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Extraction Forceps

These instruments are specifically designed for removing teeth from their socket. Extraction forceps are used to deliver previously luxated teeth and should not be used to pull teeth out of their sockets. In addition, the extraction forceps can expand the alveolar bone when used under controlled forces.

Component of extraction forceps:

1. **Handle:** This is the part that grasped by the operator, on which the forces are applied. It might be serrated to allow positive grip and prevent slippage.
2. **Hinge:** It connects both parts of the forceps. The hinge concentrates and delivers the forces from the handle to the beaks.
3. **Beaks:** These are the functional component that delivers the applied forces to the target tooth. It specifically designed to fit the cervical part of the tooth and varies according to anatomy of the tooth to be extracted.

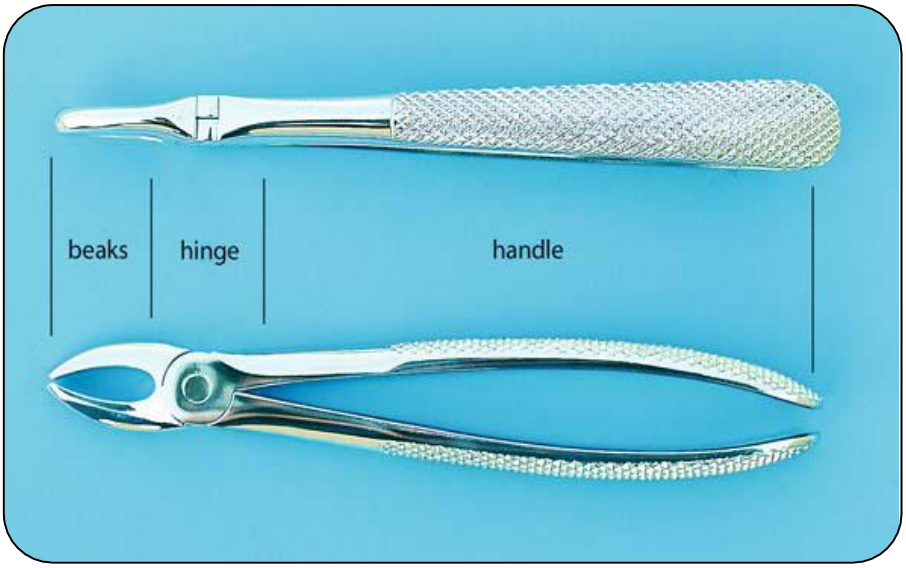

Figure 1 Component of extraction forceps

Types of extraction forceps:

1. Maxillary extraction forceps:

A. Anterior extraction forceps

These forceps are used to extract the six anterior maxillary teeth (i.e. from right canine to left canine). The forceps is generally straight when viewed from the top and the side as well, having the handle and the beaks at the same level. The beaks are concave from both sides to accommodate the single root of these teeth.

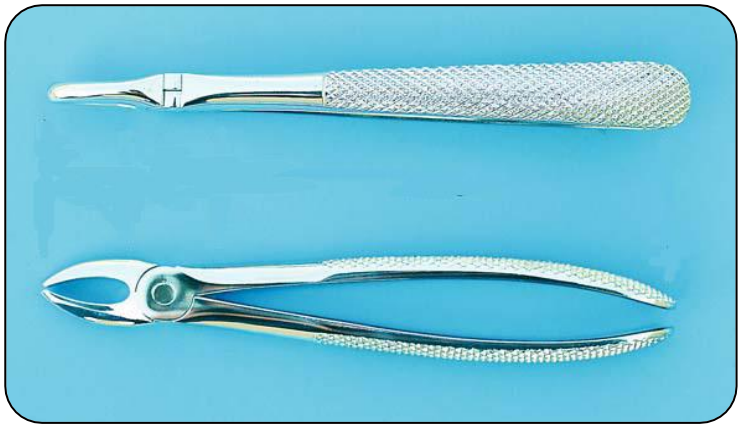

Figure 2 Anterior extraction forceps

B. Premolar extraction forceps

This forceps is used for extraction of upper 1st and 2nd premolars on both sides of the dental arch. The forceps have slight S-shape configuration (i.e. two curves), when viewed from the side. This help to direct the forces to the long axis of the tooth and also to accommodate the oral cavity, avoiding trauma to opposite dentation and the lower lip. The beaks are smooth and concave on both sides to fit the root trunk of these teeth.

Figure 3 Premolar extraction forceps

C. Molar extraction forceps

This forceps is used for extraction maxillary 1st and 2nd molar teeth. Similar to premolar forceps, it has an S-shape configuration when viewed from the side. Since the maxillary molars have three roots one palatal and two buccal, the beaks are designed to fit on the buccal bifurcation with pointed hook and a smooth concave beak to fit on the single palatal root. This requires that this forceps to come in pairs right and left.

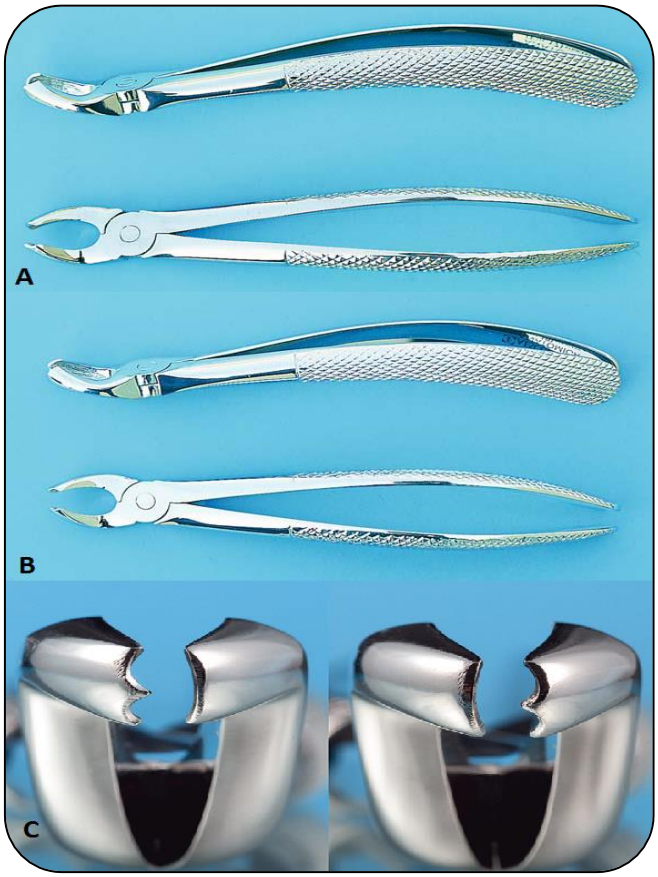

Figure 4 (A) Maxillary right molar forceps, (B) Maxillary left molar forceps, (C) Right and left maxillary forceps' beaks

D. Variations for maxillary forceps

- Maxillary third molar forceps

This forceps is considered the longest among the maxillary extraction forceps due to the posterior position of the 3rd molar. The beaks are smooth and concave to fit the wide anatomical variations of 3rd molar roots (Fig.5).

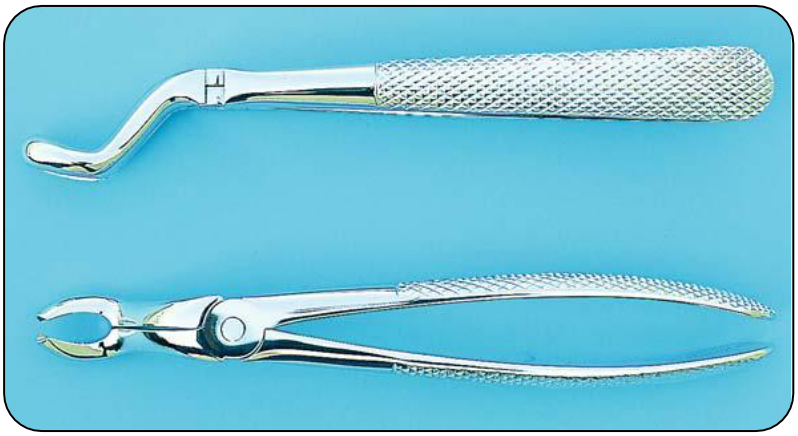

Figure 5 Maxillary Third Molar Forceps

- Maxillary cow-horn molar forceps

This forceps is used mainly for extraction of severely carious maxillary molar. It has sharply pointed beaks that reach deep into the trifurcation. It can generate large amount of forces that can, with uncontrolled use, fracture the buccal plate (Fig.6).

Figure 6 Maxillary Cow-horn Molar Forceps

- Maxillary root tip forceps

This forceps have straight handle with angled, offset and narrow beaks. It is used primarily for extraction upper retained roots (Fig.7).

Figure 7 Maxillary Root Tip Forceps

2. Mandibular extraction forceps:

A. Anterior extraction forceps

These forceps are used to extract the six anterior mandibular teeth (i.e. from right canine to left canine). The English-style forceps have vertical hinge with beaks 90° to handle (i.e. at right angle). When being held in hand the beaks directed downward. The end of these beaks are smooth and concave and in contact with each other, when the forceps is closed (Fig.8).

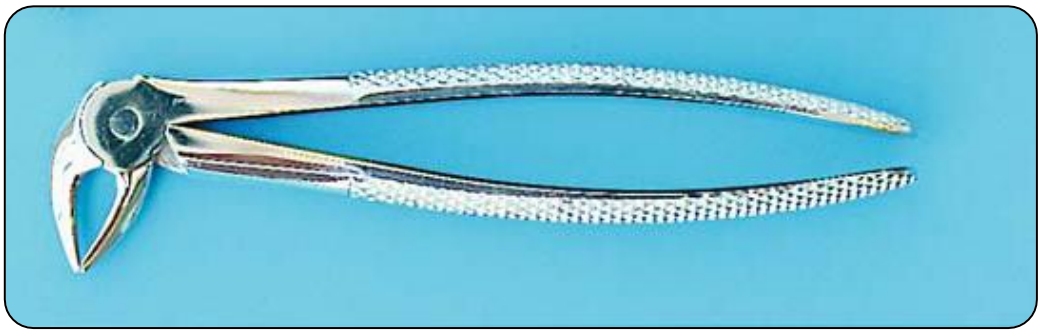

Figure 8 English-style mandibular anterior extraction forceps

B. Premolar extraction forceps

This forceps is used for extraction of lower 1st and 2nd premolars on both sides of the dental arch. This forceps are similar to anterior extraction forceps except for that the beaks are slightly broader and have slight spacing between each other when the forceps is closed (Fig.9).

Figure 9 English-style mandibular premolar extraction forceps

C. Molar extraction forceps

This forceps is used for extraction of lower 1st and 2nd molars on both sides of the dental arch. The beaks are also at right angle to the handle and have pointed hook on both side to fit on buccal and lingual bifurcations of the mandibular molars (Fig.10).

Figure 10 English-style mandibular molar extraction forceps

D. Variations for mandibular forceps

- Mandibular third molar forceps

This forceps have slightly longer straight handle and horizontal hinge allowing the grasp the lower 3rd molar. The beaks might have hook on their ends that fits on the bifurcation. Other design has smooth concave beaks (i.e. without hooks), which facilitate the grasp of lower 3rd molar with fused roots (i.e. without bifurcation) (Fig.11).

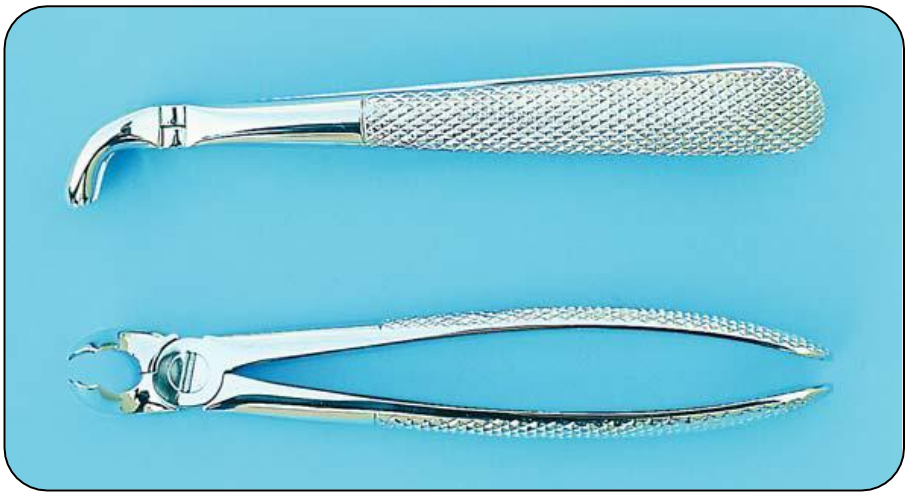

Figure 11 Mandibular 3rd molar extraction forceps

- Mandibular cow-horn molar forceps

This forceps is variation of mandibular molar forceps. The beaks are semi-circular with sharp pointed ends that are designed to fit inside the bifurcation of lower 1st and 2nd molar. The beaks use the buccal and lingual bone plates as fulcrum. When the operator squeezes the handles, the tooth can be luxated from the socket. This forceps can also be used to section carious lower molars by applying controlled forces on the bifurcation. This forceps should be used with caution as it may generate great forces that might fracture the alveolar bone (Fig.12).

Figure 12 English-style mandibular cow-horn molar Forceps

Physics extraction forceps:

This new innovation in exodontia, this forceps has beak on one side and a bumper on the other side. The beak engages the palatal, or lingual, aspect of the tooth and the bumper rests on the buccal side to support the alveolar bone. The bumper has silicon cover, which is disposable and intended for single patient only. In contrast to conventional forceps, this forceps is designed to luxate teeth out of their socket for about 1-3mm, and then the delivery of tooth should be carried out by conventional forceps (Fig.13).

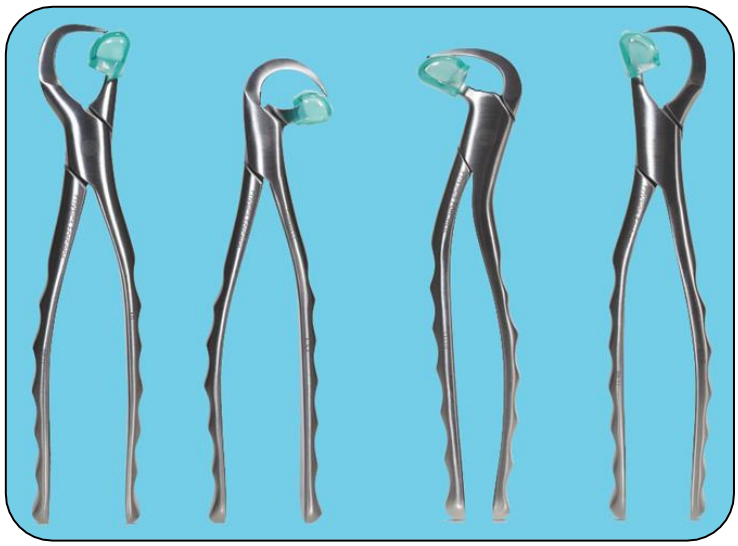

Figure 13 Physics extraction forceps

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