For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them

Where is the hemorrhage found in:
--Purtscher’s?
--Valsalva?
--Terson’s?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

Where is the hemorrhage found in:
-- Purtscher’s? Intraretinal
-- Valsalva?
-- Terson’s?
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

Where is the hemorrhage found in:
--- Purtscher’s? **Intraretinal**
--- Valsalva?
--- Terson?

What section of the retina is most commonly involved in Purtscher’s?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

Where is the hemorrhage found in:
- Purtscher’s? **Intraretinal**
- Valsalva?
- Terson’s?

What section of the retina is most commonly involved in Purtscher’s?
The peripapillary area
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

**Where is the hemorrhage found in:**
--- Purtscher’s?
   - Intraretinal
--- Valsalva?
--- Terson’s?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

Where is the hemorrhage found in:
- Purtscher’s? Intraretinal
- Valsalva? Sub-ILM
- Terson’s?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them

Where is the hemorrhage found in:
--Purtscher’s? Intraretinal
--Valsalva? Sub-ILM
--Terson’s?
● Involves **intraocular bleeding/hemorrhage**: All of them

---

**For each statement, assign the proper condition(s):**

- Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

---

**Where is the hemorrhage found in:**

- Purtscher’s? Intraretinal
- Valsalva? Sub-ILM
- Terson’s? Sub-ILM, sub-hyaloid, or intra-vitreal
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves **intraocular bleeding/hemorrhage**: All of them

As we shall see, this is the first of many ways in which Purtscher’s differs from Valsalva and Terson’s retinopathies!

- **Where is the hemorrhage found in:**
  - Purtscher’s? Intraretinal
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  - Terson’s? Sub-ILM, sub-hyaloid, or intra-vitreal
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- 2ndry to compression injury of chest, head:
For each statement, assign the proper condition(s):
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- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
For each statement, assign the proper condition(s):
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- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: **Purtscher**

*What is the pathologic process underlying Purtscher’s?*
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher

What is the pathologic process underlying Purtscher’s?

Complement activation → granulocyte aggregation → leukoembolization → occlusion of small retinal arterioles

Let’s tackle this topic in reverse. What is the direct, proximal cause of retinal hemorrhages in Purtscher’s?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
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→ occlusion of small retinal arterioles

Let’s tackle this topic in reverse. What is the direct, proximal cause of retinal hemorrhages in Purtscher’s?
Occlusion of small retinal arterioles
For each statement, assign the proper condition(s):
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- 2ndry to compression injury of chest, head: **Purtscher**

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Activation $\rightarrow$ Aggregation $\rightarrow$ Occlusion of small retinal arterioles

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Occlusion of small retinal arterioles

What is the cause of the occlusion?
For each statement, assign the proper condition(s):
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**Occlusion of small retinal arterioles**

**What is the cause of the occlusion?** **Leukoembolization**

Aggregates of what sort of immune cells for the emboli?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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What is the cause of the occlusion? **Leukoembolization**

Aggregates of what sort of immune cells for the emboli? **Granulocytes**
And lastly: Activation of which aspect of the immune system begins the cascade?

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- 2ndry to compression injury of chest, head: Purtscher

And lastly: Activation of which aspect of the immune system begins the cascade?
The complement system

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Complement activation → granulocyte aggregation → leukoembolization → occlusion of small retinal arterioles

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- Involves intraocular bleeding/hemorrhage: All of them
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- Cotton-wool spots common, expected:
For each statement, assign the proper condition(s):
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Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher

A classic finding in Purtscher’s is ‘polygonal-shaped areas of retinal whitening.’ What is the eponymous name for these areas?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- **Cotton-wool spots common, expected:** Purtscher

A classic finding in Purtscher’s is ‘polygonal-shaped areas of retinal whitening.’
What is the eponymous name for these areas?
‘Purtscher flecken’
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- 2ndry to compression injury of chest, head: Purtscher
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‘Areas of retinal whitening’--isn’t this the same thing as CWS?
For each statement, assign the proper condition(s):
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Yes and no…
Cotton-wool spots occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the...
For each statement, assign the proper condition(s):
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**Cotton-wool spots** occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer.
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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Yes and no…

**Cotton-wool spots** occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer. Obstruction of the RNFL causes **axoplasmic stasis** in the nerve fibers served by the obstructed vessel. **Axoplasmic stasis** renders the affected nerve fibers white—ie, a CWS.
For each statement, assign the proper condition(s):
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In contrast, **Purtscher flecken** develop when occlusion occurs at the level of retinal circulation.
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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In contrast, Purtscher flecken develop when occlusion occurs at the capillary level of retinal circulation.
Involves intraocular bleeding/hemorrhage: All of them
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Cotton-wool spots common, expected: **Purtscher**

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Cotton-wool spots occur when branches of the pre-capillary **arteriolar** network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer. Obstruction of the RNFL causes axoplasmic stasis in the nerve fibers served by the obstructed vessel. Axoplasmic stasis renders the affected nerve fibers white—ie, a CWS.
In contrast, **Purtscher flecken** develop when occlusion occurs at the **capillary** level of retinal circulation. These vessels are located deeper in the retina, and thus their occlusion doesn’t affect the retina nerve fiber layer--so no CWS.
Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher

A classic finding in Purtscher’s is ‘polygonal-shaped areas of retinal whitening.’ What is the eponymous name for these areas?

‘Purtscher flecken’

‘Areas of retinal whitening’

Yes and no…

Cotton-wool spots

How can Purtscher flecken and CWS be differentiated at DFE?

CWS have indistinct borders (like puffs of cotton wool--get it?), and obscure vessels running through them. In contrast, Purtscher flecken are more sharply demarcated and do not obscure adjacent vessels--in fact, a ‘clear zone’ appears between vessels and the surrounding flecken.

CWS occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer. Obstruction of the RNFL causes axoplasmic stasis in the nerve fibers served by the obstructed vessel. Axoplasmic stasis renders the affected nerve fibers white—ie, a CWS.

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For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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Yes and no… Cotton-wool spots occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer. Obstruction of the RNFL causes axoplasmic stasis in the nerve fibers served by the obstructed vessel. Axoplasmic stasis renders the affected nerve fibers white—ie, a CWS. In contrast, Purtscher flecken develop when occlusion occurs at the capillary level of retinal circulation. These vessels are located deeper in the retina, and thus their occlusion doesn’t affect the retina nerve fiber layer--so no CWS.
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Flecken, flecken…where have I heard that before?
You’re probably thinking of glaukomflecken
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That’s it! Clinically speaking, what are glaukomflecken?

Small white patches ('flecks') beneath the anterior capsule of the lens

With what clinical event are they associated?

Acute angle-closure glaucoma with severe IOP elevation

How do they form, ie, what is the pathophysiology?

The high IOP damages lens epithelial cells just beneath the capsule, and the damaged cells subsequently necrose.
For each statement, assign the proper condition(s):
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Yes and no…
Cotton-wool spots
occur when branches of the pre-capillary arteriolar network are occluded. These vessels are located in the superficial (ie, inner) portion of the retina; thus, the layer of the retina most affected by their occlusion is the nerve fiber layer. Obstruction of the RNFL causes axoplasmic stasis in the nerve fibers served by the obstructed vessel. Axoplasmic stasis renders the affected nerve fibers white—ie, a CWS.

In contrast, Purtscher flecken develop when occlusion occurs at the capillary level of retinal circulation. These vessels are located deeper in the retina, and thus their occlusion doesn’t affect the retina nerve fiber layer--so no CWS.

Flecken, flecken…where have I heard that before?
You’re probably thinking of glaukomflecken

That’s it! Clinically speaking, what are glaukomflecken?
Small white patches (‘flecks’) beneath the anterior capsule of the lens

With what clinical event are they associated?
Acute angle-closure glaucoma with severe IOP elevation

How do they form, ie, what is the pathophysiology?
The high IOP damages lens epithelial cells just beneath the capsule, and the damaged cells subsequently necrose...
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher

A classic finding in Purtscher's is 'polygonal-shaped areas of retinal whitening.'

What is the eponymous name for these areas?
‘Purtscher flecken’

Yes and no...
Cotton-wool spots

A classic finding in Purtscher's is 'polygonal-shaped areas of retinal whitening.'

What is the eponymous name for these areas?
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In contrast, Purtscher flecken develop when occlusion occurs at the capillary level of retinal circulation. These vessels are located deeper in the retina, and thus their occlusion doesn’t affect the retina nerve fiber layer--so no CWS.

CWS have indistinct borders (like puffs of cotton wool--get it?), and obscure vessels running through them. In contrast, Purtscher flecken are more sharply demarcated and do not obscure adjacent vessels--in fact, a 'clear zone' appears between vessels and the surrounding flecken.

Areas of retinal whitening

Yes and no...
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool:
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For each statement, assign the proper condition(s):
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- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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Wadda ya mean, none? Everyone knows these cause Purtscher's. What's the dealio?
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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It’s true that these conditions can cause a retinopathy identical in appearance to Purtscher’s. That said, Dr Purtscher’s original description was in the context of thoracic or head trauma. Thus, technically speaking, the term *Purtscher retinopathy* is reserved for only situations in which the retinopathy results from thoracic/head trauma.
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Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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OK then, what is the name for the Purtscher’s-like retinopathy due to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture, etc?
Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher
2ndry to coughing, vomiting, straining at stool: Valsalva
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It’s called ‘Purtscher’s-like retinopathy’
Involves intraocular bleeding/hemorrhage: All of them

2ndry to compression injury of chest, head: Purtscher

Cotton-wool spots common, expected: Purtscher

2ndry to coughing, vomiting, straining at stool: Valsalva

2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)

2ndry to abrupt intracranial hemorrhage:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt intracranial hemorrhage: Terson
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt **intracranial hemorrhage**: Terson

**Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?**
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt intracranial hemorrhage: Terson

*Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?*
Either/both
Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher
2ndry to coughing, vomiting, straining at stool: Valsalva
2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (*but…*)
2ndry to abrupt *intracranial hemorrhage*: Terson

*Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?*
Either/both

*Does Terson’s represent the direct extension of an intracranial bleed into the eye via dural compartments?*
Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher
2ndry to coughing, vomiting, straining at stool: Valsalva
2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
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For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?
Either/both

Does Terson’s represent the direct extension of an intracranial bleed into the eye via dural compartments?
No
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
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Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?
Either/both

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No

OK, then what is the cause?
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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Does Terson’s follow a subarachnoid hemorrhage, a subdural hemorrhage, or either/both?
Either/both

Does Terson’s represent the direct extension of an intracranial bleed into the eye via dural compartments?
No

OK, then what is the cause?
We’ll get to that shortly
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
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- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt intracranial hemorrhage: Terson
- Vision loss often permanent:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
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2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
2ndry to abrupt intracranial hemorrhage: Terson
Vision often permanent: Purtscher

What is the visual prognosis in Terson or Valsalva retinopathy?
Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (*but…*)
- 2ndry to abrupt intracranial hemorrhage: Terson

Vision less often permanent: Purtscher

**Great!**

What is the visual prognosis in Terson or Valsalva retinopathy? For both, vision is expected to return to baseline
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
- 2ndry to coughing, vomiting, straining at stool: Valsalva
- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt intracranial hemorrhage: Terson
- Vision loss often permanent: Purtscher

As we shall see, this is the first of many ways in which Purtscher’s differs from Valsalva and Terson’s retinopathies!

What is the visual prognosis in Terson or Valsalva retinopathy? Great!
For both, vision is expected to return to baseline
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
- Cotton-wool spots common, expected: Purtscher
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- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
- 2ndry to abrupt intracranial hemorrhage: Terson
- Vision loss often permanent: Purtscher
- 2ndry to an acute increase in intraocular venous pressure:

Note: Not IOP!
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- 2ndry to compression injury of chest, head: Purtscher
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2ndry to abrupt intracranial hemorrhage: Terson
Vision loss often permanent: Purtscher

For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

2ndry to an acute increase in intraocular venous pressure: Valsalva; Terson

Note that Valsalva and Terson retinopathies share a common final pathway--an acute rise in intraocular venous pressure produces backpressure in the capillary and arteriolar beds, causing some of these vessels to rupture.
Involves intraocular bleeding/hemorrhage: All of them
2ndry to compression injury of chest, head: Purtscher
Cotton-wool spots common, expected: Purtscher
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2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
2ndry to abrupt intracranial hemorrhage: Terson
Vision loss often permanent: Purtscher

2ndry to an acute increase in intraocular venous pressure: Valsalva; Terson

Note that Valsalva and Terson retinopathies share a common final pathway—an acute rise in intraocular venous pressure produces backpressure in the capillary and arteriolar beds, causing some of these vessels to rupture.

In sharp contrast, Purtscher’s results from an occlusive process occurring within the arterial side of the peripapillary vascular bed.
For each statement, assign the proper condition(s): Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

- Involves intraocular bleeding/hemorrhage: All of them
- 2ndry to compression injury of chest, head: Purtscher
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As we shall see, this is the first of many ways in which Purtscher’s differs from Valsalva and Terson’s retinopathies!

Yet another example

Note that Valsalva and Terson retinopathies share a common final pathway—an acute rise in intraocular venous pressure produces backpressure in the capillary and arteriolar beds, causing some of these vessels to rupture.

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● 2ndry to abrupt intracranial hemorrhage: Terson
● Vision loss often permanent: Purtscher
● 2ndry to an acute increase in intraocular venous pressure: Valsalva; Terson
● FA → arteriolar obstruction, leakage:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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- Vision loss often permanent: Purtscher
- 2ndry to an acute increase in intraocular venous pressure: Valsalva; Terson
- FA→arteriolar obstruction, leakage: Purtscher
- Retinal edema common, expected:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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FA→arteriolar obstruction, leakage: Purtscher
Retinal edema common, expected: Purtscher
DDx includes PVD, retinal macroaneurysm:
For each statement, assign the proper condition(s):
Valsalva retinopathy; Terson retinopathy; Purtscher retinopathy

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For each statement, assign the proper condition(s):
VALSALVA RETINOPOathy; TERSon RETINOPOathy; PURTSCHER RETINOPOathy

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### Valsalva vs Terson vs Purtscher: Highlights

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- 2ndry to pancreatitis, SLE, amniotic-fluid embolization, long-bone fracture: None (but…)
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**Additional Points**
- Involves intraocular bleeding/hemorrhage: All of them
- Secondary to compression injury of chest, head: Purtscher
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Valsalva and Terson’s are very similar, and differ greatly from Purtscher’s!