

7.1 Definitions, diagnosis, and treatment planning

Sagittal disturbances (mandible)

Diagnosis	Definition	Symptoms
Mandibular prognathism (hyperplasia)	Anterior position of mandible in relation to correct position of maxilla	Reverse dental overjet, mesial interdentation, anterior overprojection of chin (increased chin prominence), protruding lower lip, Angle Class III
Mandibular retrognathism (hypoplasia), mandible too short in sagittal direction (mandibular anteroposterior deficiency)	Posterior position of mandible in relation to correct position of maxilla	Large overjet, posterior position of chin, short, normal or long lower face, distal interdentation (laterally) Angle Class II

Sagittal disturbances (maxilla)

Diagnosis	Definition	Symptoms
Maxillary retrognathia	Maxilla in posterior position in relation to regular position of mandible and skull base	Reversed frontal overjet, protruding lower lip, mesial interdentation, Angle Class III
Maxillary prognathia	Maxilla in anterior position in relation to regular position of mandible to skull base	Large overjet, distal interdentation laterally, lip incompetence, Angle Class II
Maxillary alveolar protrusion	Isolated anterior position and/or tilting of anterior alveolar process	Protrusion of maxillary teeth, lip incompetence, dental procumbency
Maxillary alveolar retroposition	Alveolar process in posterior position in relation to regular position of maxillary base	No or negative overjet, prominent lower lip

Vertical discrepancies (mandible)

Diagnosis	Definition	Symptoms
Vertical hypoplasia of mandible	Shortness of either the ascending ramus, the mandibular body, or the chin	Depending on the affected part of the mandible, findings may include an anterior open bite, excessive occlusal and mandibular plane angles, a long anterior facial height, a flat face or a flat chin may occur
Vertical hyperplasia of mandible	Elongation of either the ascending ramus, the mandibular body, or the chin	Depending on the affected part of the mandible, elongation of posterior lower face (rare), low (flat) occlusal, and mandibular plane angle. If the mandibular body or chin is concerned, sagittal elongation of the lower face or chin is the consequence
Mandibular hypoalveolism	Alveolar process does not reach the occlusal plane	Partial open bite or vertical deviations from occlusal plane
Mandibular hyperalveolism	Rare pathology, mostly in connection with bony pathology like fibrous dysplasia	Isolated elevation of parts of the alveolar process with occlusal disturbances occurring

Table 7.1-1 Symmetric and asymmetric dysgnathias.



Vertical discrepancies (maxilla)

Diagnosis	Definition	Symptoms
Vertical hyperplasia of the maxilla	Long face deformity, increased vertical height	Elongated midface, short upper lip, gummy smile, lip incompetence. When only occurring posteriorly, an anterior open bite may occur.
Vertical maxillary hypoplasia	Maxilla too short	Short midface, elongated upper lip, upper frontal teeth invisible, even in motion, large distance between rest position and centric occlusion
Maxillary hyperalveolism	Caudal elongation at least of parts of the maxillary alveolar process	Occlusal disturbances
Maxillary hypoalveolism	Cranial position of parts of the maxillary alveolar process, possibly due to growth disturbances	Open bite in disturbed regions, sometimes elongation of alveolar process of opposite area of the mandible

Transverse discrepancies

Diagnosis	Definition	Symptoms
Transverse hypoplasia of the mandible	Narrow lower jaw (mandible)	Buccal crossbite, pointed mandible in chin area
Transverse hyperplasia of the mandible	Wide lower jaw (mandible)	Lingual crossbite, chin appears wide
Transverse hypoplasia of chin	Chin appears narrow and pointed	Narrow lower facial third with narrow chin
Transverse hyperplasia of chin	Wide base at the chin area	Wide chin
Transverse hypoplasia of maxilla	Maxilla too narrow at its base	Bilateral lingual crossbite, often associated with crowding
Transverse hyperplasia of maxilla (rare)	Maxilla too wide at its base in relation to mandible	Lateral overjet

Asymmetric discrepancies

Diagnosis	Definition	Symptoms
Laterognathia (hemi-mandibular elongation)	Asymmetric size of mandibular halves in the sagittal plane	Midline deviation of mandible in relation to correct position of maxilla, lingual crossbite on one side (short mandible) and buccal crossbite on opposite side (long side of mandible)
Hemimandibular hyperplasia	Three-dimensional (sagittal, vertical, transverse) enlargement of one mandibular half	Facial asymmetry (oversized lower face on one side), oblique occlusal plane
Condylar hyperplasia	Isolated unilateral enlargement of condylar neck	Oblique occlusal plane, asymmetry of lower facial third, sometimes posterior open bite
Isolated unilateral hyper- or hypoalveolism	Unilateral over- or undersized sections of alveolar process	Alterations in occlusal plane, open bite
Unilateral mandibular hypoplasia	Hypoplasia or aplasia of condylar process and parts of the ascending ramus	Facial asymmetry, short lower facial third or facial half on one side, high occlusal plane angle with elevation towards diseased side
Unilateral vertical elongation of maxilla	Unilateral elongation of maxilla, mostly to compensate mandibular hypoplasia	Facial asymmetry, oblique occlusal plane
Unilateral shortening (hypoplasia) of the maxilla	Unilateral hypoplasia usually due to restricted growth of the mandible on the same side	Facial asymmetry, oblique occlusal plane angle

Table 7.1-1 (cont) Symmetric and asymmetric dysgnathias.