

Elevators

Elevators are one end bladed instruments for extraction of roots mainly and teeth.

Design of the Elevators

Basically, there are two essential designs of elevators, the use of which should be skilled by every dental surgeon:

1. Straight
2. Curved (offset)

Indications for Elevators

1. To reflect mucoperiosteal membrane
2. To luxate teeth
3. To remove teeth:
 - a. When the use of forceps is impossible due to abnormal position
 - b. Crowded & Malposed teeth with lingual, labially, buccally placed teeth.When it is impossible to apply the forceps without impinging on the adjacent teeth.
- c. Badly carious teeth and extensively damaged: very often there is no crown for holding.
4. To remove a roots

5. To loosen teeth prior to forceps application
6. To split teeth in case of roots sectioning
7. To remove intra-radicular bone or apical fractured root fragments

Rules in the use of the Elevators

1. Never use adjacent tooth as a fulcrum unless that tooth is to be subsequently extracted.
2. Never use the upper border of the buccal or lingual plate as a fulcrum.
3. Never apply the elevator lingual, it should be always applied Mesiobuccally or Distobuccally.

4. The cutting edge (concave surface) of the blade must be in contact with the mesial or distal surface of the tooth to be extracted, and be seated between the tooth and alveolar bone.
5. Always use finger guards to protect the patients in case of using elevators
6. Be certain that the forces is applied by the elevators under control, and the elevators tip is exerting pressure in the correct direction.
- 7-Knife grasp not open grasp

Dangers in the use of Elevators

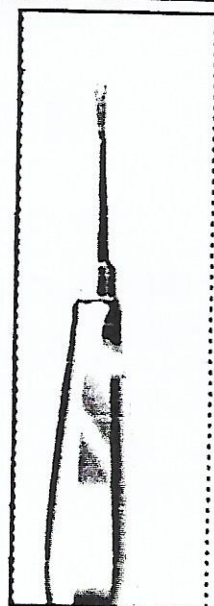
1. Damaging or even extracting of the adjacent tooth.
2. Fractures of the bone (maxilla, mandible).
3. Fracture of alveolar process.
4. Slipping and plunging of the instrument into the soft tissue – danger of perforating large blood vessels or nerves.
5. Penetration into the maxillary antrum or forcing the root in the antrum.
6. Forcing the apical third of the root of the lower third molar into the mandibular canal.

Straight elevators

This type is a straight elevator consisting of handle, shank and blade that is curved at its cutting end.

It comes in 3 sizes.

- No.1 (narrow)
- No.2 (moderate)
- No.3 (broad)



Coupland chisel elevators

This type is a straight elevator consisting of handle, shank but the blade is straight at its cutting end.

It comes in 3 sizes,

- No.1 (narrow)
- No.2 (moderate)
- No.3 (broad)



Warwick James elevators

These have either straight or curved tips.



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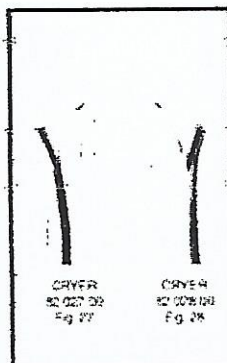
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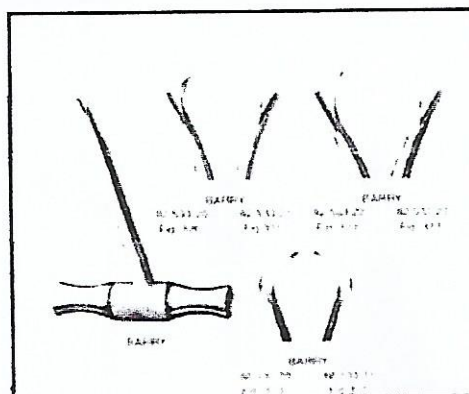
Cryers elevators

Have a similar shape to curved Warwick James elevators but with a larger, short and sharp pointed triangular head.



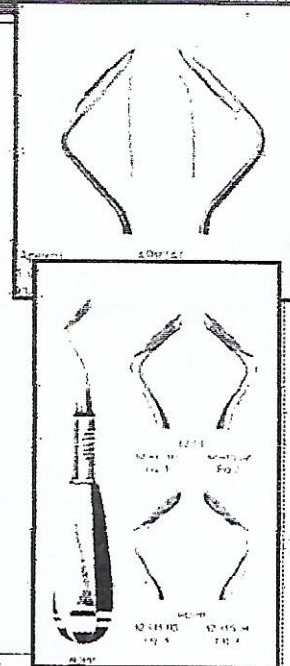
Winter's elevators

They are of 2 types. long and short. The long winter's elevator is used to remove deeply seated mandibular molar roots. The short type is used to remove roots highly seated in the alveolus.



Apexo elevators

They are angled elevators with long blades and the fine ones are specially used to remove very deeply seated root apices or bony spicules or fragments. They also come as right or left.



Each manufacture has his particular designs and names, but many of them are of the same kind and work on the same principles which are:

1. Lever fulcrum principle
2. Wedge principles
3. Wheel and axle principle

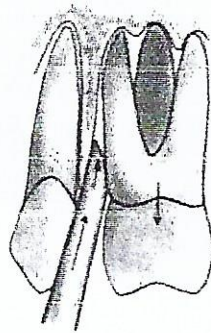
Work principles in the use of Elevators

- 1. Lever Principle
- 2. Wedge Principle
- 3. Wheel and Axle Principle
- 4. Combination of any of 1, 2, 3

Lever Principle



Wedge Principle



Wheel and Axle Principle



The choice of different elevators for different tasks is according to:

- ❖ Amount of space available.
- ❖ Position and availability of a solid fulcrum or bone.
- ❖ Position of a strong application point on the root.
- ❖ Direction of movement required