



OPINION ARTICLE

Note on Surgical instruments and its Classification

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Description

A surgical instrument is a tool or device for performing specific actions or carrying out desired effects during a surgery or operation, such as changing biological tissue or providing access for examining it. Many different surgical instruments and tools have been developed over time. Some surgical instruments are made for broad usage in all types of surgeries, while others are made for specialised procedures or specialties. As a result, surgical instrument nomenclature follows certain patterns, such as a description of the action it performs (for example, scalpel, hemostat), the name of the inventor(s) (for example, Kocher forceps), or a compound scientific name related to the type of surgery (for example, a tracheotome is a tool used to perform a tracheotomy).

Surgical equipment enable surgeons to open soft tissue, remove bone, dissect and isolate the lesion, and remove or obliterate the abnormal structures as a treatment. The first exposure is done with larger tools, and the fragile structures are exposed using smaller tools.

Classification

Surgical instruments are divided into following categories:

- Graspers, such as forceps
- Clamps and occluders for blood vessels and other organs (e.g. hemostats)
- Surgical scissors
- Bone cutters include saws, drills, and pliers-like instruments that are either unpowered or powered
- Needle drivers, also known as needle holders, are used to hold a suture needle as it passes through tissue and to grab suture when tying an instrument knot
- Open skin, ribs, and other tissue are spread using retractors

- Distractors, positioners, and stereotactic devices are all examples of stereotactic devices.
- Cutting machines (scalpels, lancets, trocars, Harmonic scalpel, rongeurs etc.)
- Dilators and specula are used to gain access to tight spaces or incisions.
- Suction tips and tubes for body fluid removal
- Surgical staplers and other sealing devices
- Introducing fluid with irrigation and injection needles, tips, and tubes
- Powered equipment, such as dermatomes and cranial drills
- Fiber optic endoscopes and tactile probes are examples of scopes and probes.
- Carriers and appliers for optical, electrical, and mechanical devices
- Ultrasound tissue disruptors
- Measurement devices, such as rulers and calipers

The amount of physical disturbance or tissue trauma that surgical instruments may cause the patient is a significant relative distinction. The terms 'atraumatic' and 'minimally intrusive' is used to describe this problem.

Instruments used in general surgery

There are a number of surgical specialties, some of which make it necessary to use certain surgical instruments.

Cutting and cutting tools: Scales, scissors, and saws are the most traditional. Elevators can be cutting and lifting/reversing. Although the term "dissection" is broad, new substitutes such as diathermy/cautery are often used.

Holding or gripping instruments: This usually included forceps and clamps in particular. Most likely, forceps can be divided into traumatic (muscle crush) and atraumatic (tissue retention, such as Debaquey's).

Hemostatic instruments: This includes tools used to stop the bleeding. The artery forceps is an ancient example of bleeding that stops at the direct pressure of a vessel. Sutures are often used, with the help of a needle holder. Cautery and related tools are widely used in high-resource countries.

Retractors: Surgery is often considered major in terms of exposure. A number of retractors are available to assist in

exposing the body cavities that are reached during surgery. These can be held by hand (usually a small helper) or kept. Elevators can be cutting and lifting/reversing.

Tissue building tools and materials: This will include tools that help in tissue mobilization (such as needle holders or basic equipment) and the building materials themselves.