Proptosis

Proptosis

Key question…
Proptosis

Is Lid Retraction present?
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

No

Your thought is…
Proptosis

Is Lid Retraction present?

Yes

Your thought is…

Graves dz

No
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

No

Your thought is...

Graves dz

How common is lid retraction in Graves disease?
How common is lid retraction in Graves disease?
It is ubiquitous, with greater than 90% of Graves pts manifesting it at some point. Because of this ubiquity, lid retraction is a key diagnostic finding in Graves dz—if a pt has lid retraction plus laboratory evidence of thyroid dysfunction, the diagnosis of Graves dz is made.
**Proptosis**

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**How common is lid retraction in Graves disease?**
It is ubiquitous, with greater than 90% of Graves pts manifesting it at some point. Because of this ubiquity, lid retraction is a key diagnostic finding in Graves dz—if a pt has lid retraction plus laboratory evidence of thyroid dysfunction, the diagnosis of Graves dz is made.

**Does the absence of lid retraction rule out Graves?**
Proptosis

Is Lid Retraction present?

If the answer is…

Yes

Graves dz

No

How common is lid retraction in Graves disease?
It is ubiquitous, with greater than 90% of Graves pts manifesting it at some point. Because of this ubiquity, lid retraction is a key diagnostic finding in Graves dz—if a pt has lid retraction plus laboratory evidence of thyroid dysfunction, the diagnosis of Graves dz is made.

Does the absence of lid retraction rule out Graves?
No, but it make it much less likely
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

Your thought is...

How common is lid retraction in Graves disease?

There is an important exception to the ‘absence of lid retraction indicates it isn’t Graves dz’ contention--in fact, such pts can present with ptosis. Under what circumstance might a Graves pt present with no lid retraction, or even frank ptosis?

Graves dz is made.

Does the absence of lid retraction rule out Graves?

No, but it make it much less likely
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

Your thought is…

How common is lid retraction in Graves disease?

There is an important exception to the ‘absence of lid retraction indicates it isn’t Graves dz’ contention—in fact, such pts can present with ptosis. Under what circumstance might a Graves pt present with no lid retraction, or even frank ptosis?

If the pt has concurrent...

two words

Does the absence of lid retraction rule out Graves?

No, but it make it much less likely
Proptosis

Is Lid Retraction present?

If the answer is…

Yes  No

Your thought is…

Graves dz

How common is lid retraction in Graves disease?

There is an important exception to the ‘absence of lid retraction indicates it isn’t Graves dz’ contention—in fact, such pts can present with ptosis. Under what circumstance might a Graves pt present with no lid retraction, or even frank ptosis? If the pt has concurrent myasthenia gravis

Does the absence of lid retraction rule out Graves?

No, but it make it much less likely
Is Lid Retraction present?

If the answer is...

Yes

Lid Retraction is present. Your thought is...

Graves dz

No

Lid Retraction is not present. Does the absence of lid retraction rule out Graves?

No, but it make it much less likely.

What one word best characterizes the clinical course of ptosis in MG?

Variable.

How common is lid retraction in Graves disease?

It is ubiquitous, with greater than 90% of Graves pts manifesting it at some point. Because of this ubiquity, lid retraction is a key diagnostic finding in Graves dz—if a pt has lid retraction plus laboratory evidence of thyroid dysfunction, the diagnosis of Graves dz is made.

There is an important exception to the 'absence of lid retraction indicates it isn't Graves dz' contention--in fact, such pts can present with ptosis. Under what circumstance might a Graves pt present with no lid retraction, or even frank ptosis? If the pt has concurrent myasthenia gravis.

Does the absence of lid retraction rule out Graves? No, but it make it much less likely.
Proptosis

Is Lid Retraction present?

Yes

No

Your thought is…

Graves dz

How common is lid retraction in Graves disease?

It is ubiquitous, with greater than 90% of Graves pts manifesting it at some point. Because of this ubiquity, lid retraction is a key diagnostic finding in Graves dz—if a pt has lid retraction plus laboratory evidence of thyroid dysfunction, the diagnosis of Graves dz is made.

Does the absence of lid retraction rule out Graves?

No, but it makes it much less likely

What one word best characterizes the clinical course of ptosis in MG?

Variable. That is, one would expect the degree of ptosis to vary from exam to exam.

If the pt has concurrent myasthenia gravis?
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

Your thought is...

What if it’s not Graves dz? What else can cause proptosis + lid retraction?
Proptosis

If the answer is...

Yes

Graves dz

No

Is Lid Retraction present?

What if it’s not Graves dz? What else can cause proptosis + lid retraction?
An abnormally large globe as in high axial myopia, or buphthalmos. (Of course, such cases would not consist of lid retraction + proptosis; rather, they would consist of lid retraction +...
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

What if it’s not Graves dz? What else can cause proptosis + lid retraction?
An abnormally large globe as in high axial myopia, or buphthalmos. (Of course, such cases would not consist of lid retraction + proptosis; rather, they would consist of lid retraction + pseudo proptosis.)
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Lid Retraction is present. Your thought is...

Graves dz

No

Lid Retraction is not present. Your thought is...

(over here now)
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

CT (as in, I need to order a CT)
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Graves dz

No

Your thought is...

CT (as in, I need to order a CT)

Key question…
Proptosis

Is Lid Retraction present?

- Yes: Your thought is… Graves dz
- No: Your thought is…

CT (as in, I need to order a CT)

Is there a Mass present?
Proptosis

Is Lid Retraction present?

If the answer is Yes:

Your thought is Graves dz

If the answer is No:

Your thought is CT (as in, I need to order a CT)

Is there a Mass present?

If the answer is Yes:

Your DDx is

If the answer is No:
Proptosis

Is Lid Retraction present?

Yes

Graves dz

No

CT (as in, I need to order a CT)

Is there a Mass present?

Yes

If the answer is…

Your DDx is…

--Cavernous hemangioma
--ON sheath meningioma
--ON glioma
--Rhabdomyosarcoma
--Metastatic disease
--Varix
--Lymphangioma

No

If the answer is…

Your thought is…
Proptosis

Is Lid Retraction present?

If the answer is…

Yes

Graves dz

No

Your thought is…

CT (as in, I need to order a CT)

Is there a Mass present?

If the answer is…

Yes

Your DDx is…

--Cavernous hemangioma
--ON sheath meningioma
--ON glioma
--Rhabdomyosarcoma
--Metastatic disease
--Varix
--Lymphangioma

If the answer is…

No

Your DDx is…
Proptosis

Is Lid Retraction present?

If the answer is...

Yes

Your thought is...

Graves dz

No

Your thought is...

CT (as in, I need to order a CT)

Is there a Mass present?

If the answer is...

Yes

Your DDx is...

--Cavernous hemangioma
--ON sheath meningioma
--ON glioma
--Rhabdomyosarcoma
--Metastatic disease
--Varix
--Lymphangioma

No

Your DDx is...

--CCF
--AVM
--Orbital inflammation
--Lymphoproliferative dz

(CCF = carotid-cavernous sinus fistula)
(AVM = arteriovenous malformation)
Q

Proptosis: Fill in the blanks

- Proptosis + lid retraction =
  - Proptosis w/o lid retraction =

Your first thought should be…
Your first thought should be…
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ________
  - Proptosis \textit{w/o} lid retraction = ________

Graves disease

Imaging

Bears repeating for emphasis!
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ________
- Proptosis \textit{w/o} lid retraction = ________

Note: Some authorities argue that, in adults, \textbf{all} proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!
**Proptosis: Fill in the blanks**

- Proptosis + lid retraction = \[ \text{Graves disease} \]
- Proptosis \( \text{w/o} \) lid retraction = \[ \text{Imaging} \]
  \[ \wedge \text{Graves disease} \]

Note: Some authorities argue that, in adults, **all** proptosis (i.e., whether or not lid retraction is present) is Graves dz until proven otherwise!

**Are we talking about unilateral proptosis, or bilateral proptosis?**
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ____________
- Proptosis \textit{w/o} lid retraction = ____________
- \text{proptosis w/o lid retraction} \Leftrightarrow \text{Imaging} \Leftrightarrow \text{Graves disease}

Note: Some authorities argue that, in adults, \textbf{all} proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

Are we talking about unilateral proptosis, or bilateral proptosis? It can be either
Proptosis + lid retraction = __________

Proptosis without lid retraction = __________

= Graves disease

Note: Some authorities argue that, in adults, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

Where does TED rank as a cause of unilateral proptosis in adults?

Are we talking about unilateral proptosis, or bilateral proptosis? It can be either.
Proptosis: Fill in the blanks

- Proptosis + lid retraction = **Graves disease**
- Proptosis *w/o* lid retraction = **Imaging**
  \[\wedge\] = **Graves disease**

Note: Some authorities argue that, in adults, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

**Where does TED rank as a cause of unilateral proptosis in adults?**

#1
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ________
- Proptosis w/o lid retraction = ________
  = Graves disease

Note: Some authorities argue that, in adults, **all** proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

Are we talking about unilateral proptosis, or **bilateral** proptosis?
It can be either

- Where does TED rank as a cause of unilateral proptosis in adults?
  #1
- Where does TED rank as a cause of bilateral proptosis in adults?
Proptosis: Fill in the blanks

- Proptosis + lid retraction = \(\) Graves disease
- Proptosis \(\text{w/o}\) lid retraction = \(\) Imaging \(\land\) Graves disease

Note: Some authorities argue that, in adults, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

Are we talking about unilateral proptosis, or bilateral proptosis? It can be either

Where does TED rank as a cause of unilateral proptosis in adults? #1
Where does TED rank as a cause of bilateral proptosis in adults? #1
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ____________
- Proptosis w/o lid retraction = ____________
  ^ Imaging
  = Graves disease

Note: Some authorities argue that, in adults, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

What about in the pediatric population--is the relationship between proptosis and Graves dz as strong?
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ___ __________
- Proptosis \( \text{w/o} \) lid retraction = ___ Imaging

^ = ___ __________

Graves disease

Note: Some authorities argue that, in adults, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

Q/A

What about in the pediatric population--is the relationship between proptosis and Graves dz as strong?

No. Graves is rare in children, and when it does occur, only about 10% of pts present with proptosis. (Rule of thumb: In children, proptosis is more likely to be ___ or ___ than to be inflammatory.)
**Proptosis: Fill in the blanks**

- Proptosis + lid retraction = **Graves disease**
- Proptosis *w/o* lid retraction = **Imaging**
  
  $\wedge$ = **Graves disease**

Note: Some authorities argue that, *in adults*, all proptosis (ie, whether or not lid retraction is present) is Graves dz until proven otherwise!

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*What about in the pediatric population--is the relationship between proptosis and Graves dz as strong?*

No. Graves is rare in children, and when it does occur, only about 10% of pts present with proptosis. (Rule of thumb: In children, proptosis is more likely to be infection or neoplastic than to be inflammatory.)
Proptosis: Fill in the blanks

- Proptosis + lid retraction = **Graves disease**
- Proptosis *w/o* lid retraction = **Imaging**
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry—the so-called ‘limit of normal’—is ____________ reassuring? or cause for concern?
Proptosis: Fill in the blanks

- Proptosis + lid retraction = \underline{Graves disease}
- Proptosis \text{ \textit{w/o} lid retraction } = \underline{Imaging}
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called ‘limit of normal’—is \underline{highly suspicious for an orbital process}
Proptosis: Fill in the blanks

- Proptosis + lid retraction = ________
  - Proptosis w/o lid retraction = ________

If one suspects orbital disease, a 2 mm disparity on exophthalmometry—the so-called ‘limit of normal’—is ________

Ask the patient to ________ --if proptosis worsens, it’s probably an ________
Proptosis: Fill in the blanks

- Proptosis + lid retraction = **Graves disease**
- Proptosis *w/o* lid retraction = **Imaging**
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called ‘limit of normal’—is **highly suspicious for an orbital process**
- Ask the patient to **Valsalva**--if proptosis worsens, it’s probably an **orbital venous anomaly**
Proptosis: Fill in the blanks

- Proptosis + lid retraction = __________
  - Proptosis \( \text{w/o} \) lid retraction = __________
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called ‘limit of normal’—is __________
- Ask the patient to __________--if proptosis worsens, it’s probably an __________
- In evaluating proptosis, always consider contralateral __________

Graves disease
Imaging
highly suspicious for an orbital process
Valsalva
orbital venous anomaly
pathologic condition
Proptosis: Fill in the blanks

- Proptosis + lid retraction = \textit{Graves disease}
  - Proptosis \textit{w/o} lid retraction = \textit{Imaging}
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called 'limit of normal'—is \textit{highly suspicious for an orbital process}
- Ask the patient to \textit{Valsalva}--if proptosis worsens, it’s probably an \textit{orbital venous anomaly}
- In evaluating proptosis, always consider contralateral \textit{enophthalmos}
Proptosis: Fill in the blanks

- Proptosis + lid retraction = __________
  - Proptosis w/o lid retraction = __________
- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called ‘limit of normal’—is ___highly suspicious for an orbital process___
- Ask the patient to ___Valsalva___--if proptosis worsens, it’s probably an ___orbital venous anomaly___
- In evaluating proptosis, always consider contralateral ___enophthalmos___
- Auscultate for a ___pathologic sound___ (indicates ___dx___ or ___dx___)
Proptosis: Fill in the blanks

- Proptosis + lid retraction = **Graves disease**
  - Proptosis **w/o** lid retraction = **Imaging**

- If one suspects orbital disease, a 2 mm disparity on exophthalmometry--the so-called ‘limit of normal’—is **highly suspicious for an orbital process**

- Ask the patient to **Valsalva**—if proptosis worsens, it’s probably an **orbital venous anomaly**

- In evaluating proptosis, always consider contralateral **enophthalmos**

- Auscultate for a **bruit** (indicates **CCF** or **AVM**).
All of the following are likely to produce rapid proptosis in a child *except*: 
- Lymphangioma
- Orbital cellulitis
- Rhabdomyosarcoma
- Optic nerve glioma
All of the following are likely to produce rapid proptosis in a child *except*: 
- Lymphangioma
- Orbital cellulitis
- Rhabdomyosarcoma
- **Optic nerve glioma**
All of the following are likely to produce rapid proptosis in a child except:

- Lymphangioma
- Orbital cellulitis
- Rhabdomyosarcoma
- Optic nerve glioma

Under what clinical circumstances might a lymphangioma be expected to expand rapidly?

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All of the following are likely to produce rapid proptosis in a child except:

- Lymphangioma
- Orbital cellulitis
- Rhabdomyosarcoma
- Optic nerve glioma

Under what clinical circumstances might a lymphangioma be expected to expand rapidly?

- If the pt has an infection
- If the lesion undergoes three words
All of the following are likely to produce rapid proptosis in a child except:

- Lymphangioma
- Orbital cellulitis
- Rhabdomyosarcoma
- Optic nerve glioma

Under what clinical circumstances might a lymphangioma be expected to expand rapidly?

--If the pt as an upper-respiratory tract infection
--If the lesion undergoes spontaneous intralesional hemorrhage
All of the following are likely to produce rapid proptosis in a child except:

- Lymphangioma
- **Orbital cellulitis**
- Rhabdomyosarcoma
- Optic nerve glioma

*Under what clinical circumstances might a lymphangioma be expected to expand rapidly?*
--If the pt has an upper-respiratory tract infection
--If the lesion undergoes spontaneous intralesional hemorrhage

*How will a child with orbital cellulitis present?*
All of the following are likely to produce rapid proptosis in a child except:

- Lymphangioma
- **Orbital cellulitis**
- Rhabdomyosarcoma
- Optic nerve glioma

**Under what clinical circumstances might a lymphangioma be expected to expand rapidly?**

- If the pt has an upper-respiratory tract infection
- If the lesion undergoes spontaneous intralesional hemorrhage

**How will a child with orbital cellulitis present?**

S/he will usually be toxic—ill-appearing, febrile, and in pain, in addition to the ocular stigmata of proptosis, chemosis, etc
All of the following are likely to produce rapid proptosis in a child **except**:

- Lymphangioma
- **Orbital cellulitis**?
- Rhabdomyosarcoma
- Optic nerve glioma

**Under what clinical circumstances might a lymphangioma be expected to expand rapidly?**
- If the pt has an upper-respiratory tract infection
- If the lesion undergoes spontaneous intralesional hemorrhage

**How will a child with orbital cellulitis present?**
S/he will usually be toxic—ill-appearing, febrile, and in pain, in addition to the ocular stigmata of proptosis, chemosis, etc

If a child presents with ocular stigmata of orbital cellulitis but is systemically healthy and happy, what diagnosis should you consider?
● All of the following are likely to produce rapid proptosis in a child except:
  ● Lymphangioma
  ● Orbital cellulitis
  ● Rhabdomyosarcoma
  ● Optic nerve glioma

Under what clinical circumstances might a lymphangioma be expected to expand rapidly?
--If the pt as an upper-respiratory tract infection
--If the lesion undergoes spontaneous intralesional hemorrhage

If a child presents with ocular stigmata of orbital cellulitis but is systemically healthy and happy, what diagnosis should you consider?
Rhabdomyosarcoma

How will a child with orbital cellulitis present?
S/he will usually be toxic—ill-appearing, febrile, and in pain, in addition to the ocular stigmata of proptosis, chemosis, etc