Gross Photography

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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 😞

• If time allows, or if you want to ask me for help:
  – 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)
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**

  THIS Should always be accompanied by THIS
M DRIVE

• If you are not sure what photos have been taken at triage...

• LOOK IN THE M DRIVE
  – At a computer near you
This is the only image. What’s wrong?
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 physician 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: [http://grosspathology.sites.uchicago.edu/page/gross-photography](http://grosspathology.sites.uchicago.edu/page/gross-photography)
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:
• 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?
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**

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**TAKE A BITE OUT OF SPECIMEN**
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

 внешне
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
Thanks for your initials!

Take credit for your good work