Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring? We want to avoid cornea-iris touch and cornea-IOL touch.
Shallow Anterior Chamber After Cataract Surgery

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Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring? We want to avoid cornea-iris touch and cornea-IOL touch.
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE  
(early post-op period)

Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring? We want to avoid cornea-iris touch and cornea-IOL touch

What dreaded complication can result from prolonged cornea-iris touch?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE
(early post-op period)

Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring?
We want to avoid cornea-iris touch and cornea-IOL touch.

What dreaded complication can result from prolonged cornea-iris touch?
Peripheral anterior synechiae (PAS)
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

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What dreaded complication can result from prolonged cornea-iris touch?
Peripheral anterior synechiae (PAS)

What dreaded complication can result from prolonged cornea-IOL touch?
Re shallow AC after CE: What is our chief concern, ie, what do we want to keep from occurring? We want to avoid cornea-iris touch and cornea-IOL touch.

- What dreaded complication can result from prolonged cornea-iris touch? Peripheral anterior synechiae (PAS)
- What dreaded complication can result from prolonged cornea-IOL touch? K endothelium decompensation resulting in intractable corneal edema
When faced with a flat anterior chamber in the immediate post-CE period, your DDx is determined by the answer to one key question:
When faced with a flat anterior chamber in the immediate post-CE period, your DDx is determined by the answer to one key question: Is the IOP low, or normal/high?
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How low is low, ie, at what IOP should push us to this side of the DDx?
Shallow Anterior Chamber After Cataract Surgery

When faced with a flat anterior chamber in the immediate post-CE period, your DDx is determined by the answer to one key question:

Is the IOP low, or normal/high?

How low is low, ie, at what IOP should push us to this side of the DDx?
Less than 10
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Low

IOP?

Normal or high

Two entities

?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

- Wound leak
- Choroidal detachment

Normal or high

Two entities
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

- Wound leak
- Choroidal detachment

Normal or high

How is a wound leak diagnosed?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

Wound leak

Choroidal detachment

Normal or high

How is a wound leak diagnosed?
Via Seidel testing at the slit-lamp
How is a wound leak managed medically?

- **Low IOP**
  - Wound leak
  - Choroidal detachment
- **Normal or high IOP**
How is a wound leak managed medically? It’s as simple as ABC(D):

--A
--B
--C
--D
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE
(early post-op period)

IOP?

Low

Wound leak

Choroidal detachment

Normal or high

How is a wound leak managed medically? It’s as simple as ABC(D):
-- Aqueous suppressants
-- Bandage contact lens (BCL)
-- Cycloplegia
-- Discontinue (or at least Diminish) topical steroids
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**What is the purpose of the aqueous suppressants?**

Shallow Anterior Chamber After Cataract Surgery

**Shallow/flat AC after CE**
* (early post-op period)
How is a wound leak managed medically? It’s as simple as ABC(D):

-- Aqueous suppressants
-- Bandage contact lens (BCL)
-- Cycloplegia
-- Discontinue (or at least diminish) topical steroids

What is the purpose of the aqueous suppressants? To promote closure of the leak by decreasing the flow of aqueous across it.
How is a wound leak managed medically?

It's as simple as ABC(D):

-- Aqueous suppressants
-- Bandage contact lens (BCL)
-- Cycloplegia
-- Discontinue (or at least diminish) topical steroids

Normal or High IOP?

Low IOP?

Wound leak

Choroidal detachment

Which 3 drug classes are aqueous suppressants?

- $\alpha$ agonists (brimonidine probably best)
- $\beta$ blockers
- CAIs

What is the purpose of the aqueous suppressants?

To promote closure of the leak by decreasing the flow of aqueous across it

Shallow Anterior Chamber After Cataract Surgery
How is a wound leak managed medically?

It's as simple as ABC(D):

-- Aqueous suppressants

-- Bandage contact lens (BCL)

-- Cycloplegia

-- Discontinue (or at least diminish) topical steroids

Normal or high

Which 3 drug classes are aqueous suppressants?

-- $\alpha$ agonists (brimonidine probably best)

-- $\beta$ blockers

-- Carbonic anhydrase inhibitors (CAIs)

Shallow/flat AC after CE (early post-op period)

IOP?

Low

Wound leak

Choroidal detachment

What is the purpose of the aqueous suppressants?

To promote closure of the leak by decreasing the flow of aqueous across it
How is a wound leak managed medically? It’s as simple as ABC(D):

- **A**queous suppressants
- **B**andage contact lens (BCL)
- **C**ycloplegia
- **D**iscontinue (or at least diminish) topical steroids

What is the purpose of cycloplegia?

Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Low

$IOP$?

Normal or high

Wound leak

Choroidal detachment
How is a wound leak managed medically? It’s as simple as ABC(D):
-- Aqueous suppressants
-- Bandage contact lens (BCL)
-- Cycloplegia
-- Discontinue (or at least diminish) topical steroids

What is the purpose of cycloplegia?
To deepen the AC by rotating the ciliary body back

Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?
Low

Wound leak

Choroidal detachment

Normal or high
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

- **Low**
  - Wound leak
  - Choroidal detachment

- **Normal or high**

How is a wound leak managed medically?

- Aqueous suppressants
- Bandage contact lens (BCL)
- Cycloplegia
- Discontinue (or at least Diminish) topical steroids

Why stop steroids? Won’t that increase inflammation?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

\[ \text{IOP?} \]

- **Low**
  - **Wound leak**
  - **Choroidal detachment**

- **Normal or high**

How is a wound leak managed medically?

- **Aqueous suppressants**
- **Bandage contact lens (BCL)**
- **Cycloplegia**
- **Discontinue (or at least Diminish) topical steroids**

Why stop steroids? Won’t that increase inflammation?

Yes, but it will also promote leak closure by removing any steroid-induced inhibition of wound healing.
Shallow Anterior Chamber After Cataract Surgery

Under what circumstances should a wound leak be managed surgically?

1) Shallow/flat AC after CE (early post-op period)
   - **IOP?**
     - **Low**
       - Wound leak
     - Choroidal detachment
   - **Normal or high**
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

- **Low IOP**
  - Wound leak
  - Choroidal detachment

- **Normal or high IOP**

*Under what circumstances should a wound leak be managed surgically?*
1) No improvement for 48 hours
2) Obvious wound gape
3) IOL-cornea touch
4) Iris prolapse
Shallow Anterior Chamber After Cataract Surgery

Wound gap

Iris prolapse
Under what circumstances should a wound leak be managed surgically?
--No improvement for 48 hours
--Obvious wound gape
--IOL-cornea touch
--Iris prolapse

What stop-gap measure could you try for this?

Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

Wound leak

Choroidal detachment

Normal or high
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

- Low
  - Wound leak
  - Choroidal detachment
- Normal or high

Under what circumstances should a wound leak be managed surgically?
-- No improvement for 48 hours
-- Obvious wound gape
-- IOL-cornea touch
-- Iris prolapse

What stop-gap measure could you try for this?
Injection of viscoelastic to re-form the AC and push the IOL back
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE
(early post-op period)

What does the term choroidal detachment mean? What is detached from what?

Low

Wound leak

Choroidal detachment

Under normal circumstances, the outer aspect of the choroid is closely apposed to the inner wall of the sclera. However, the choroid and sclera are actually affixed to one another only at the vortex veins and around the ONH; everywhere else there is a potential space between them. If/when fluid accumulates in this space, the choroid detaches from the sclera.

Is choroidal detachment a common cause of low IOP + shallow/flat AC after CE?

This is a tricky question. Certainly, choroidal detachments are not an uncommon finding when a post-CE pt presents with a shallow AC and low IOP. However, it is likely that, in the majority of such cases, the choroidal detachment is a result of the low IOP, not a cause of it.
What does the term choroidal detachment mean? What is detached from what?

Under normal circumstances, the outer aspect of the choroid is closely apposed to the inner wall of the sclera.

**Low**

Wound leak

Choroidal detachment
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE
(early post-op period)

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What is the name of this potential space?

Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Low

Wound leak

Choroidal detachment
Shallow/flat AC after CE (early post-op period)

What does the term choroidal detachment mean? What is detached from what?
Under normal circumstances, the outer aspect of the choroid is closely apposed to the inner wall of the sclera. However, the choroid and sclera are actually affixed to one another only at the vortex veins and around the ONH; everywhere else, there is a potential space between them.

What is the name of this potential space? The suprachoroidal space
Shallow Anterior Chamber After Cataract Surgery

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Low

Wound leak

Choroidal detachment
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE
(early post-op period)

Low

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There are two broad categories of fluid that are associated with choroidal detachment—what are they?

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Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Low

Wound leak

Choroidal detachment

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If/when fluid accumulates in this space

There are two broad categories of fluid that are associated with choroidal detachment—what are they?
--Serum (via a process)
--Blood (via a diff process)
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

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If/when fluid accumulates in this space

There are two broad categories of fluid that are associated with choroidal detachment—what are they?

--Serum (via transudation)
--Blood (via hemorrhage)
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There are two broad categories of fluid that are associated with choroidal detachment—what are they?
- Serum? (via transudation)
- Blood? (via hemorrhage)

When a choroidal detachment is present in association with a shallow chamber and low IOP, is it typically serous, or hemorrhagic?
Shallow Anterior Chamber After Cataract Surgery

**Shallow/flat AC after CE**
*(early post-op period)*

*Low*

**Wound leak**

**Choroidal detachment**

What does the term choroidal detachment mean? What is detached from what?

Under normal circumstances, the outer aspect of the choroid is closely apposed to the inner wall of the sclera. However, the choroid and sclera are actually *affixed* to one another only at the vortex veins and around the ONH; everywhere else there is a potential space between them. If/when fluid accumulates in this space, the choroid detaches from the sclera.

*If/when fluid accumulates in this space*

There are two broad categories of fluid that are associated with choroidal detachment—what are they?

– *Serum*! (via transudation)
– *Blood* (via hemorrhage)

When a choroidal detachment is present in association with a shallow chamber and low IOP, is it typically serous, or hemorrhagic? In this scenario, the detachment is virtually always **serous**
Shallow Anterior Chamber After Cataract Surgery

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Shallow Anterior Chamber After Cataract Surgery

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Shallow Anterior Chamber After Cataract Surgery

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So if a pt with a flat AC is found to have a choroidal detachment, don’t assume the detachment is the cause. Be sure to check carefully for a wound leak!
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How is choroidal detachment diagnosed?
b-scan
Choroidal detachment (Confession: I don’t think this was post-CE)
Shallow Anterior Chamber After Cataract Surgery

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How should a flat chamber owing to a choroidal detachment be managed?

- Mydriatics and cycloplegics should be employed in an attempt to rotate the lens-iris diaphragm posteriorly.
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How should a flat chamber owing to a choroidal detachment be managed?
--Topical (+/- systemic) corticosteroids should be started (or increased)
--Mydriatics and cycloplegics should be employed in an attempt to rotate the lens-iris diaphragm posteriorly
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

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- Mydriatics and cycloplegics should be employed in an attempt to rotate the lens-iris diaphragm posteriorly

Recall that managing the other diagnosis of flat AC+low IOP (wound leak) included taking the opposite step, ie, stopping or decreasing steroids. So, it’s vitally important that you differentiate accurately between these two conditions!
Shallow/flat AC after CE (early post-op period)

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Under what circumstances should the detachment be addressed surgically?

--Mydriatics and cycloplegics should be employed in an attempt to rotate the lens-iris diaphragm posteriorly

The majority of such cases, the choroidal detachment is a result of the low IOP, not a cause of it.
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Low

Wound leak

Choroidal detachment

Under what circumstances should the detachment be addressed surgically?
There are no hard-and-fast rules in this regard, but indications include detachments refractory to medical management for a week or so.
--Mydriatics and cycloplegics should be employed in an attempt to rotate the lens-iris diaphragm posteriorly
--Topical (+/- systemic) corticosteroids should be started (or increased)
--Indications for surgery include detaching choroid that is refractory to medical management for a week or so.

Under what circumstances should the detachment be addressed medically?

--The majority of such cases, the choroidal detachment is a result of the low IOP, not a cause of it.
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

- Low
  - Wound leak
  - Choroidal detachment

- Normal or high

IOP?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

Low
- Wound leak
- Choroidal detachment

IOP?

Normal or high
- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low
- Wound leak
- Choroidal detachment

Normal or high
- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage

Note: The Lens book refers to this condition as *ciliary block glaucoma*, but the Glaucoma book refers to it as *aqueous misdirection syndrome*. 
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low
- Wound leak
- Choroidal detachment

Normal or high
- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage
  aka ‘aqueous misdirection syndrome’, aka ‘malignant glaucoma’

Note: The Lens book refers to this condition as ciliary block glaucoma, but the Glaucoma book refers to it as aqueous misdirection syndrome. Both books also aka it as malignant glaucoma.
What is the mechanism underlying pupillary block?

Normal or high IOP?

- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage

Shallow Anterior Chamber After Cataract Surgery

AC after CE (early post-op period)

Which pt population is particularly prone to pseudophakic pupillary block?

The pediatric population. As a general rule, the younger the pt, the more likely they are to develop pseudophakic pupillary block.

In adults, what class of IOL is most likely to produce pseudophakic pupillary block?

AC IOLs, especially if the surgeon fails to perform an iridotomy at the time of IOL implantation.
Shallow Anterior Chamber After Cataract Surgery

What is the mechanism underlying pupillary block?
Apposition between the pupil margin and the IOL prevents the normal flow of aqueous from the posterior chamber to the AC. This results in a pressure gradient across the iris, causing it to bow forward. In doing so, the peripheral iris interferes with the egress of aqueous through the TM. The net result is a normal-to-high IOP and shallowed AC.

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Shallow Anterior Chamber After Cataract Surgery

PC IOL pupillary block after wound leak
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Apposition between the pupil margin and the IOL prevents the normal flow of aqueous from the posterior chamber to the AC. This results in a pressure gradient across the iris, causing it to bow ... iris interferes with the egress of aqueous through the TM. The net result is a normal-to-high IOP and shallowed AC.

In the acute post-op period, what process commonly leads to the IOL being apposed to the pupillary margin?

interferes with the egress of aqueous through the TM. The net result is a normal-to-high IOP and shallowed AC.

Normal or high

Pupillary block
Ciliary block
Suprachoroidal hemorrhage
What is the mechanism underlying pupillary block?
Apposition between the pupil margin and the IOL prevents the normal flow of aqueous from the posterior chamber to the AC. This results in a pressure gradient across the iris, causing it to bow inward. This bowing interferes with the egress of aqueous through the TM. The net result is a normal-to-high IOP and shallowed AC.

In the acute post-op period, what process commonly leads to the IOL being apposed to the pupillary margin? One common cause is a wound leak, which can allow the vitreous body to push the IOL up against the pupil, resulting in pseudophakic pupillary block. So, a post-op eye that initially has a shallow chamber + low IOP ends up having a shallow chamber + a normal/high IOP.

Normal or high

- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage

Wound leak
What is the mechanism underlying pupillary block?

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In the late post-op period, what process commonly leads to the IOL being apposed to the pupillary margin?

- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage
Shallow Anterior Chamber After Cataract Surgery

**What is the mechanism underlying pupillary block?**

*Apposition between the pupil margin and the IOL* prevents the normal flow of aqueous from the posterior chamber to the anterior chamber (AC). This results in a pressure gradient across the iris, causing it to bow. The bowing interferes with the egress of aqueous through the trabecular meshwork (TM). The net result is a normal-to-high IOP and shallowed AC.

**In the late post-op period, what process commonly leads to the IOL being apposed to the pupillary margin?**

Severe/long-lasting post-op inflammation can result in posterior synechiae formation, causing the peripheral iris to appose to the pupillary margin.

**In adults, what class of IOL is most likely to produce pseudophakic pupillary block?**

AC IOLs, especially if the surgeon fails to perform an iridotomy at the time of IOL implantation.
Late-onset PSK pupillary-block shallow AC 2ndry to posterior synechiae
**What is the mechanism underlying pupillary block?**
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**Which pt population is particularly prone to pseudophakic pupillary block?**

- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage

**Shallow Anterior Chamber After Cataract Surgery**

AC after CE (post-op period)

IOP?

- Normal or high

67
Shallow Anterior Chamber After Cataract Surgery

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**Which pt population is particularly prone to pseudophakic pupillary block?**
The pediatric population. As a general rule, the younger the pt, the more likely they are to develop pseudophakic pupillary block.

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**AC after CE (pre- or post-op period)**

- **Normal or high**
- **Pupillary block**
- **Ciliary block**
- **Suprachoroidal hemorrhage**
The patient is 6 years old. Closure of peripheral iridectomy, lens decentration, partial pupil capture, and adhesions between the optic and the iris have produced pupillary block. One of the loops has started cheese-wiring the iris. Iris bombé is all around. Iris incision line adhesions are visible.
What is the mechanism underlying pupillary block?
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Shallow Anterior Chamber After Cataract Surgery

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AC IOLs, especially if the surgeon fails to perform an iridectomy at the time of IOL implantation.
Shallow Anterior Chamber After Cataract Surgery

That feeling when an AC IOL is implanted, but the surgeon forgets to create a PI
What is ciliary block glaucoma?

Normal or high

Ciliary block

Suprachoroidal hemorrhage
What is ciliary block glaucoma?
A rare condition in which anterior rotation of the ciliary body causes newly-produced aqueous to be directed posteriorly, toward and perhaps into or behind the vitreous body.
Ciliary block glaucoma. Lateral illumination produces shadowing nasally, revealing the extent of AC shallowing. Note the presence of an LPI, ineffective because pupillary block is not present.
Ciliary block glaucoma. AS-OCT reveals the extent of AC shallowing. Note again the presence of an ineffective LPI.
What is ciliary block glaucoma?
A rare condition in which anterior rotation of the ciliary body causes newly-produced aqueous to be directed posteriorly, toward and perhaps into or behind the vitreous body.

Is it common, or rare?

Normal or high

Suprachoroidal hemorrhage

Ciliary block
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Is it common, or rare?
Rare

Normal or high
Ciliary block
Suprachoroidal hemorrhage
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Is it common, or rare?
Rare.

What is the chief risk factor?

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What is the chief risk factor?
Intraocular surgery in an eye with tight angles.
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How is ciliary block glaucoma managed medically?
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How is ciliary block glaucoma managed medically?
--Aqueous suppressants
--Aggressive cycloplegia (atropine 1% and phenylephrine 10% qid)
--Dehydration of the vitreous with hyperosmotic agents
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What about surgical management--is it usually necessary?
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--Dehydration of the vitreous with hyperosmotic agents.

What about surgical management--is it usually necessary?
Yes; surgical or laser disruption of the vitreous face is often required for resolution.
Aqueous misdirection. The anterior chamber is shallow. Two patent peripheral iridotomies are barely seen at the 10- and 1-o'clock positions. Intraocular pressure was 42 mmHg.
Aqueous misdirection. The anterior chamber is shallow. Two patent peripheral iridotomies are barely seen at the 10- and 1-o'clock positions. Intraocular pressure was 42 mmHg.

Same eye 4 weeks after pars plana tube insertion of aqueous shunt with vitrectomy. The anterior chamber is deep. The temporal iridectomy is enlarged. Intraocular pressure was 12 mmHg.
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of? The pt will complain of the sudden onset of two words and two diff words.
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
The pt will complain of the sudden onset of **vision loss** and **excruciating pain**.
Suprachoroidal hemorrhage

Shallow Anterior Chamber After Cataract Surgery
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
The pt will complain of the sudden onset of **vision loss** and **excruciating pain**

Is the vision loss usually mild, or severe?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

- Low
  - Wound leak
  - Choroidal detachment

- Normal or high
  - Pupillary block
  - Ciliary block
  - Suprachoroidal hemorrhage

What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
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Is the vision loss usually mild, or severe?
Severe
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
The pt will complain of the sudden onset of vision loss and excruciating pain.

What word classically characterizes the nature of the pain?
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of? The pt will complain of the sudden onset of vision loss and excruciating pain.

What word classically characterizes the nature of the pain? ‘Throbbing’
What is the classic presentation of a post-op suprachoroidal hemorrhage, i.e., what will the pt complain of?
The pt will complain of the sudden onset of vision loss and *excruciating pain*?
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?
The pt will complain of the sudden onset of vision loss and **excruciating pain?** No.
What is the classic presentation of a post-op suprachoroidal hemorrhage, ie, what will the pt complain of?

The pt will complain of the sudden onset of **vision loss** and excruciating pain.
What is the classic presentation of a post-op suprachoroidal hemorrhage, i.e., what will the pt complain of?
The pt will complain of the sudden onset of vision loss? Maybe indicating pain

Is a serous choroidal detachment associated with pain?
No, it is almost always painless

Is it associated with severe vision loss?
It depends. If a serous choroidal detachment is very extensive, it can block light from reaching the fovea, in which case SVL would result

Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

Normal or high

Serous Choroidal detachment

Serous hemorrhage

Suprachoroidal hemorrhage

Wound leak
Is this suprachoroidal effusion serous, or hemorrhagic?
Shallow Anterior Chamber After Cataract Surgery

*Is this suprachoroidal effusion serous, or hemorrhagic? It’s both*
What factors put an eye at risk for post-op suprachoroidal hemorrhage?

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--(there are a number of others)
Shallow Anterior Chamber After Cataract Surgery

What factors put an eye at risk for post-op suprachoroidal hemorrhage?
--High myopia
--Nanophthalmia
--Sturge-Weber syndrome
--Hypertension
--Glaucoma
--(there are a number of others)
What factors put an eye at risk for post-op suprachoroidal hemorrhage?
--High myopia

Do the others include being in anticoagulated state?

--(there are a number of others)
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

- Wound leak
- Choroidal detachment

Normal or high

- Pupillary block
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What factors put an eye at risk for post-op suprachoroidal hemorrhage?
-- High myopia

Do the others include being in anticoagulated state?
Surprisingly, no. Long thought to be a risk factor for intra- and post-op hemorrhage, a large clinical trial found no evidence for this.

-- (there are a number of others)
What is the classic precipitating event for a post-op suprachoroidal hemorrhage?
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low
- Wound leak
- Choroidal detachment

Normal or high
- Pupillary block
- Ciliary block
- Suprachoroidal hemorrhage

What is the classic precipitating event for a post-op suprachoroidal hemorrhage? A Valsalva maneuver on the part of the pt (eg, sneezing; coughing; straining at stool)
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE (early post-op period)

IOP?

Low

Wound leak

Choroidal detachment

Normal or high

Pupillary block

Ciliary block

Suprachoroidal hemorrhage

How is a suprachoroidal hemorrhage managed?
How is a suprachoroidal hemorrhage managed?
If not too severe (ie, the AC is not flat; the IOP not too high; the pt not in too much pain; no kissing choroidal present), medical management with aggressive cycloplegia and aqueous suppressants can be attempted. Otherwise, sclerotomy surgery is indicated.
Suprachoroidal hemorrhage: Drainage via sclerotomy
Suprachoroidal hemorrhage. A, Schematic shows anterior infusion and simultaneous drainage of suprachoroidal hemorrhage through pars plana sclerotomy. B, Schematic shows pars plana vitrectomy to remove vitreous prolapse as drainage of suprachoroidal hemorrhage continues.
With regard to an *intraoperative* shallowing of the AC, one of these entities is closely related to the most dreaded intraoperative complication of all. What is that most dreaded of complications?
With regard to an **intraoperative** shallowing of the AC, one of these entities is closely related to the most dreaded intraoperative complication of all. What is that most dreaded of complications? The *expulsive choroidal hemorrhage*
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign?
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign? Darkening of the red reflex
Still from a video depicting an expulsive choroidal hemorrhage
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign? Darkening of the red reflex

What is the classic ‘late’ sign?
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign? Darkening of the red reflex

What is the classic ‘late’ sign? Expulsion of the intraocular contents through the wound

Shallow Anterior Chamber After Cataract Surgery
Expulsive suprachoroidal hemorrhage
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign? Darkening of the red reflex

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How should it be managed intraoperatively?
1)
2)
3)
Expulsive choroidal hemorrhage is the most feared intraoperative complication of CE surgery. What is the classic first sign? Darkening of the red reflex

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How should it be managed intraoperatively?
1) Put your finger on the wound to seal it
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Post-op, how should IOP be managed?
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1) Put your finger on the wound to seal it
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Post-op, how should IOP be managed? Leave it elevated (will tamponade the bleed)
What is the differential for a shallow AC in the late post-op period?
Shallow Anterior Chamber After Cataract Surgery

**What is the differential for a shallow AC in the late post-op period?**

--RD
--Bleb formation
--Chronic uveitis
--Cyclodialysis
--Delayed choroidal hemorrhage
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What sort of incision makes inadvertent bleb formation more likely?

Shallow Anterior Chamber After Cataract Surgery
What is the differential for a shallow AC in the late post-op period?
--RD
--Bleb formation
--Chronic uveitis
--Cycloodialysis
--Delayed choroidal hemorrhage

What sort of incision makes inadvertent bleb formation more likely?
A limbal incision
Shallow Anterior Chamber After Cataract Surgery

Shallow/flat AC after CE

What is the differential for a shallow AC in the late post-op period?
--RD
--Bleb formation
--Chronic uveitis
--Cyclodialysis
--Delayed choroidal hemorrhage

What sort of incision makes cyclodialysis more likely?

A scleral-tunnel incision
What is the differential for a shallow AC in the late post-op period?
- RD
- Bleb formation
- Chronic uveitis
- Cyclodialysis
- Delayed choroidal hemorrhage

What sort of incision makes cyclodialysis more likely?
A scleral-tunnel incision
Shallow Anterior Chamber After Cataract Surgery

‘Scleral tunnel’

‘Limbal’

‘Clear cornea’
Bleb formation after limbal-incision CE
Scleral-tunnel CE incision. Note the proximity to the ciliary body (CB)