconds. For thinning techniques, lower powers and longer durations are required, usually 200 to 400 mW for 0.2 to 0.5 seconds. The range used with the Nd:YAG laser depends on whether iris tissue is currently thinned by argon laser. Most doctors use between 3 and 7 mg and one or two pulses (lower powers of 4 to 5 mg are used if the iris tissue is already thinned by argon laser). After this operation, most doctors re-examine the IOP in an hour to rule out an IOP spike. If this happens, surgery should be dealt with medical treatment and on rare occasions. Finally, administering the steroid topically for the first few days will then continue to reduce any mild inflammation.
- 1 a period of postop alpha-agonist protection against pressure spikes.
- 1. Laser treatment in glaucoma. Al-Aswad, LA. Netland, PA. (p. 391-411) In Higginbotham, E.J. Lee, DA. Clinical Guide to Glaucoma Management. If gonioscopy indicates an occluded angle, then laser iridotomy can help relieve symptoms and prevent further damage. As in cases of acute angle closure, if there is PAS that has been there for less than six months, iridoplasty/gonioplasty may be useful in combining with laser iridotomy. If there is a significant sinchia that has been there for more than six months, laser therapy may not be effective. In these circumstances medical treatment, or in severe cases of filtration surgery, may be an option. An optical disc test will also rule out glaucomatus optical neuropathy as a result of intermittent attacks. Provocative experiments. These tests are useful from time to time. They attempt to provoke an angle closure attack in the office, allowing the doctor to make a definitive diagnosis. The basic test involves dilating the patient. The caveat with this experiment is, however, that patient time is not likely to develop angle closures in the office when their pupil is completely dilated. Instead, the attack will most likely occur hours later, at home, when the lynning is coming down. Another more involved, but possibly more reliable, experiment involves putting the patient in a prone position in a dark room for 30 minutes, and waiting for the pupil to reach a mid-loose state. The doctor re-examines the angle and cares that the light doesn't admit too much. Chronic angle closure glaucomatins with chronic angle closure glaucoma have persistent high IOPs between 20 and 30 mmHg. In gonioscopy, the angle is often graded 0-I with simultaneous PAS. Here is a review of the findings of agonoscopy based on the Shaffer scale:
- Grade 0: Iris against trabicular meshing (definite risk of angle closure).
- Gap: Angle between Iris and Terabular meshing is less than Degree (significant risk of angle closure).
- First degree: angle is 10 degrees (moderate risk)
- Second degree: angle is 20 degrees (low risk)
- Grade 3: The angle is more than 20 but less than 45 degrees (low risk)
- Grade 4: Angle is 45 degrees (no risk). An optical disc test is also vital in the chronic patient to determine the extent of glaucomatos damage. When performing a gonorrhocopy in patients with chronic narrow angles, the doctor should reject the configuration of the plateau lily, which is an important cause of angle closure in people younger than 40 years of age. Iris plateaus due to abnormal rotation of ciliary body processes that causes a double-cohon mark on the gonioscopy, where the body's ciliary anterior processes are pushing up and causing the peripheral lily to bow forward. To help identify the plateau snub, note if the deep central chamber and shallow peripheral, rather than the shallow uniform as in chronic glaucoma narrow the angle. The physician can perform a definitive diagnosis of plateau lily by performing peripheral laser iridoma and then reassessing the patient. If its angles are still narrow or occludable and the peripheral Iris configuration bows forward, the patient most likely has iris plateau. In such cases, the use of pilocarpine and/or peripheral iris to take Iris away from the angle is shown. Younger patients often cannot tolerate eye discomfort or side effects of pilocarin. In those cases, peripheral erythodoblats may be a more suitable option. For the chronic angle closure patient, a laser iridotomy will most likely be useful. After laser iridotomy, IOP may still be due to PAS or the combination of high glaucoma mechanisms: In these cases, medical treatment may be shown.
- Causes of fakowmorph. Cataract surgery may be shown if removing cataracts improves a patient's eyesight and the facomorph component of glaucoma reduces the closing angle. An advocacy study conducted laser iridectomy in patients with cataracts intumescent before cataract surgery to prevent glaucoma attack closing acute angles on the operating table.
- 1 Due to this risk, if the surgeon plans to act on this type of patient, the patient should have the first case that day, because as the amic begins to narrow it may induce an attack. Glaucoma SuspectThis's narrow angle is the most challenging of patients in the narrow angle spectrum, as the patient simply offers with narrow anatomical angles, but without optical disc damage or a history of intermittent attacks. The doctor is often asked to determine whether the angles of the anterior chamber are closed and are susceptible to angle closure attacks. Although peripheral laser iridotomy is usually the preferred course of action in other types of patients with a narrow angle, the decision may be as clear an incision on a narrow angle patient without a history of angle closure. General laser treatment guidelines based on gonioscopic findings as Between grade 0 and I, most doctors advocate a laser iridotomy.
- Between me and the second, the decision to recommend iridotomy depends on the patient's tolerance for the small risk of angle closure if no laser treatment is performed compared to the risks under laser iridotomy.
- Higher than II (opening wider than 20 degrees), most doctors simply monitor the angle. If the patient makes many international trips, this could affect the physician's decision to perform laser iridatoma. The concern is that the patient will not be able to get the medical help he or she needs quickly. Also, check the optical disc to ensure that there is no pre-existing glaucomatos damage from previous attacks. One angle before (above) and after a laser iridoma. If a patient with narrow cross-border angles decides not to undergo laser iridoma, they should be warned over-the-counter about the symptoms and situations that can rain attacks, such as sressful episodes and the use of cold crater preparations. The doctor should also be looking at the patient for a creeping angle, a condition that often occurs in African-American patients. In this case the angle in the first gonioscopic exam looks fairly normal, but then slowly narrows over time. Unless the doctor performs repeated gonioscopies in the following exams, he or she may lose this condition. Ultimately, though there is a wide range of patients with narrow angles, if someone diagnoses the condition early enough, laser iridoma can really be a healer. Dr. El Oswald is assistant professor of clinical ophthalmology in the department of glaucoma at Columbia University's Harkness Eye Institute. Dr. Tsai is associate professor of ophthalmology and director of glaucoma department at Harkness.
- 1. Tomey KF, al-Rajhi AA. Neodymium:YAG laser iridotomy in the initial management of phacomorphic glaucoma. Ophthalmology 1992;99:5:660-5. 1992;99:5:660-5.