**Purpose**

The square procedure is a staged excision technique through which the surgeon obtains marginal status/control of a given lesion before definitive excision. Although it can be adapted for other types of cancer, this technique is generally used to treat lentigo maligna type melanoma of the head and neck, because it is often characterized by sub-clinical extension of neoplasm away from the main lesion (i.e., the extent of the neoplasm cannot be determined visually/clinically). The procedure is performed using a 2-bladed scalpel, in which section width controlled by spacers (image to be inserted). The resulting specimen is a geometric shape formed by a 2-3mm thick strip of skin, which, in effect, represents a ‘shave margin’ of the lesion and allows the pathologist to view 100% of the peripheral margins. The specimen is accompanied by a detailed diagram, such that if one or more of these ‘margins’ are positive, subsequent excisions (stages 2, 3, 4 etc.) can be performed and tailored specifically until all are 100% cleared while allowing conservation of as much uninvolved tissue as possible. It is only after the margins are cleared that the central island (containing main lesion) is excised. **[Note: A square excision can have more than 4 sides! It is simply the name of the procedure].**

**Procedure**

There are 3 types of specimens or situations associated with the square procedure:

* **Square** – is a geometric, peripheral skin excision in which margins are converted into strips of skin with angled corners. The center is empty space, representing the central island/lesion remaining on the patient.
* **Central excision/Island** – is the skin containing lesion at the center of a square. The only important margin is deep, as the periphery has already been cleared.
* **Full Square** – is a combination of the two terms above. This specimen not only has peripheral margins that need to be assessed, but also a central island.

As alluded to, all square excisions will be oriented and accompanied with a detailed diagram, in which each side is lettered, on the requisition (image to be inserted). Most central island excisions will be un-oriented whereas full squares will be orientated: **Always check laboratory reports or patient notes in Careweb** to determine if a square procedure has been previously done and margins are cleared. It is often that an oriented, full square will come from plastic surgery, in which case the peripheral margins will have to be shaved by the grosser (see procedure for full square).

**Important: If it is your first time grossing a square; it should at LEAST be supervised by a PA, qualified resident or attending dermatopathologist!!!**

**Procedure for Square**

Note: before grossing, it is important to make sure the specimen has been pinned to Styrofoam and fixed in formalin for at least 8 hours. This will prevent the skin from curling and aid the histotechnologist in cutting properly oriented (full epidermis/dermis) sections. This is usually performed with the submitting surgeon when the specimen is delivered.

* Measure each of the assigned sides of the square and note suture as well as orientation.
* Dry the specimen thoroughly as ink will run all over!
* Using the wood end of a Q-tip, ink the outside and deep corners/junctions or ends. It is important to alternate ink colors every other junction or end so that the specimen can be oriented appropriately at the microscope. Do not get ink on the epidermis! **Note: Do not use red ink in this step as red ink will be used later to mark which side to embed down!**
* Give the inking scheme in the dictation and note which designated junctions or ends are inked which color.
* Using the wood end of a Q-tip, ink the outside periphery by way of small dots in red ink. Do not get red ink on any other surface besides the outside periphery! The red ink tells the histotechnologist which side to embed down.
* Carefully spray the specimen with acetone, blotting immediately with paper towels. This will help prevent ink from running.
* Cut the junctions at 45º angles (see picture)
* Place each side into corresponding cassettes, epidermis up. For example, side H goes in cassette H. Sandwich specimens between two sponges. If possible, orient the specimen with the epidermis facing up to prevent curling.
* All squares should have a SQ printed on the cassette below the accession number, except sections from the central island. Note on the cassette log in sheet, which cassettes are to be embedded and cut as squares (simply write SQ in additional info). These steps alert the histotechnologist for the special attention and orientation that is needed.

**Sample Dictation**

Labeled “stage 1 right temple”, received in formalin in a small container is a six sided, oriented square excision (A to F). A suture is identified at the A/B junction. Measurements as follows: side A-1.0 x 0.3cm, side B-1.0 x 0.2cm, side C-1.0 x 0.3cm, side D-1.1 x 0.3cm, side E-1.0 x 0.3cm and side F-1.0x 0.2cm. The specimen is excised to a depth of 0.4 cm. Inking as follows: A/B, C/D and E/F junction’s blue. B/C, D/E and F/A junctions green.

**Cassette Summary (see attached diagram):**
Cassette A- side A
Cassette B- side B
Cassette C- side C
Cassette D- side D
Cassette E- side E
Cassette F- side F
(1 ns in each cassette)

**Procedure for central square/island:**

* If the specimen is designated as a central square, **check laboratory reports or patient notes in Careweb** to verify that a square procedure has been previously done and margins are cleared. Almost all central squares will be unoriented, although an occasional case may be oriented.
* Gross as an unoriented ellipse (section diagonally, two corners as tips).

**Procedure for Full Square:**

* Check orientation and take either a digital picture or draw a diagram if not given by submitting surgeon.
* Ink the periphery in the same fashion as above (see Procedure for Square) making sure to alternate colors of ink at every junction. Remember to use red ink on the peripheral soft tissue margin as this will indicate the surface to embed down.
* Shave the outer periphery into segments 0.2-0.3 cm in width, and no more than 2.5 cm in length, if not previously determined.
* Place each shaved margin into corresponding cassette (epidermis up). If not previously labeled, document location of each shave, and submit margins in a sequential fashion
* Once margins are all shaved, gross the remaining central island as an oriented ellipse (ink in 2 colors and serial section diagonally). Document the cassette summary.

**Sample Dictation**

Labeled “stage 1 full square right temple”, received in formalin in a small container is a four sided, oriented full square excision. A suture is identified at the A/B junction. Measurements as follows: side A- 1.0 cm, side B- 1.2 cm, side C- 1.0 cm, side D- 1.1 cm. The specimen is excised to a depth of 0.4 cm. The sides are inked as follows: A/B and C/D junctions blue. B/C and D/E junctions green. After shaving all sides, the remaining central square is inked as follows: A-D half blue. B-C half green. The central square is diagonally sectioned from A/B junction to C/D junction.

Cassette summary (see attached diagram):

A1. Side A. (1ns)

A2. Side B. (1ns)

A3. Side C. (1ns)

A4. Side D. (1ns)

A5. Central square, A-B half. (4ns)

A6. Central square, C-D half. (5ns)

Blue

Green

D

B

C

A