Processing an Ear Wedge:
by Alex Lutz

Goals of this Talk
- know basic anatomy of the ear
- discuss proper mapping of a wedge specimen
- review maintaining proper orientation of wedge specimen
- orientation and true margin of wedge cases
- 3 dimensional aspect of these unique cases

Anatomical Terms
- Superior Crux
- Inferior Crux
- Conchal Bowl
- Tragus
- Anti-Tragus
- Helix
- Scapha
- Anti-Helix
- Lobe/Lobule

Wedge Excision:
- be present if possible
discuss orientation with the surgeon
specimen is excised “through and through”
specimen does not have traditional deep margin
Central Anterior Posterior

Ms. Piggy
R helix

1-2 A

Mapping:
- draw the map with the surgeon present
- Ear wedges must always be bisected to show full representation
- draw 2 maps (2 dimensional /3 dimensional)

The Key

1. anterior/inferior
2. anterior/ superior
3. posterior/inferior& superior

Inking Before Prepping:
- Easier to keep orientation.
- Can get messy and inks may run while prepping.
Prepping before Inking:

- Easier to prep without worrying about inks running.
- Personal preference.

Prepping:

- Use sharp blade to minimize any mis-presentation of tissue.
- True wedges that are cut in straight line are easy to prep.

- Always swipe in one "clean" swipe if possible through the apex.

De-bulking a Large Wedge

1. Debulk
2. Bisect

- Only de-bulk when the specimen is too large (high) to mount if not done.
- If you de-bulk bisect at the purple line.

Anterior-Superior red

- To make sure the margins are laying flat turning the specimen on its side. Bisected side up and true margins laying down flat.

Mark 12 o'clock on your cutting board
Embedding:
- Which ever embedding technique you are using place piece 1 on the left side and piece 2 on the right side.
- Your bisected and un-inked side is up.
- Make sure your specimens are positioned this way to avoid the blade cutting into the epidermis first. (to avoid rolling)

Angling:
- To avoid wasted tissue and false positives or negatives make sure you angle your specimen well. On cryostats that don’t have this option make sure you don’t mount the specimen crooked.
- Molds also will work fine. You need to have flat surface to mount on so you are not wasting tissue and getting a false positive or negative.
- Other techniques are not very suitable for wedges.
Cutting and Pick Up:
- Take early sections to avoid unnecessary levels.
- Optimal cutting temperature for the cartilage is -15°C.
- Cartilage does not adhere well with dehydration fixation so use positively charged poly-l-lysine coated slides.

Additional Stages:
- No bisecting.
- Make sure you know what the true margins are!
- Process specimen in the same manner as first level.
- Continue with same color scheme to make it easier for the surgeon to read.

- Connective tissue between cartilage & dermis is very delicate and tears easily so take care when picking up.
- The cartilage (that often gets squashed and frozen to lay flat) tends to recoil slightly as it comes across the blade causing the delicate connective tissue between cartilage and dermis to tear. So take care when picking up.
- Make sure your blade is sharp and the temperature is right.

Staining:
- Use standard H&E staining protocol.
- Be careful when staining. Cartilage washes off easily!
- Make sure the cuts are well fixed to the slide. (You can use alcohol, air dry, heat, formalin or any other form dehydration.)
- Use a timer or if you are using a linear stainer make sure the times in the H2O are not too long.
- Thicker the cuts are easier they wash off the slide during staining and harder they are to read for the surgeon.
- For great results change your reagents regularly!