

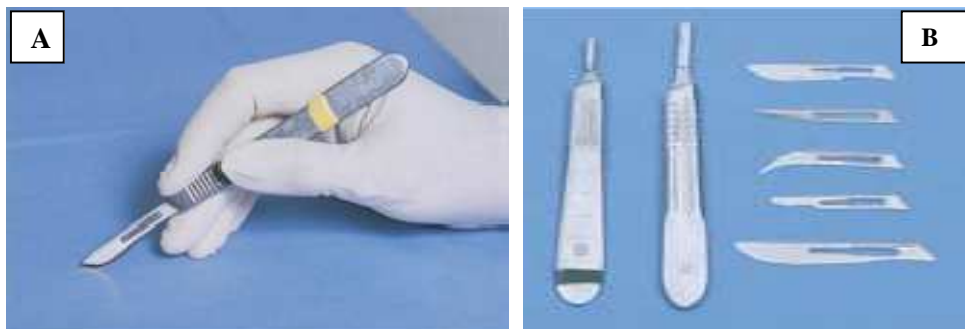
## Surgical Instrumentation:

Each type of surgical instrument is designed for a particular use and should be used only for that purpose. Using instruments for procedures for which they are not designed may dull or break them.

### Scalpels

Scalpels are the primary cutting instrument used to incise tissue. Reusable scalpel handles (No. 3 and 4) with detachable blades are most commonly used in veterinary medicine; however, disposable handles and blades are available. Blades are available in various sizes and shapes, depending on the intended task. A No. 10 blade is most commonly used in small animal surgery. Scalpels usually are used in a “slide cutting” fashion, which means that the direction of pressure applied to the knife blade is at a right angle to the direction of scalpel pressure. When incising skin, the scalpel blade should be kept perpendicular to the skin surface. Scalpels can be held with

1. Pencil grip,
2. Fingertip grip, or
3. Palmed grip.



- A. Scalpels generally are held with a pencil grip because it allows short, fine, precise incisions
- B. Scalpel handles (*left*, No. 3; *right*, No. 4) and blades (*top to bottom*): No. 10, 11, 12, 15, and 20.

### Scissors:

Scissors come in a variety of shapes, sizes, and weights and generally are classified according to

- ✓ Type of point (e.g., blunt-blunt, sharp-sharp, or sharp-blunt),
- ✓ Blade shape (e.g., straight or curved), or
- ✓ Cutting edge (plain or serrated)

**Metzenbaum scissors** are more delicate and should be reserved for cutting delicate tissue and for blunt dissection.

**Mayo scissors** are most commonly used in surgery are used for cutting heavy tissue, such as fascia.

**Suture scissors:** not tissue scissors, should be used to cut sutures.

**Bandage scissors** have a blunt tip, which reduces the risk of cutting skin when the scissors are introduced under the bandage.



**Scissors.** *Left to right:* Stitch (suture removal), sharp-blunt, Metzenbaum, Mayo, wire, tenotomy

- ❖ Scissors may be used for sharp cutting or blunt dissection.
- ❖ They are held with the tips of the thumb and ring finger through the finger rings and with the index finger resting on the shanks near the fulcrum.

## Needle Holders

Needle holders grasp and manipulate curved needles. Size and type of needle holder are determined by

- ✓ Characteristics of the needle to be held and
- ✓ Location of tissue to be sutured

**Most needle holders have a ratchet lock just distal to the thumb**

- ❖ Mayo-Hegar needle holders are commonly used in veterinary medicine for manipulating medium to coarse needles.
- ❖ Needles generally should be placed perpendicular to the needle holder because this allows greatest maneuverability.
- ❖ A needle generally is grasped near its center to allow it to be advanced through tissue with greater force and less risk of breakage



**Needle holders.** *Left to right:* Mayo-Hegar, Olsen-Hegar, Mathieu, Castroviejo.

Needle holders may be held using:

1. Palmed grip
2. Thenar grip
3. Thumb-ring finger grip



Palmed grip



Thenar grip



Thumb-ring finger grip

## Tissue Forceps

Tissue (thumb) forceps are tweezerlike, nonlocking instruments used to grasp tissue

They are available in various shapes and sizes; tips (grasping ends) may be

- ✓ Pointed,
- ✓ Flat,
- ✓ Round,
- ✓ Smooth, or
- ✓ Serrated or
- ✓ May have small or large teeth.



Tissue forceps



Holding tissue forceps with a pencil grip

## Hemostat Forceps

Hemostat forceps are crushing instruments used to clamp blood vessels

They are available with

- ✓ straight or
- curved tips and
- vary in size from smaller mosquito hemostats with transverse jaw serrations to larger mosquito hemostats



A.



B.

A. Hemostat forceps (*left to right*): Mosquito, Kelly, Crile, Rochester-Carmalt. B, Jaw detail of hemostatic forceps (*left to right*):

B. Mosquito, Kelly, Rochester-Carmalt.

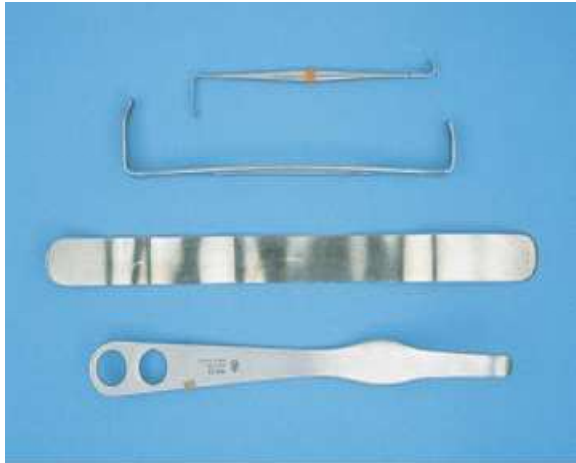
## Retractors

Are used to retract tissue and improve exposure available two type

- ❖ Hand-held retractors and
- ❖ self-retaining retractors

The ends of hand-held retractors may be

- ❖ hooked,
- ❖ curved,
- ❖ spatula-shaped, or
- ❖ Toothed



**Hand-held retractors.** *Top to bottom: Senn, Army-Navy, malleable, Hohmann.*



**Self-retaining retractors:** *Left, Gelpi; right, Weitlaner*

### **Clamp drapes (Towel clip)**

Are fixed the surgical drape at the site of operation



### **Allis tissue forceps, Babcock forceps**

Are used to hold the hard tissue such as fibrous or CT.

