

## **LEARNING OBJECTIVES (SHARP FORCE INJURIES – DR. ALFONZO HALFIN)**

1. Learn how to distinguish between a laceration and a sharp force injury.
2. Learn about the anatomy of a knife.
3. Learn about the classification of sharp force injuries.
4. Learn about some of the most important autopsy considerations.
5. Learn about the different mechanisms of death for sharp force injuries.
6. Learn about patterned injuries (the tree) vs. pattern of injuries (the forest).

### **I. LACERATION VS. SHARP FORCE INJURY**

- Laceration: Tissue bridging, irregular borders, marginal abrasion.
- Sharp force injury: No tissue bridging, clean/regular borders, no marginal abrasion.

### **II. ANATOMY OF A KNIFE**

### **III. CLASSIFICATION OF SHARP FORCE INJURIES**

- Stab wound: Deeper than they are long.
- Incised wound: Longer than they are deep.
- Chop wound: Heavy objects, underlying fractures, can have some blunt force trauma characteristics.
- Medical intervention wound: Incisions produced by medical personnel.

### **IV. AUTOPSY CONSIDERATIONS**

- Postmortem radiographs: Can detect missing pieces of the weapon inside the body.
- Langan's lines: Can change the appearance and dimensions of a sharp force wound.

### **V. MECHANISMS OF DEATH**

- Exsanguination: Rapid loss of 50% of blood volume, pale organs/kidneys, scant livor mortis.
- Air embolism: C-sign on chest radiograph.
- Asphyxia due to blood aspiration: Geographic pattern/leopard skin-like on the outer lung surface.
- Asphyxia due to tension pneumothorax or hemopneumothorax
- Hemorrhage in the restrictive or compressive form: Hemopericardium/cardiac tamponade.

### **VI. PATTERNED INJURIES AND PATTERN OF INJURIES**

- **Patterned injuries (looking at the tree): Specific characteristics of individual wounds.**
  - o Wound dimensions to match weapon.
  - o Knife types and weapon types.
  - o Wounds from serrated knives.
  - o V-shaped, L-shaped, and swallow-tail shaped wounds.
- **Pattern of injuries (looking at the forest): Anatomical distribution of the wounds, quality of spread of the wounds, orientation of the wounds in relation to each other.**
  - o Anatomic distribution of the wounds.
  - o Defense wounds/attacker wounds.
  - o Hesitation wounds.
  - o Overkill.

**Sharp Force Injury (Stab Wound, left)  
vs Blunt Force Injury (Laceration, right)**

