

## Decision of root canal treatment in horizontally root fractured teeth

Sin-Young Kim\*, Il-Young Jung

*Department of Conservative Dentistry, Yonsei University, Seoul, Korea*

### I. Introduction

Pulp necrosis is the most common complication after root fracture injuries. Frequencies ranging from 20 to 44% have been recorded in the permanent dentition. When a traumatized tooth is examined, it is important to assess the pulpal status and radiographic change in the fracture area. Factors such as age, stage of root development, dislocation of the coronal fragment, adequate repositioning of the coronal fragment are closely related to pulp healing. In most cases, the chance of pulp necrosis increased with increasing displacement of coronal fragment.

This case presents pulp vitality and prognosis of different coronal displacements in horizontally root fractured teeth.

### II. Case Presentation

1. Sex/age: M/51
2. Chief complaint (C.C): Traumatic injury (Slip down injury)
3. Past Dental History (PDH): N-S
4. Present Illness (P.I):
  - mob(+), Fracture line showed at middle 1/3 of root on #11,21
  - mob(+), Fracture line showed at apical 1/3 of root on #12
  - mob(+), per(+), Class III crown fracture on #22
5. Impression:
  - Horizontal root fracture on #12,11,21
  - Crown-root fracture on #22
6. Tx. Plan:
  - Resin-wire splinting, F/U on #12,11,21
  - Extraction & implantation on #22

### III. Conclusion

Preservation of pulp vitality is definitely patient's advantage, if possible. The clinician should make a careful diagnosis of each tooth and be prepared for different treatment approaches to maintain the injured teeth. In most horizontal root fracture cases, more the displacement of coronal fragment, lesser the chance of pulp vitality. However, in this case, tooth with severe displacement of coronal fragment was revascularized and maintained pulp vitality. Therefore, instead of hastily deciding the necessity of root canal treatment in horizontally root fractured teeth, clinician should do periodic follow up.