Gross Photography

Nicole Cipriani, MD

2019

THE UNIVERSITY OF CHICAGO

Tools

MacroPath Stand

Camera

Key Points

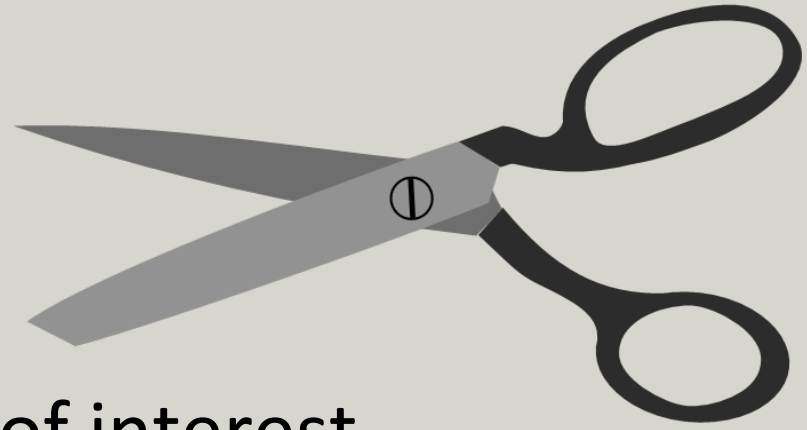
- What you should know by the end of this talk:
  - How to take a GOOD gross photo 😁
  - How to identify a BAD gross photo 😠
- You can ask Dr. Cipriani for help in:
  - How to clean up your gross (or microscopic) images in **Photoshop**
  - How to do easy image manipulations

Plan of Attack

- I’m going to show you a number of gross photos
  - (sorry if your photo shows up)
- And you will tell me what is **WRONG**

- We will also look at **GOOD** examples for comparison

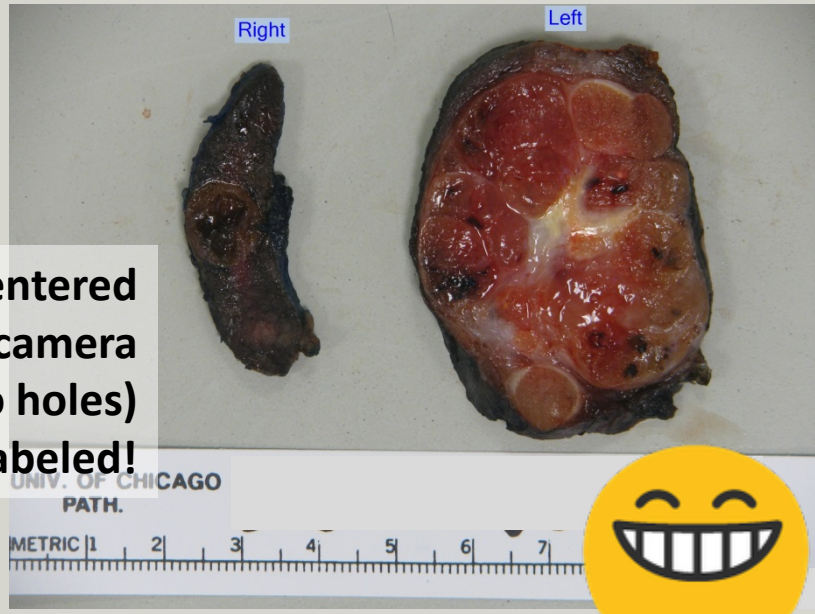
What's Wrong?



- The lesion of interest
  - Is so far off center that it got cut off
  - And has a hole in the middle (*maybe real defect)

Off-center
Cropped edge
?Missing tissue

Centered
All tissue on camera
Full face (no holes)
**** Labeled!**



What's Wrong?

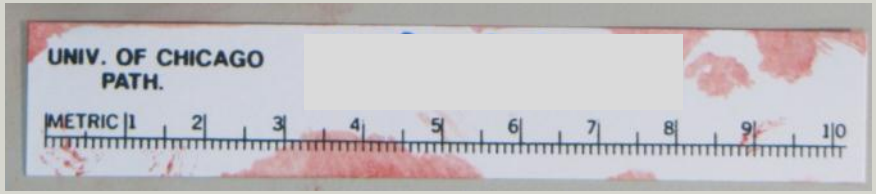
Chuck!

- Please try to **avoid chucks** if not necessary.
- Just use the provided plastic background surface.
- And make sure it is wiped clean.

What's Wrong?

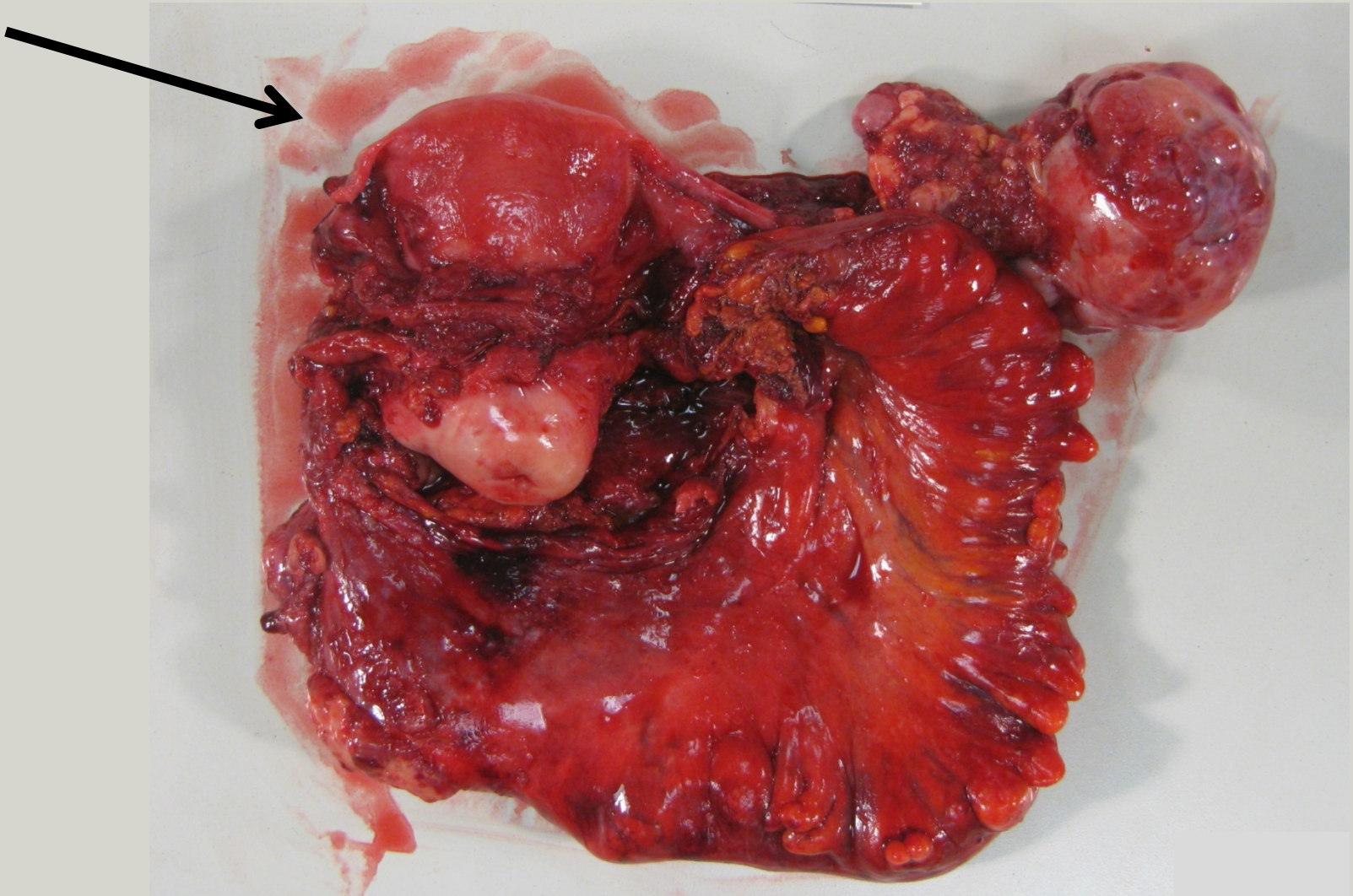
We are not blood splatter analysts

- So keep the background and label as **clean** as possible
- "I'm going to publish this picture, can't I just **Photoshop** the blood out?"
  - Yes, you can. Do you know how to do this? If not, wipe the table.
  - Cleaning up the background is not so bad.
  - But Cleaning up the Ruler is usually not easy if the blood and text overlap.

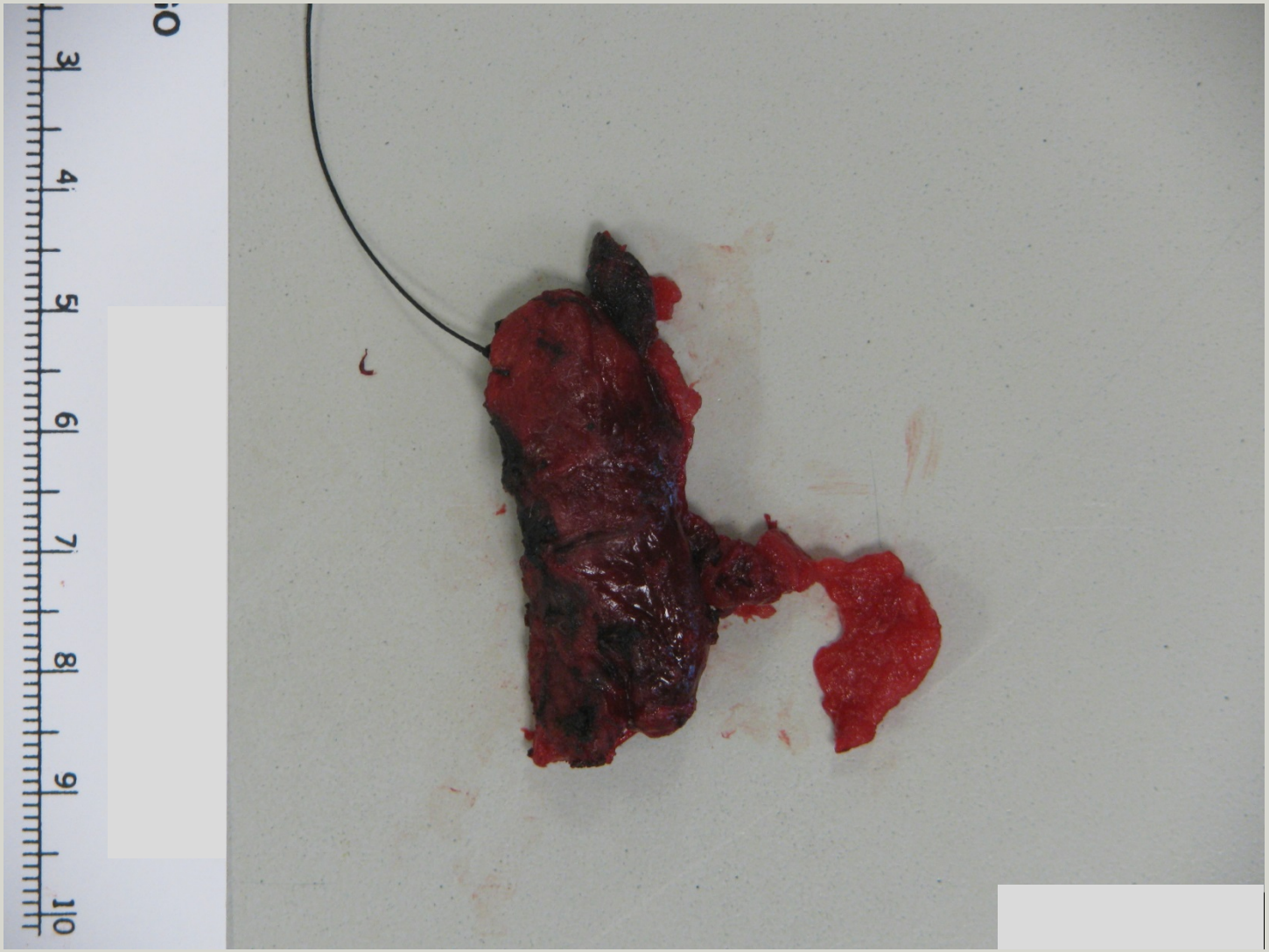


Also:

- You can **rinse** off the specimen with water and **pat dry** prior to placing on stage
- This may help with drippy blood
- The water won't ruin the tissue



This is the only image. What's Wrong?

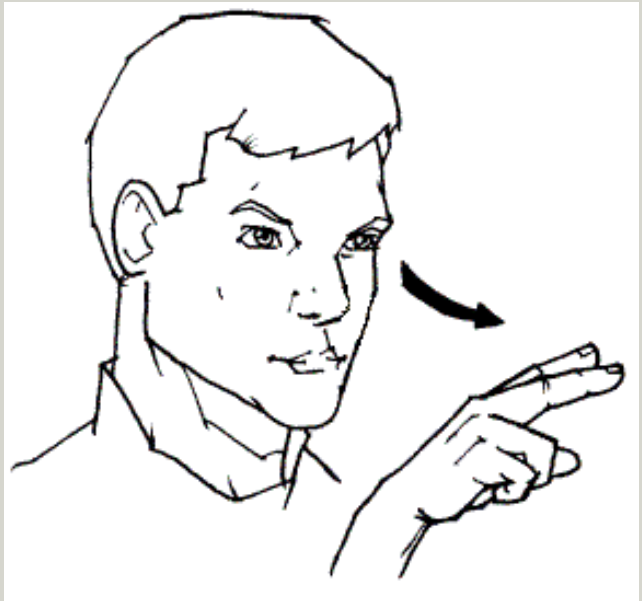


No Info

- This image does not give any information on the lesion
  - Helps for orientation, if that is an issue
  - If you are going to show me the outer surface…
    - **SHOW ME THE TUMOR**

M DRIVE

- If you are not sure what photos have been taken at **triage**…
- LOOK IN THE **M DRIVE**
  - At a computer near you



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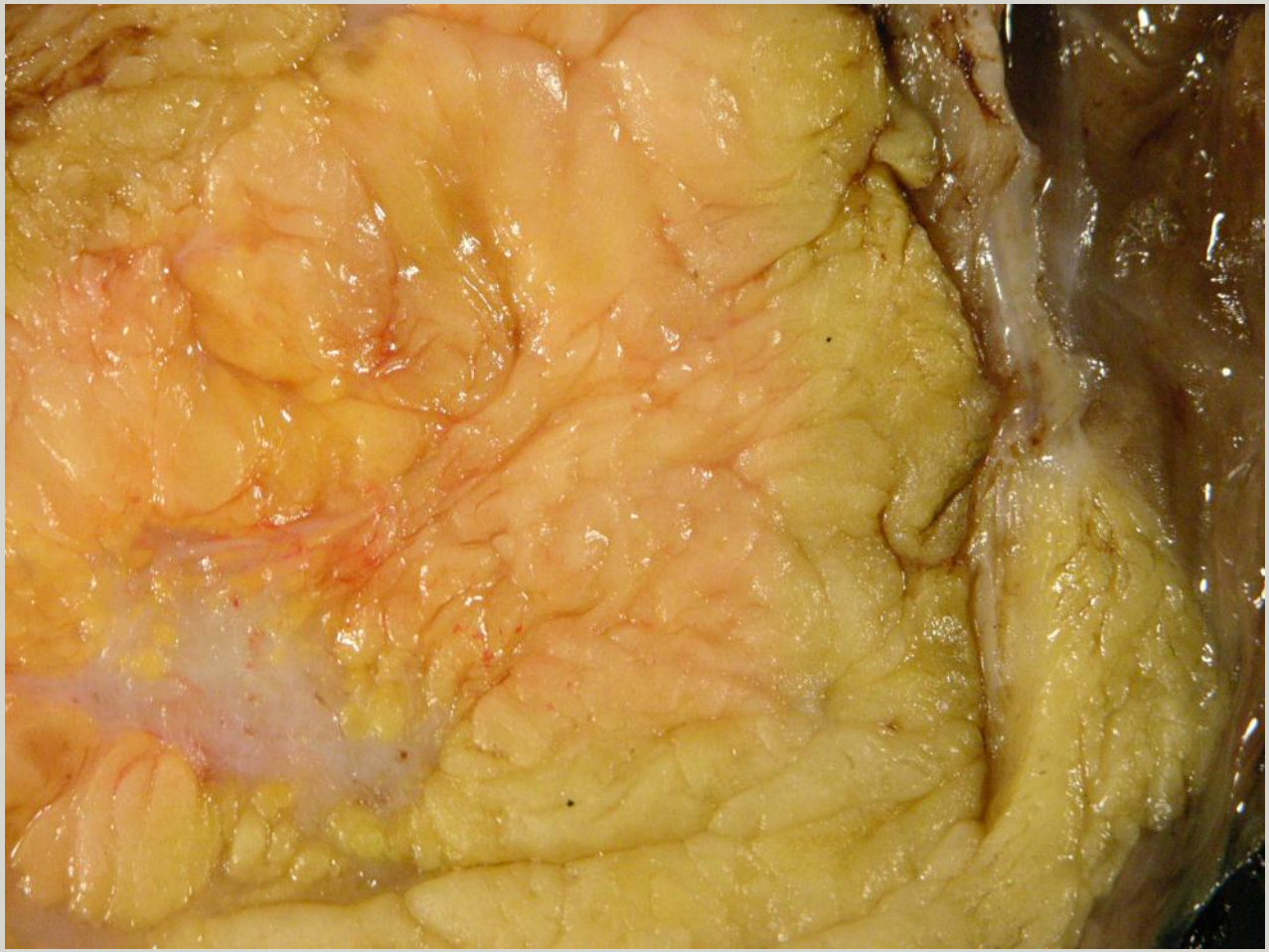
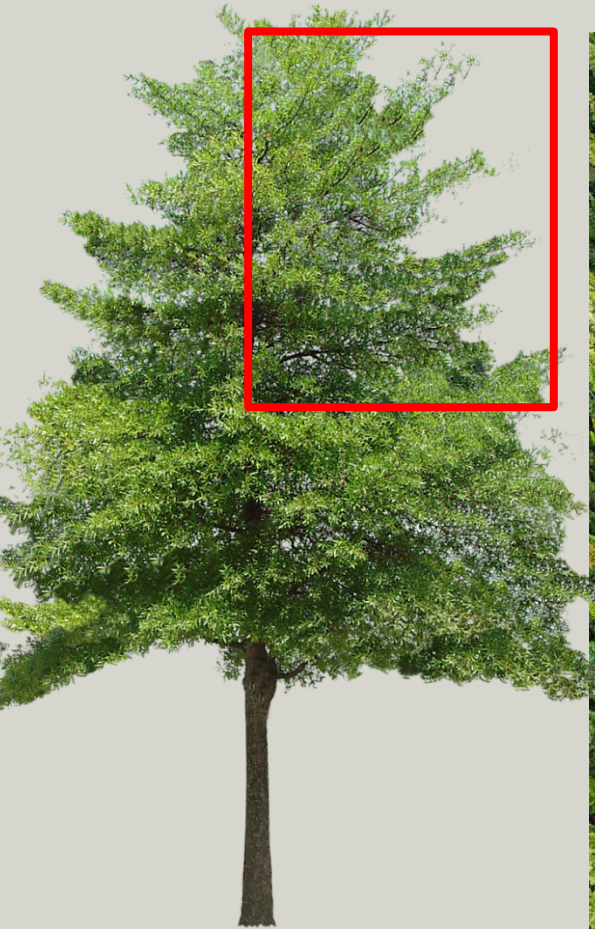
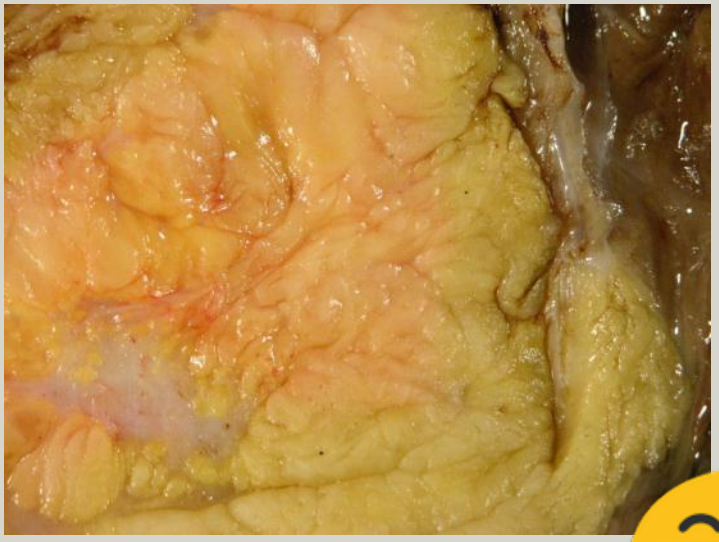


Where am I?

- Don’t lose the forest for the trees!



Don’t lose orientation:



- It’s ok to take a close-up on a **region** of interest…
- Just be sure to take an image that includes the **whole section**.

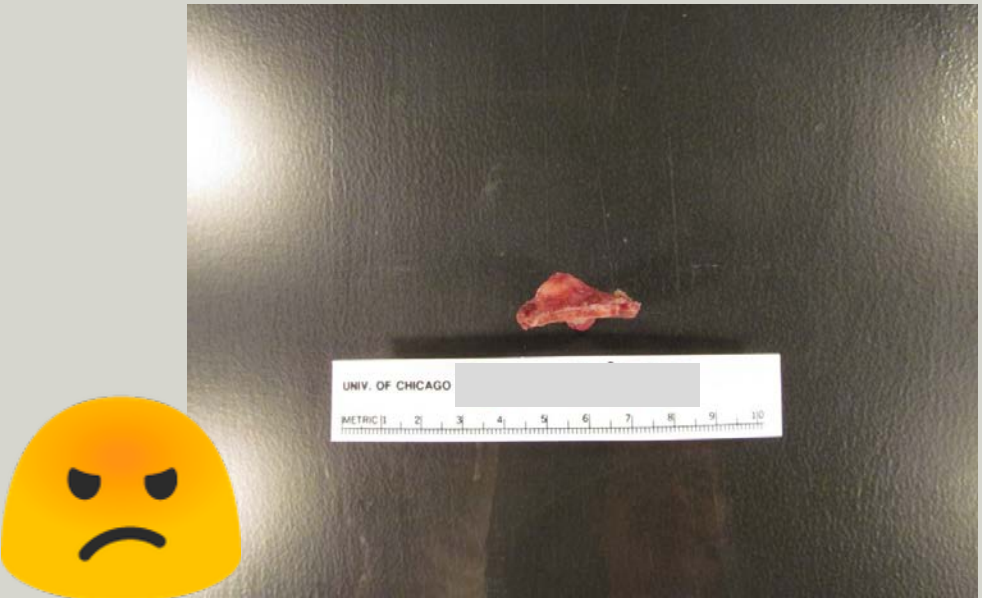
What's wrong?

Where am I?

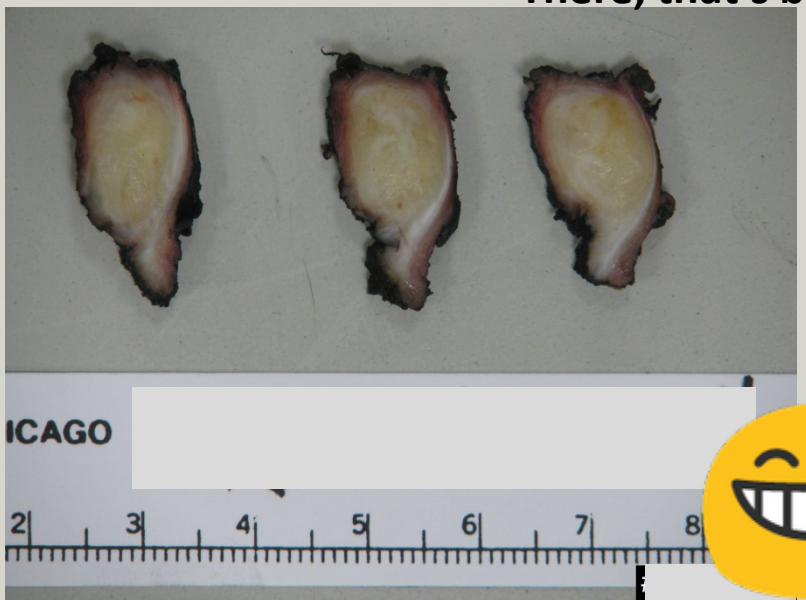
- Don’t lose the trees for the forest!

It’s so small!

- Try to **zoom in** as far as possible so that the object fills the frame.
- The MacroPath has pre-set zooms which are not perfect, but do the best you can.
- The camera **focus** and **adjusts** exposure settings **better** if the tissue fills more of the frame.



There, that’s better.



If your specimen is small, you don't have to get the WHOLE ruler in

Keep going…

Just a few mm marks is all you need

Peritoneal Dialysis Catheter. What's wrong?

Doesn’t need a photo!

- Oh my gosh I thought I would never say this.

- You do NOT have to photograph all hardware or foreign bodies.

Objects that REQUIRE a gross photo:

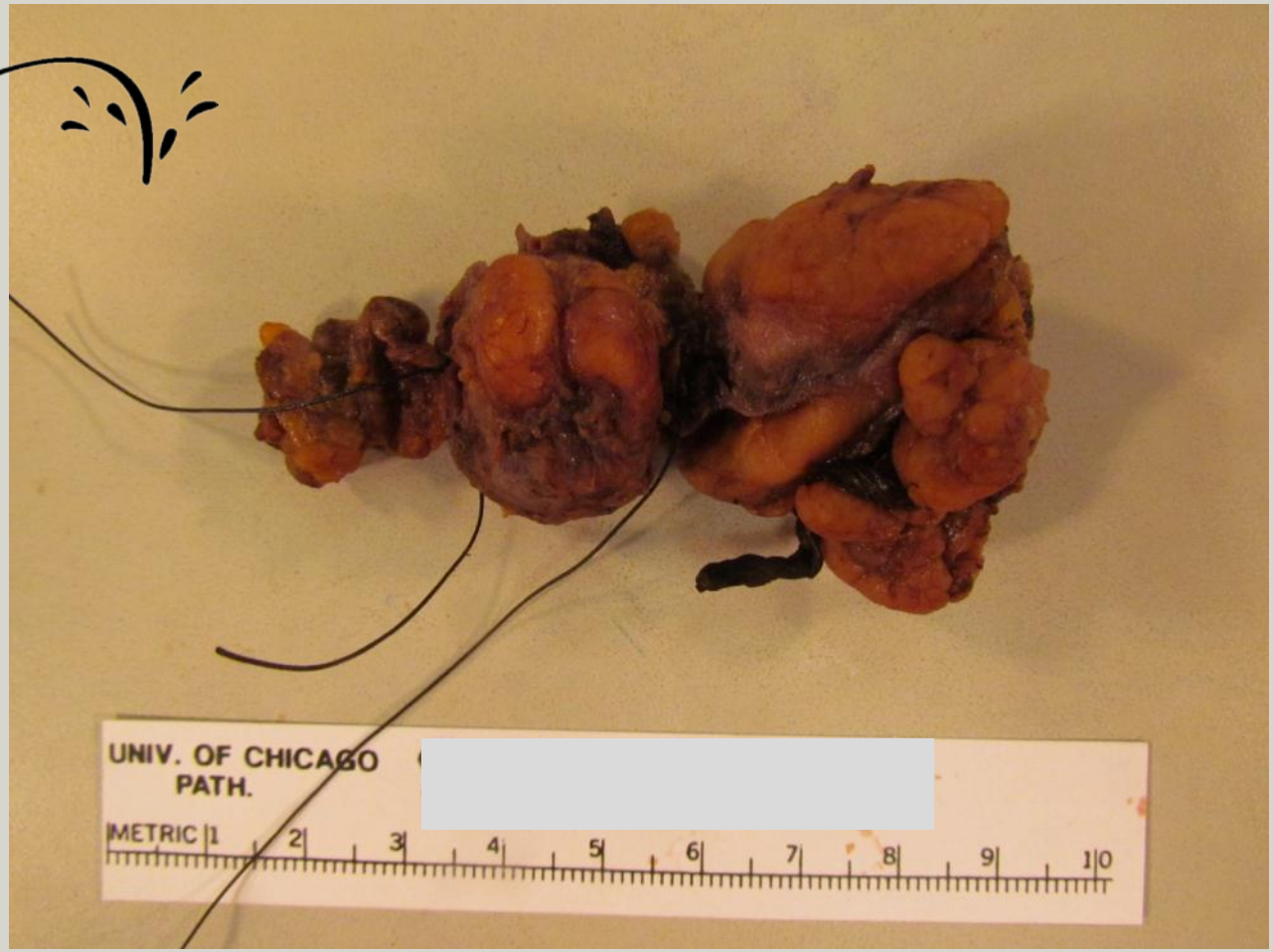
- Breast implants (not expanders)
- Bullets
- Legal cases
- Cardiac hardware (usually returned to manufacturer)
- ANY object to be **returned** to physican or patient

Objects that DO NOT require a gross photo:

- Chemotherapy ports (port-a-cath) or Dialysis catheters
- Orthopedic hardware (arthroplasty revisions)
- Routine foreign objects (pennies, peas, plastic pieces, etc)
- UNLESS the object is to be **returned** to physician or patient! Then it must be photographed.

CHECK THE WEBSITE: https://voices.uchicago.edu/grosspathology/gross-only-specimens/

What's wrong?



Too yellow!

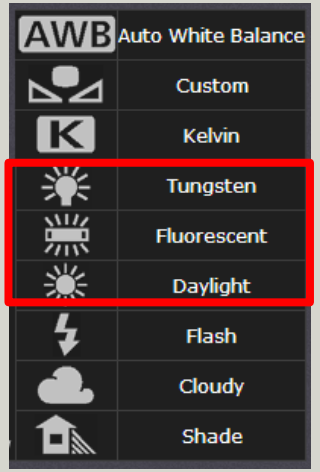
- If your photo looks like this, either:
  - You urinated on the table
  - Your **white balance** is incorrect
- I hope it is the latter.
- If you see this and do not know how to fix it, please ask a PA or Nicole!
- Usually not an issue with MacroPath, but may be a problem with Canon if not set properly

Lighting, in a nutshell

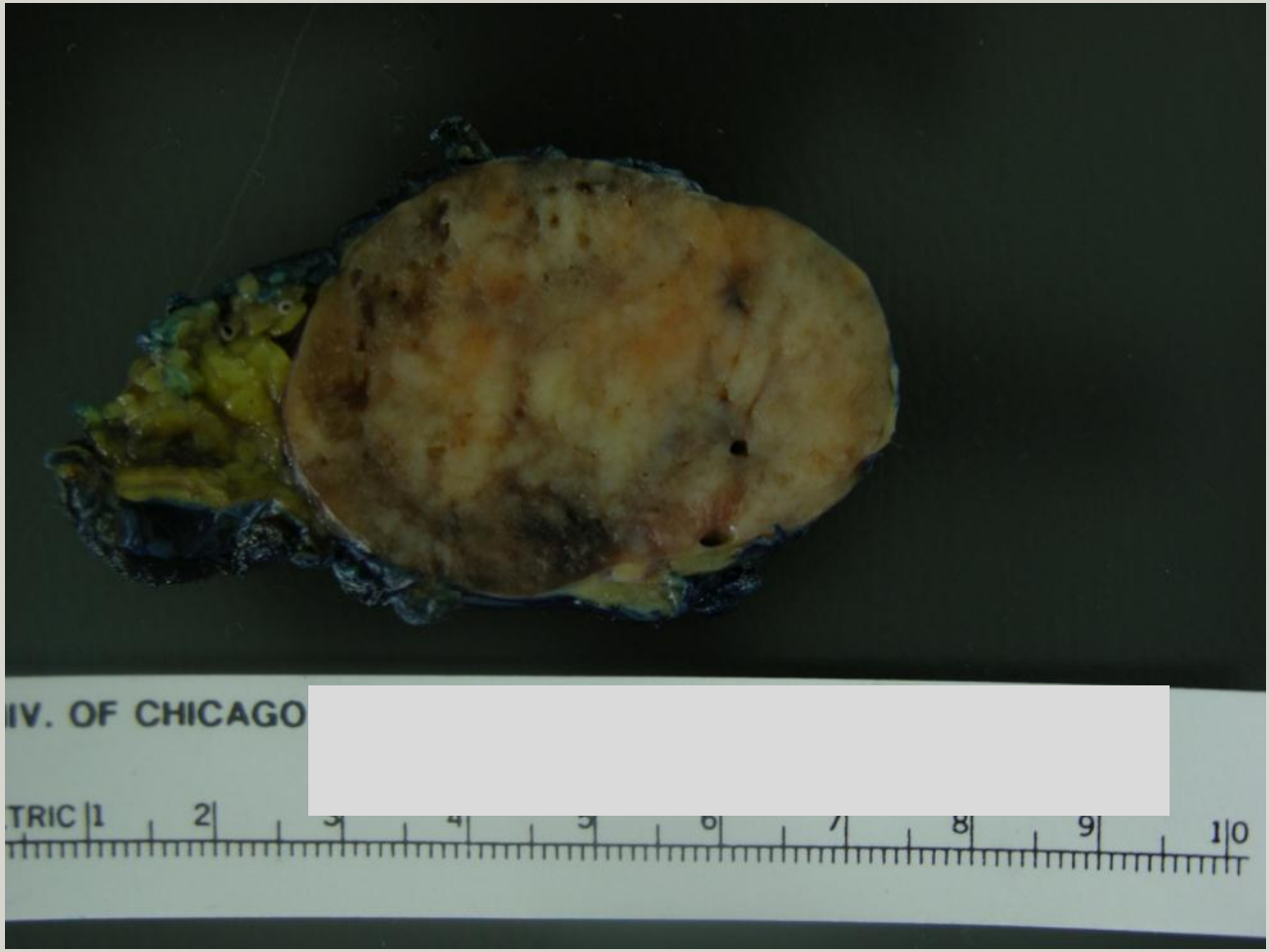
- Common temperatures of light:
  - Daylight = “ideal”
  - Fluorescent bulbs = **bluish** cast 
  - Tungsten bulbs = **yellowish** cast 
- So the prior picture was probably taken in _____ light with an incorrect WB.

Help, I‘m in a nutshell!

You can change the WB settings if this is a problem:
ASK FOR HELP

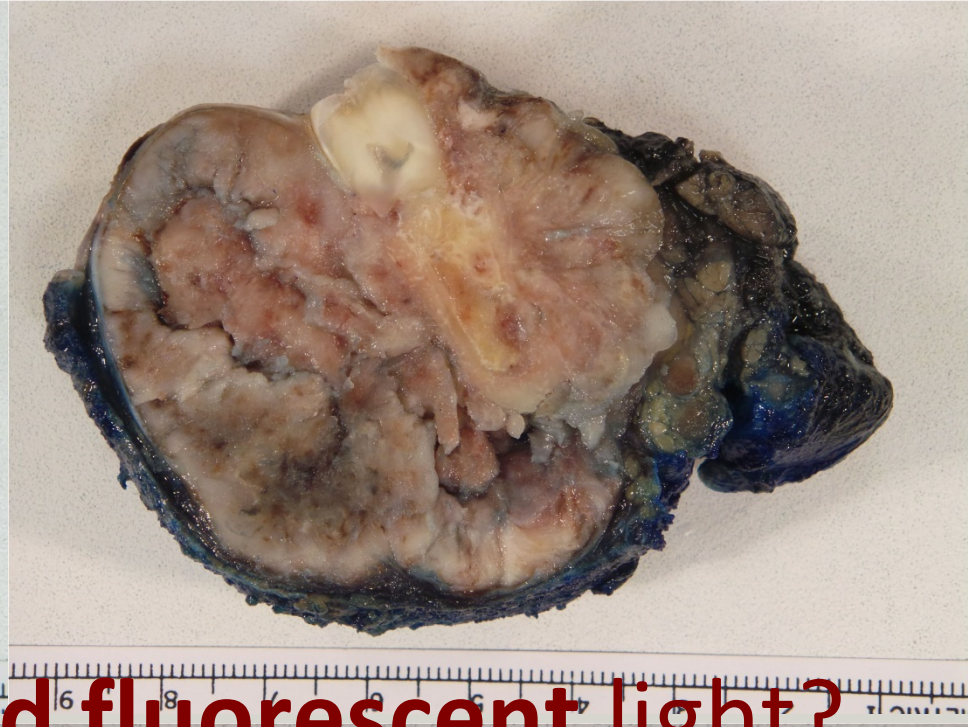


What's wrong?



Total eclipse of the sun

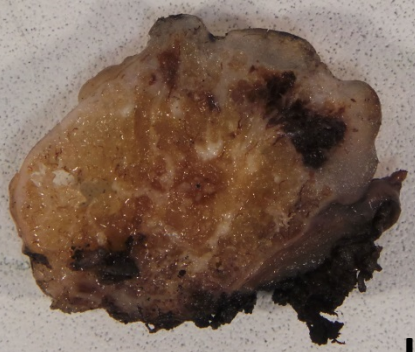
- Please check your lighting conditions
  - Light stand
  - Camera settings
- I recommend taking a photo with the light stand **on** *and* with the light stand **off**
- Sometimes one is better than the other



Which are **overhead fluorescent** light?
Which are **tungsten light stand**?

Cool tones
= fluorescent

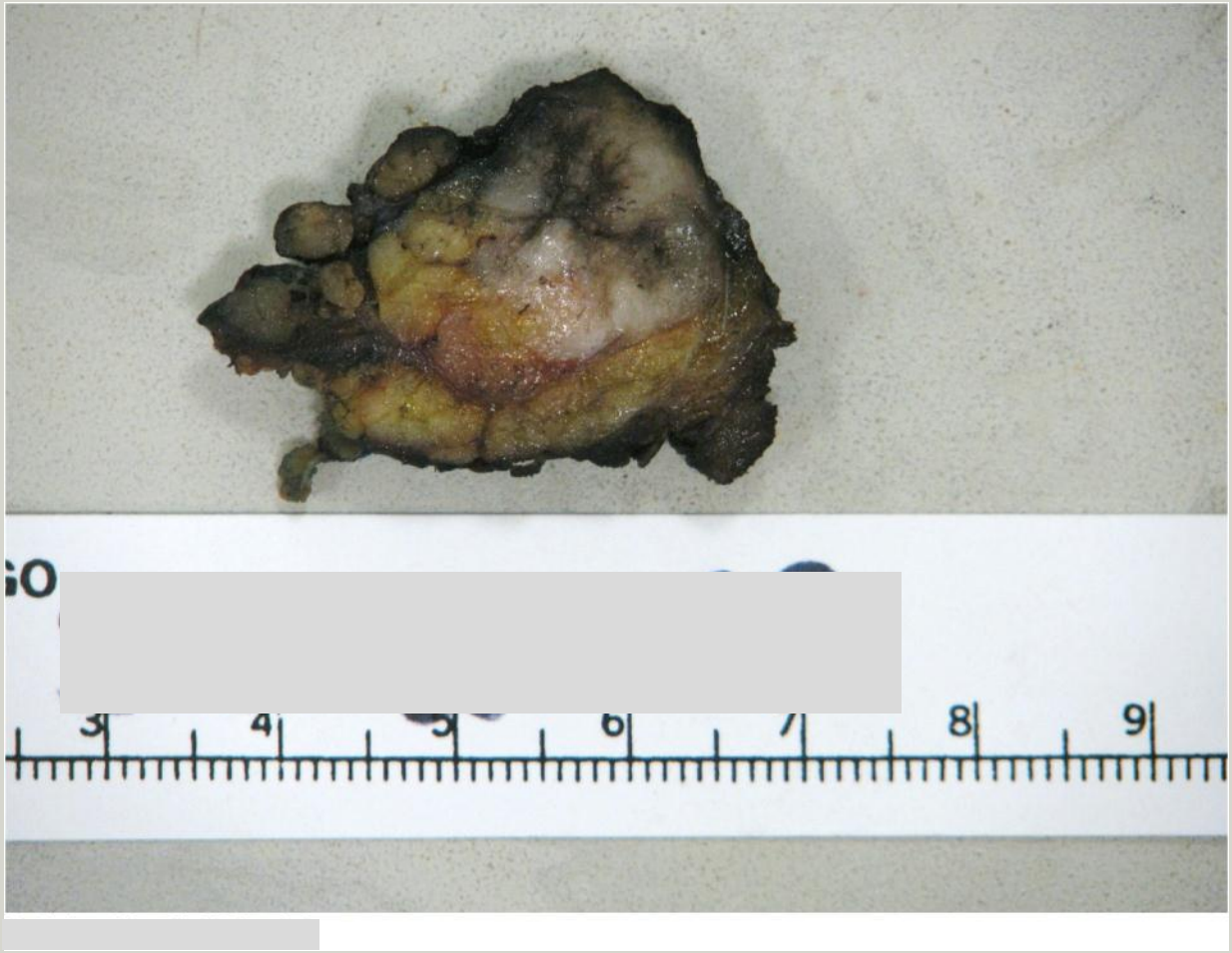
Short shadows
= more direct
(overhead)



Warm tones
= tungsten

Long shadows
= more indirect
(angled bulbs)

What's wrong?



Is it dusty in here?

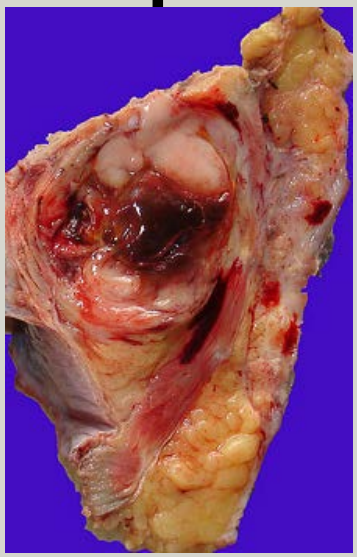
- Try to rinse / wipe off as much **ink** as you can from the cut surface
- Better yet, try to avoid getting ink on the cut surface
  - Change your inkey gloves
  - Rinse off specimen before photographing
- The specimen should not look like a chimney sweep

What's wrong?

Don't "bivalve!" These tissues are hanging on by a useless thread!

Mirror Image!

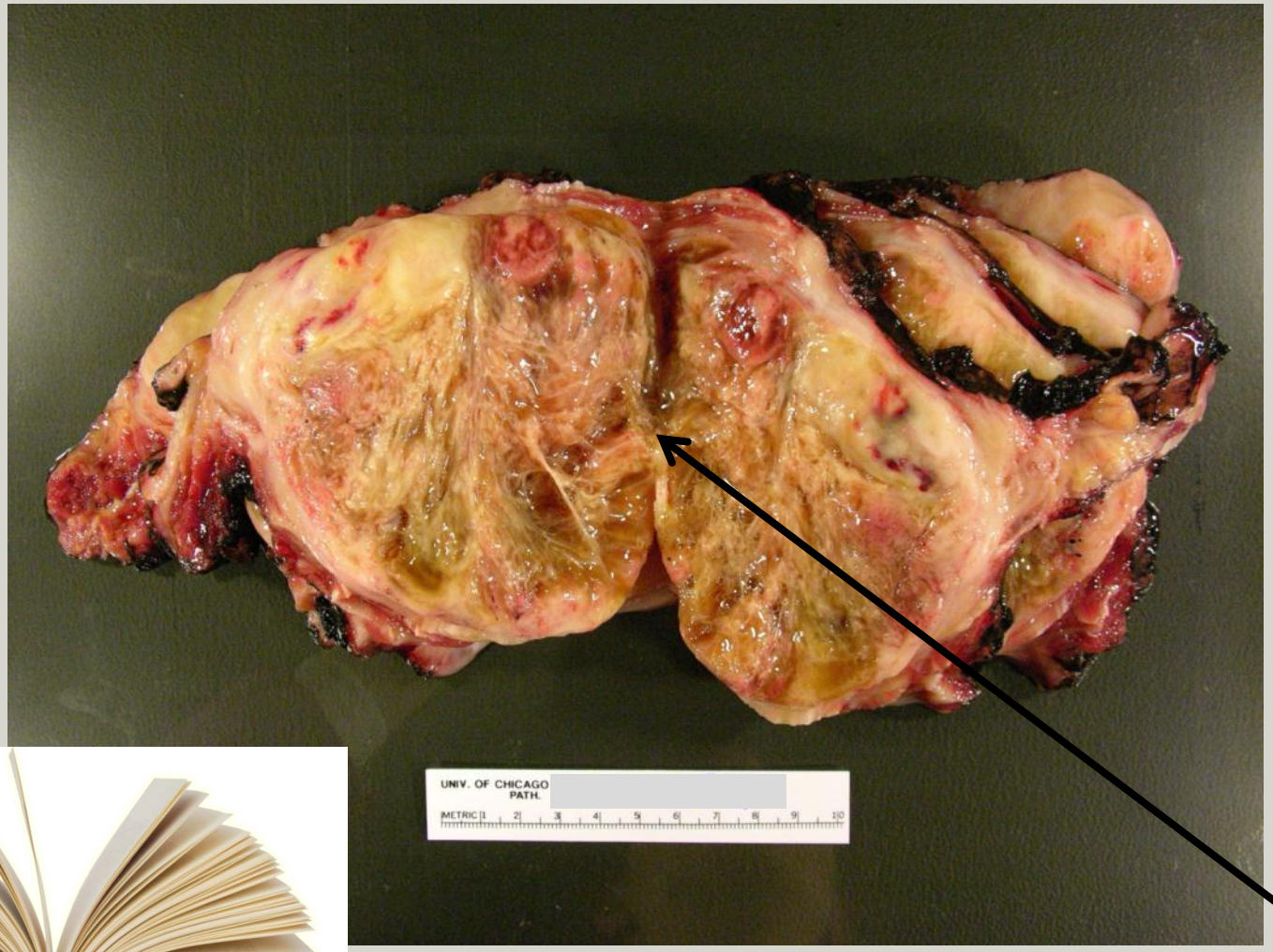
- Does keeping the specimen partially intact to photograph the “mirror image” add anything to our understanding?
- Section completely and photograph **ONE half or ONE complete cross section:**

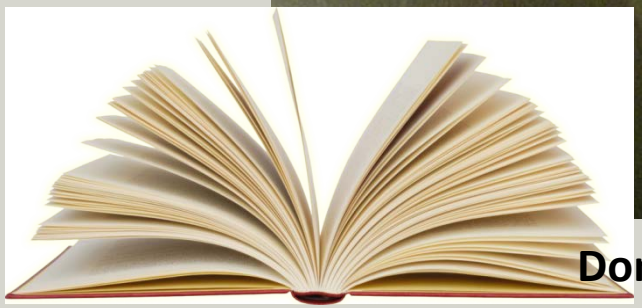


Another One!

- We are NOT trying to make inkblot tests with our specimens… Please **SECTION ENTIRELY**

This is not a mastectomy. What's wrong?





Don't "bookend"! Interesting things may be hiding in the crevasse.

Bread Loaf!

- For serially sectioned specimens, section **completely** and photograph **complete** cross sections.

- If you make **multiple complete sections**, the specimen can be **placed back together in proper orientation** and **wrapped** nicely in gauze.

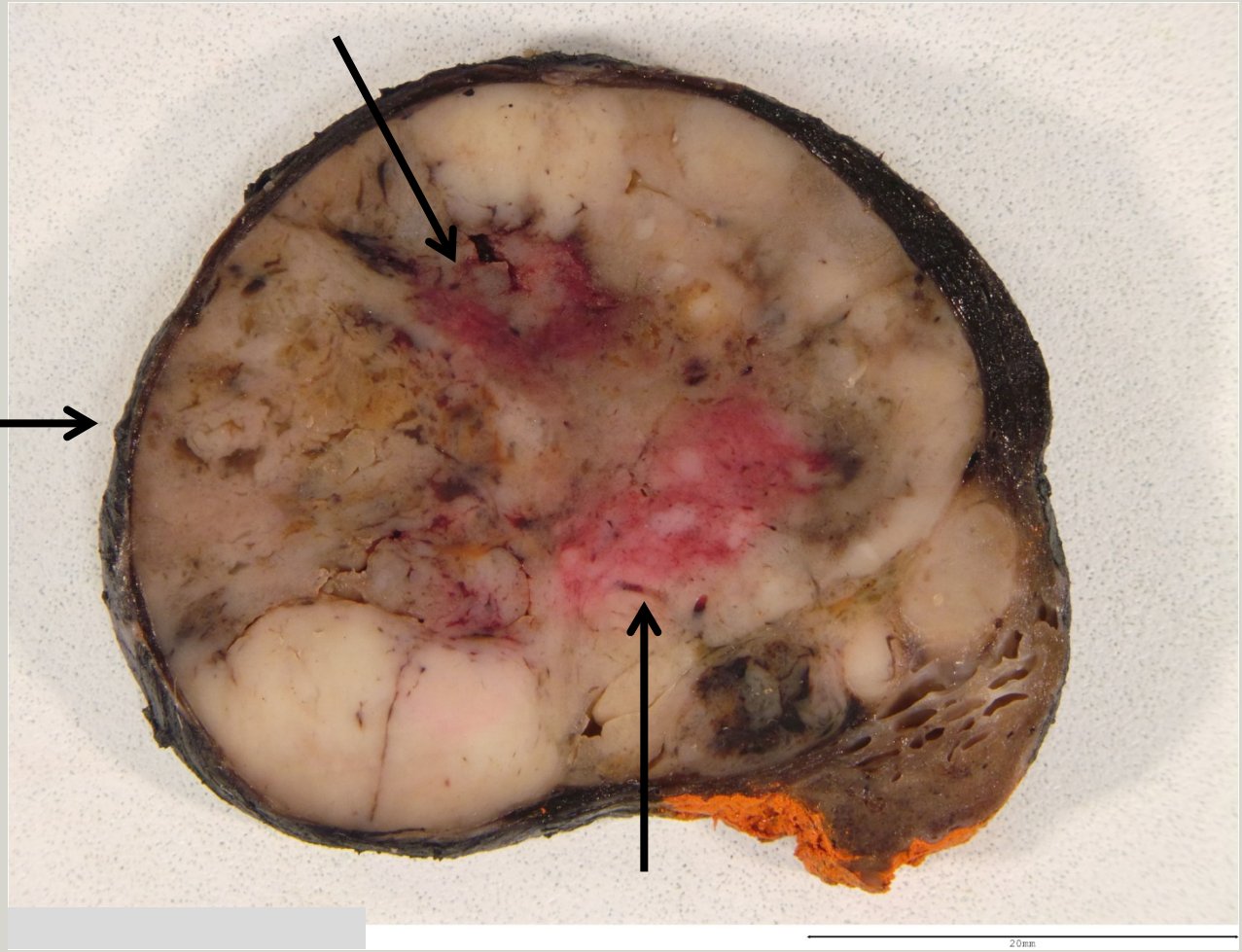
I repeat

- You will NOT LOSE orientation if you cut entirely through.
- Just put the sections back together again.
- Wrap.

Don’t forget to put gauze
IN BETWEEN slices to wick formalin in…
Otherwise your cuts are rendered useless

Always photograph fresh if possible!

- Partially fixed tissues tend to have unfixed "blood spots"
- Not an issue if taken fresh
- True colors are best seen fresh!



What's wrong?


UNIV. OF CHICAGO
PATH.
METRIC 1 2 3 4 5 6 7 8 9 10
UNIV. OF CHICAGO
PATH.
METRIC 1 2 3 4 5 6 7 8 9 10
UNIV. OF CHICAGO
PATH.
METRIC 1 2 3 4 5 6 7 8 9 10
UNIV. OF CHICAGO

Ok now, let's not get carried away.

- Thank you for completely sectioning the specimen so that the edges are not stuck together!
  - However
- Is every slice necessary?

- If not, photograph **pertinent representative** section(s)

What's Wrong?

Did you

- Section and take your full thickness photographs **BEFORE** carving out tissue for submitting

- DON’T

Advanced Skills

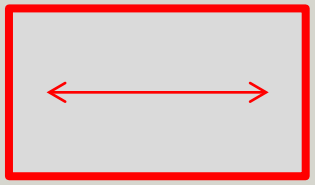
- We got the basics…
- What else can you do to improve your photos?

- Examples of  photos

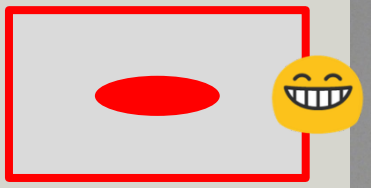
? Room for improvement

Improvement: Orientation/Zooming

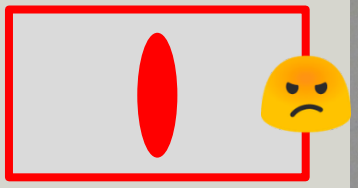
The camera has a horizontal aspect ratio (wider than tall)



So you can place the specimen longitudinally in the frame



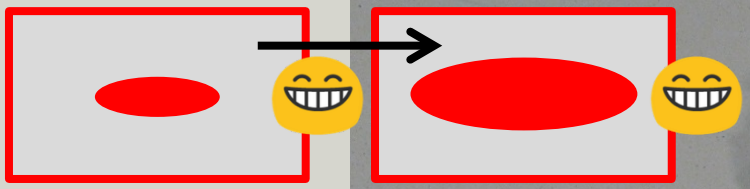
vs



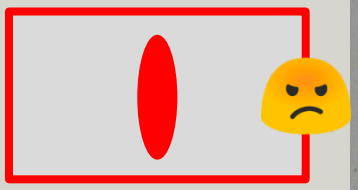
Improvement: Orientation/Zooming

And ZOOM IN!

This positioning will allow you to increase zoom
And fill the frame



vs



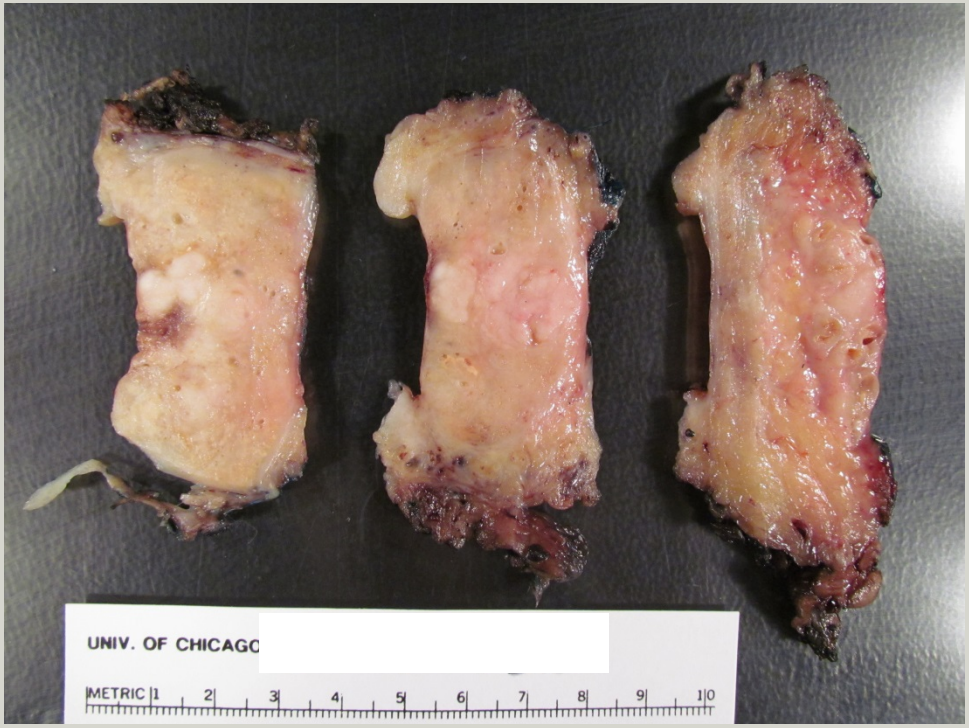
Improvement: Propping

Not Bad 😕

WIDER 😁

Nice overview
Taken fresh

Cut sections of mass
Fully fixed



Nice overview
Taken fresh

Cut sections of mass
Mostly fixed

FRESH

- I encourage you to take as many FRESH photos as you can
  - Better color/texture, Better interpretation of lesions vs normal

Fills the field of view

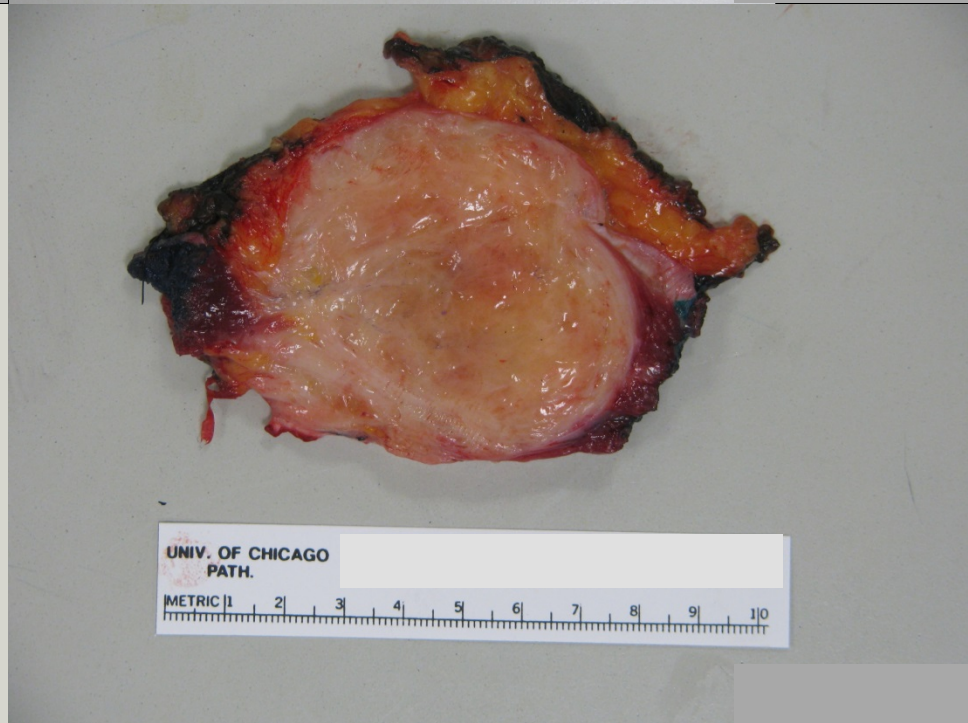
-Front

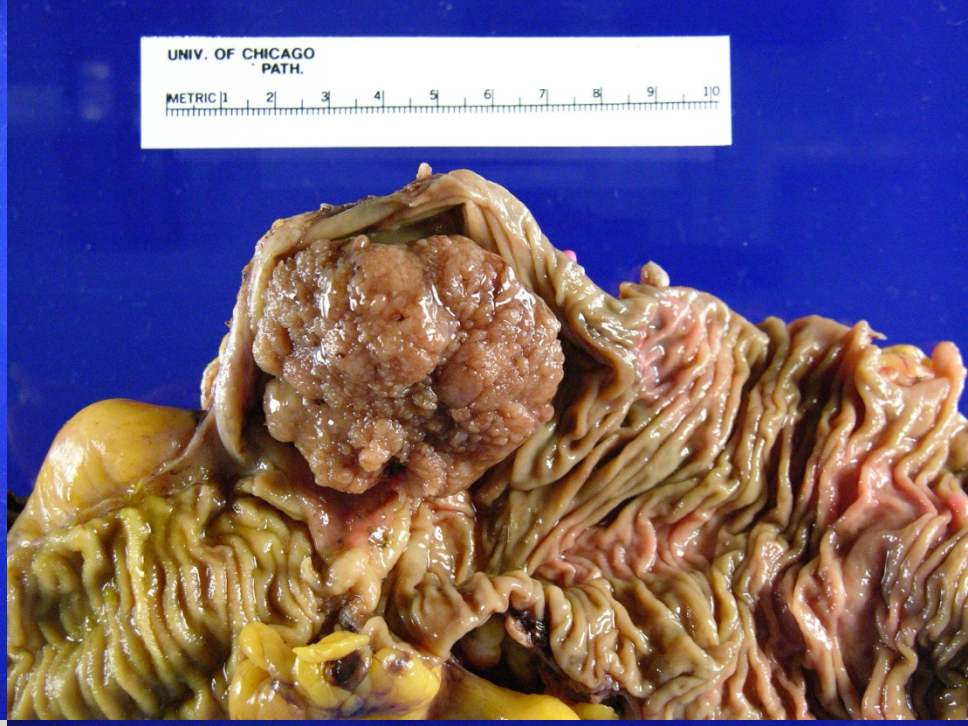
-Back

-Full Thickness

Section

-Fresh





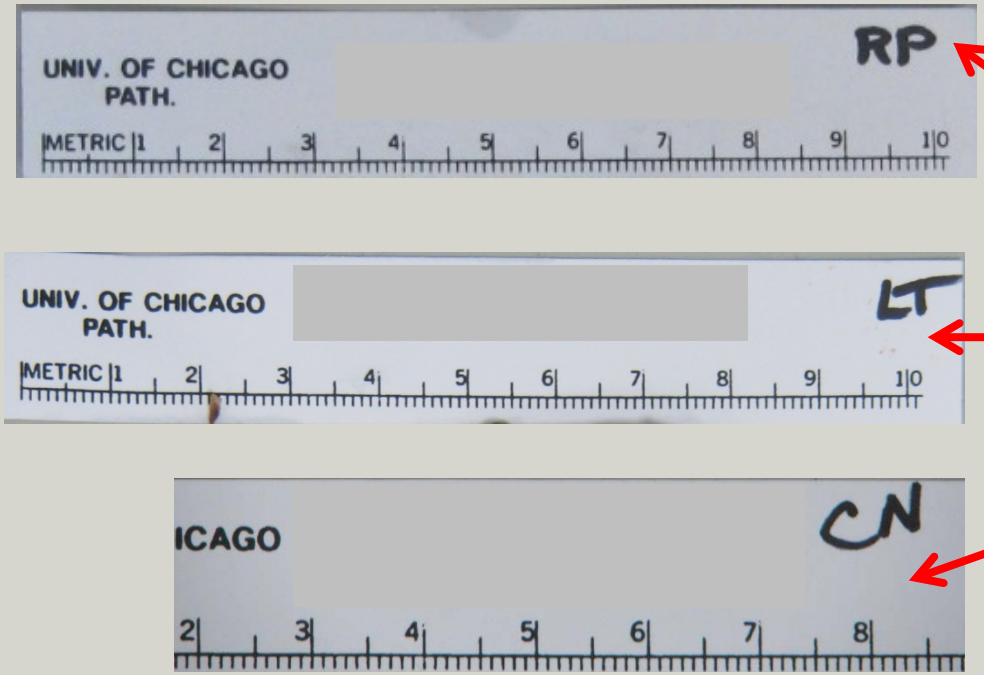
-Overview

-Close up lesion

-Cut section

lesion

Thanks for your initials!



Take credit for your good work