Extraction technique of the maxillary premolars

The maxillary first premolar

- Anatomy review
  - A single-rooted tooth in its first two thirds, with a bifurcation into a buccolingual root usually occurring in the apical one third to one half.
  - These roots may be extremely thin and are subject to fracture, especially in older patients in whom bone density is great and bone elasticity is diminished.
  - Perhaps the most common root fracture when extracting teeth in adults occurs with this tooth.
  - As with other maxillary teeth, buccal bone is thin compared with palatal bone.

Because of the bifurcation of the tooth into two thin root tips, extraction forces should be carefully controlled during removal of the maxillary first premolar.

- The technique
  - Because of the high likelihood of root fracture, the tooth should be luxated as much as possible with the straight elevator, so if root fracture does occur, a mobile root tip can be removed more easily than one that has not been well luxated.
  - Firm apical pressure is applied first to expand crestal bone.
  - Initial movements should be buccal.
  - Palatal movements are made with small amounts of force to prevent fracture of the palatal root tip, which is harder to retrieve.
  - Any rotational force should be avoided.
  - Final delivery of the tooth from the tooth socket is with tractional force in the occlusal direction and slightly buccal

Very important notes:

- When the tooth is luxated buccally, the most likely tooth root to break is the labial root.
- When the tooth is luxated in the palatal direction, the most likely root to break is the palatal root.
- Of the two root tips, the labial is easier to retrieve because of the thin, overlying bone. Therefore, as for other maxillary teeth, buccal pressures should be greater than palatal pressures.

<table>
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<th>So, for the maxillary first premolar we have five movements</th>
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<tr>
<td>1- Luxate as much as possible</td>
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<td>2- Firm apical pressure</td>
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<td>3- Initial buccal movement</td>
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<td>4- Small amounts of Palatal force</td>
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<td>5- Final delivery with tractional force in occlusal direction and slightly buccal</td>
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Any rotational force should be avoided.
Figure 7-59  A, The hand position is similar to that used for anterior teeth.
B, Firm apical pressure is applied first.
C, Buccal pressure is applied initially to expand the buccocortical plate. The apices of roots are pushed lingually and are therefore subject to fracture.
D, Palatal pressure is applied, but less vigorously than buccal pressure.
E, The tooth is delivered in the bucco-occlusal direction with a combination of buccal and tractional forces.
The maxillary second premolar

- **Anatomy review**
  - a single rooted tooth for the entire length of the root.
  - The root is thick and has a blunt end.
  - Consequently, the root of the second premolar rarely fractures.
  - The overlying alveolar bone is similar to that of other maxillary teeth in that it is thin toward the buccal aspect, with a heavy palatal–alveolar palate.

- **The technique**
  - The forceps are forced as far apically as possible so as to gain maximal mechanical advantage in removing this tooth.
  - Because the tooth root is strong and blunt, the extraction requires strong movements to the buccal.
  - Very slight lingual pressure is used
  - then in the bucco-occlusal direction with a rotational, tractional force the tooth is delivered.

So, for the maxillary second premolar we have five movements

1- forceps are forced as far apically as possible
2- strong movements to the buccal
3- Very slight lingual pressure is used
4- tooth delivered in bucco-occlusal direction with a rotational, tractional force
Figure 7-60  A, When extracting the maxillary second premolar, the forceps are seated as far apically as possible. B, Luxation is begun with buccal pressure. C, Very slight lingual pressure is used. D, The tooth is delivered in the bucco-occlusal direction.