

Orthodontics

Ø Orthodontics:

Is the specialty of dentistry concerned with the supervision, guidance, and correction of the growing and mature dentofacial structures.

1. Orthodontist:

He is a dentist who completed 3 years programs after dental school.

2. The orthodontist assistant:

She is the assistant who can participate in many "hands-on" skill, diagnosis records, preliminary appointments, and adjustment visits, and advanced by specialized training programs.

3. The orthodontic office:

Follow the "open bay" concept, and sectioned into 3 areas:

Records area – area for taking radiographs - patient care area.

4. Understanding occlusion:

a. Normal occlusion class I: all the teeth are well aligned and there is no crowding.

b. Abnormal occlusion: any deviation from class I.

5. Types of malocclusion:

a. Crowding.

b. Protruding upper incisors.

c. Prominent lower jaw.

6. Causes of malocclusion:

a. Abnormal jaw relationship (angle's classification):

- Class II malocclusion (distocclusion): the body of the mandible is distal to the maxilla, or the mesiobuccal cusp of the maxillary first molar occludes in the interdental space between the mandibular second premolar and the mesial cusp of the mandibular first molar.

Class II division 1, & Class II division 2.

- Class III malocclusion (mesiocclusion): the body of the mandible is mesial to the maxilla, or the mesiobuccal cusp of the maxillary first molar occludes in the interdental

space between the distal cusp of the mandibular first molar and the mesial cusp of the second molar.

- b. Developmental causes: it may or may not accompany congenital defects.
- c. Genetic causes: as discrepancies in the jaws/teeth size.
- d. Environmental causes: birth or throughout life injuries.
- e. Functional causes: as sucking habits.
- f. Malaligned teeth: caused by crowding, increased overjet, increased overbite, open bite, cross bite.
- g. Supernumerary teeth: an extra tooth.
- h. Missing teeth: often the upper lateral.

Ø Aims of Treatment:

Are to reposition the teeth so that appearance is improved and good functional occlusion obtained.

1. Benefits of Orthodontic treatment:

- a. Psychological function.
- b. Oral function.
- c. Dental disease.

2. Management of orthodontic problems:

a. Corrective Orthodontic:

It includes the required movement of teeth by: fixed appliances - removable appliances - orthodontic surgery.

Ø Orthodontic records and treatment planning:

- 1. Medical and dental history.
- 2. Physical growth evaluation.
- 3. Social and behavioral evaluation.
- 4. Clinical examination.
- 5. Evaluation of facial esthetics.
- 6. Profile evaluation.
- 7. Evaluation of the oral health.
- 8. Diagnostic records.
- 9. Photographs.
- 10. Radiographs.
- 11. Diagnostic models.

Ø Specialized instruments and accessories:

1. Intraoral instruments:

- a. Orthodontic scaler.
- b. Ligature director.
- c. Band plugger.
- d. Bracket placement.

2. Pliers:

- a. Bird- beak pliers.
- b. Contouring pliers
- c. Weingart utility piers.
- d. Three-prong pliers.
- e. Posterior band remover pliers.
- f. Pin- and- ligature cutter.
- g. Howe pliers.
- h. Wire pliers.
- i. Wire bending pliers.
- j. Ligature- tying pliers.

Ø Orthodontic Treatment (treatment of malocclusion):

1. Extraction.

2. Appliances (fixed, or removable).

3. Extra-oral traction.

4. Functional appliances.

- a. Separators: used to widen the interproximal contact before placement of the band by three main methods: Brass wire separators - steel springs - elastomeric separators.
- b. Orthodontic band: is stainless steel ring that are fitted around the teeth and cemented in place.
Cementation of orthodontic band: the selected cement must be strong to aid the retention with enamel and releases fluoride.
- c. Bonded brackets: are attached to a stainless steel backing pad and bonded to enamel.
- d. Arch wire: used to create a guidance force to move the teeth.
It can be rounded, square, or rectangular.
- e. Ligature ties: used to tie the arch wire.

- f. Power products: items made of elastic material that in tooth movement.
- g. Elastic chain ties: used to close space between teeth or to correct rotated teeth.
- h. Elastic thread: type of tubing used to close space or aid in eruption of impacted teeth.
- i. Headgear: orthopedic device used to control growth and tooth movement.
- j. Facebow: used to stabilize or move the maxillary first molar distally and create more room in the arch.

5. Adjustment visits:

A regular visits to reviews the patient progress.

6. Oral hygiene and dietary instruction:

The patient should be urged to use good sense in selecting food, and care to his or her mouth properly.

7. Completed treatment:

The band and bonded attachment are removed.

8. Retention:

Used after removal of the appliance to keep the tooth in position.

Types:

- a. Orthodontic positioner.
- b. Hawley retainer.
- c. Lingual retainer.