

Chapter 15

Orthopedic Instruments

Dr Jagdeep Singh and Dr Mahesh Goel

Instruments:

1. Periosteal elevator : A rigid instrument featuring a flat, semi-sharp blade curved slightly at the working edge. Uses: Peels and strips the periosteum (the fibrous outer sheath of bone) and attached muscle away from the bone shaft without fracturing the cortical wall.



2. Bone curette : A slender handle terminating in a small, sharp-rimmed, spoon- or cup-shaped tip. Uses: Scrapes away necrotic bone, fibrous tissue, and infected material from non-unions or osteomyelitis sites, and harvests soft cancellous bone for grafting.



3. **Osteotome** : A heavy, chisel-like blade beveled on both sides, equipped with a flat metallic impact plate at the handle base. Uses: Cuts, scores, or divides bone along precise anatomical planes during reconstructive osteotomies and joint realignment.



4. **Bone Mallet** : A weighted surgical hammer constructed from solid stainless steel, brass, or fitted with dense Teflon-capped striking faces. Uses: Delivers controlled mechanical impact to osteotomes, chisels, gouges, and prosthetic impactors.



5. **Bone nibbler** : Heavy, spring-loaded plier forceps with sharp, concave, cup-shaped biting jaws, available in single- or double-action hinges. Uses: Bites away ("nibbles") sharp bone spikes, excess callus, and cartilage to contour edges and decompress nerve roots or joints.



6. Bone Holding Forceps: Heavy clamping forceps with curved, serrated, or pronged jaws, secured with a ratchet or threaded spin-lock. Uses: Clamps bone fragments firmly into anatomic reduction and holds metal osteosynthesis plates flush against the bone shaft during screw insertion.



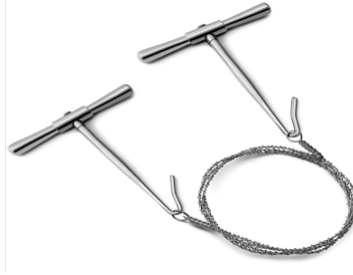
7. Hohmann Retractor : A lever-style handheld retractor with a narrow beak that hooks directly over bone and a wide, curved blade. Uses: Levers bulky muscle groups and soft tissue away from the surgical corridor, providing clear exposure of joints and fractures.



8. Orthopaedic Depth Gauge : A thin sliding probe with a tiny right-angled hook at the distal tip and a calibrated millimeter scale on the sleeve. Uses: Hooks onto the far cortex of a pre-drilled pilot hole to measure the exact screw length required for rigid fixation.



9. Gigli wire saw : A flexible, multi-strand twisted stainless steel wire lined with cutting teeth, anchored at each end to detachable T-shaped handles. Uses: Executes smooth, rapid bone cuts in tight spaces using alternating pull motions, commonly in limb amputations.



10. Bone rasp : A flat, convex, or cylindrical steel tool covered in coarse, cross-hatched cutting teeth. Uses: Grinds down and smoothens jagged bone edges, rounds off sharp osteotomy cuts, and prepares surfaces for implant seating.

