Classification of Dental Occlusion in Dogs

An **ideal occlusion** can be described as perfect interdigitation of the upper and lower teeth. In the dog, the ideal tooth positions in the arches are defined by the occlusal, inter-arch and interdental relationships of the teeth of the archetypal dog (i.e. wolf). This ideal relationship with the mouth closed can be defined by the following:

- The maxillary incisor teeth are all positioned rostral to the corresponding mandibular incisor teeth. The crown cusps of the mandibular incisor teeth contact the cingulum of the maxillary incisor teeth.
- The mandibular canine tooth is inclined labially and bisects the interproximal (interdental) space between the opposing maxillary third incisor tooth and canine tooth.
- The maxillary premolar teeth do not contact the mandibular premolar teeth. The crown cusps of the mandibular premolar teeth are positioned lingual to the arch of the maxillary premolar teeth. The crown cusps of the mandibular premolar teeth bisect the interproximal (interdental) spaces rostral to the corresponding maxillary premolar teeth.
- The mesial crown cusp of the maxillary fourth premolar tooth is positioned lateral to the space between the mandibular fourth premolar tooth and the mandibular first molar tooth.

Normal occlusion in a dog:

Normal Occlusion

A **malocclusion** is any deviation from normal occlusion described above. Malocclusion may be due to abnormal positioning of a tooth or teeth (dental malocclusion) or due to asymmetry or other deviation of bones which support the dentition (skeletal malocclusion).

Terms of malocclusion:

Neutroclusion (Class 1 malocclusion; MAL/1): A normal rostral-caudal relationship of the maxillary and mandibular dental arches with malposition of one or more individual teeth.

Mandibular distoclusion (Class 2 malocclusion; MAL/2): An abnormal rostral-caudal relationship between the dental arches in which the mandibular arch occludes caudal to its normal position relative to the maxillary arch.   Example:

Malocclusion Class 2:
Mandibular distoclusion

Maloccusion Class 2:
Mandibular distoclusion

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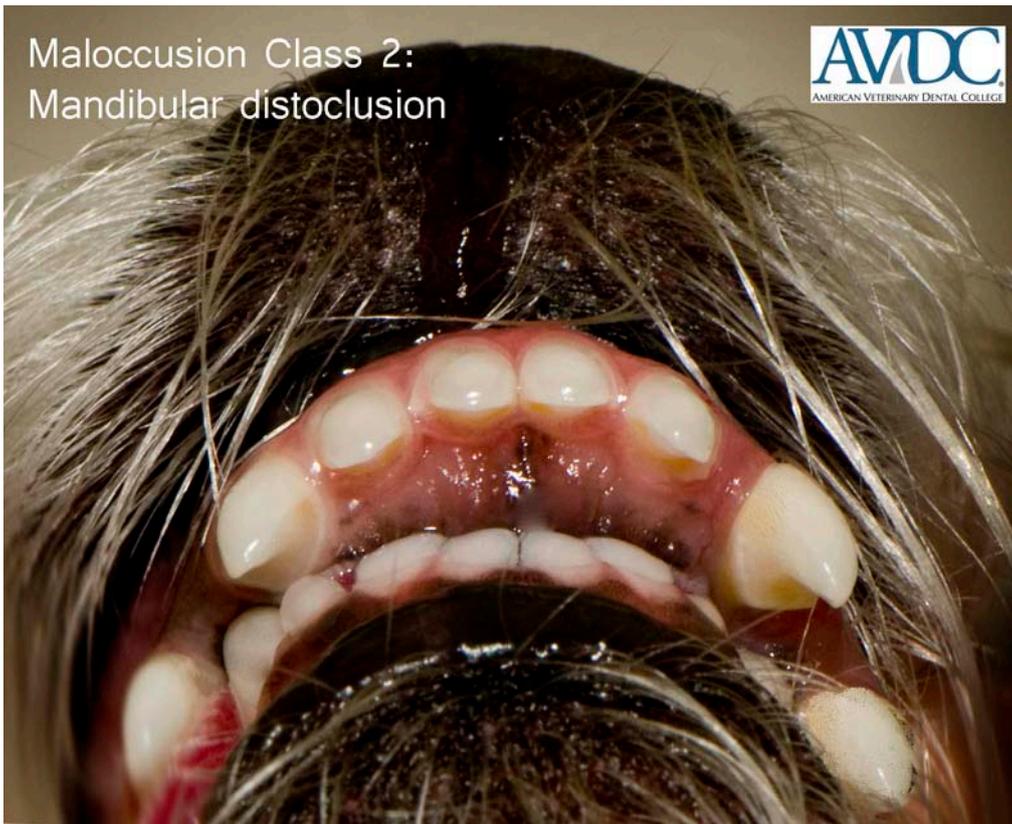
Mandibular mesioclusion (Class 3 malocclusion; MAL/3): An abnormal rostral-caudal relationship between the dental arches in which the mandibular arch occludes rostral to its normal position relative to the maxillary arch. Example:
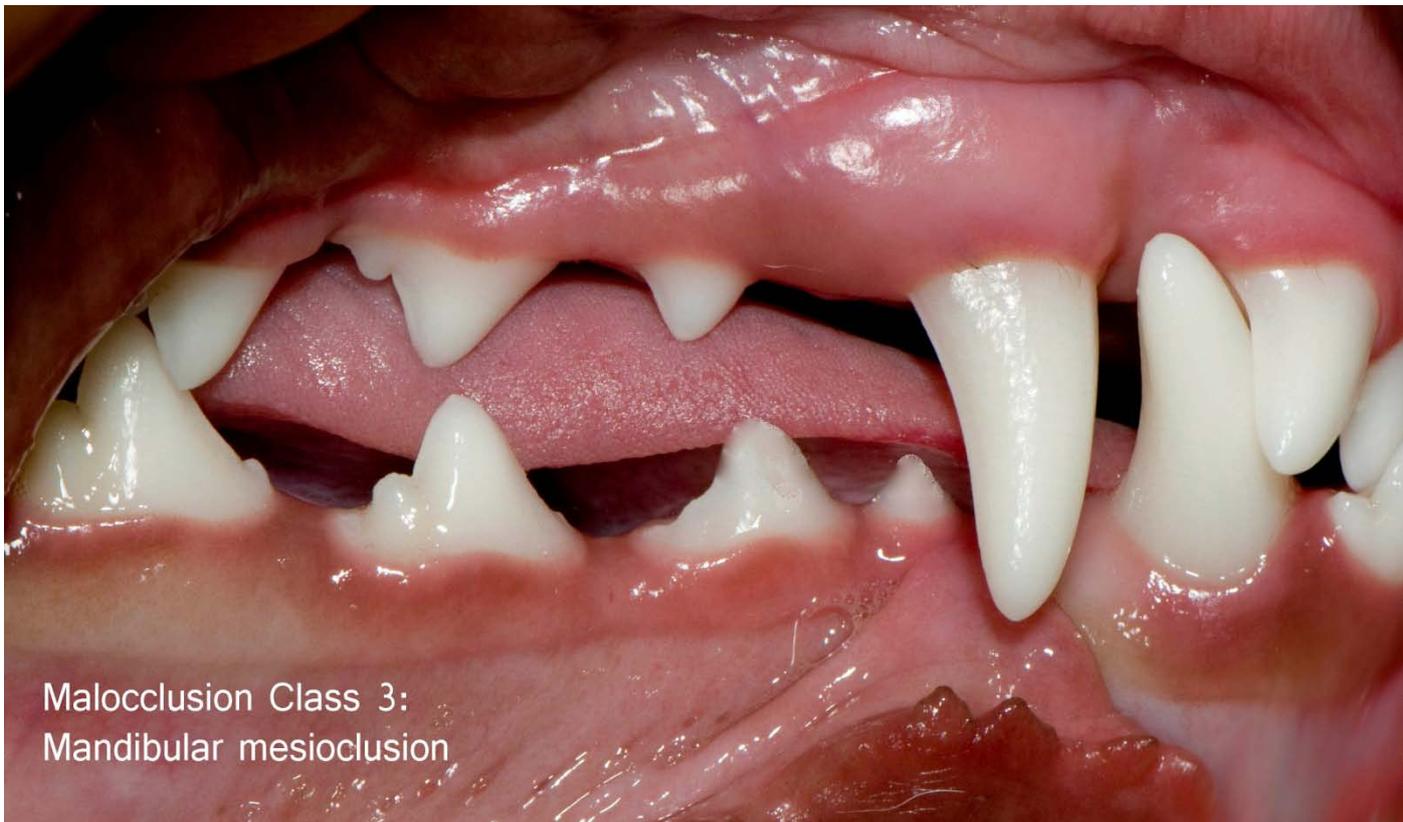

Malocclusion Class 3:
Mandibular mesioclusion

Malocclusion Class 3:
Mandibular mesioclusion

Dental malocclusions

Distoversion (DV) describes a tooth that is in its anatomically correct position in the dental arch but which is abnormally angled in a distal direction.

Mesioversion (MV) describes a tooth that is in its anatomically correct position in the dental arch but which is abnormally angled in a mesial direction.

Linguoversion (LV) describes a tooth that is in its anatomically correct position in the dental arch but which is abnormally angled in a lingual direction.

Labioversion (LABV) describes an incisor or canine tooth that is in its anatomically correct position in the dental arch but which is abnormally angled in a labial direction.

Buccoversion (BV) describes a premolar or molar tooth that is in its anatomically correct position in the dental arch but which is abnormally angled in a buccal direction.

Crossbite (XB) describes a malocclusion in which a mandibular tooth or teeth have a more buccal or labial position than the antagonist maxillary tooth. It can be classified as rostral or caudal.

In **rostral crossbite** (RXB, similar to anterior crossbite in human terminology) one or more of the mandibular incisor teeth is labial to the opposing maxillary incisor teeth when the mouth is closed.

In **caudal crossbite** (CXB, similar to posterior crossbite in human terminology) one or more of the mandibular cheek teeth is buccal to the opposing maxillary cheek teeth when the mouth is closed.

Skeletal malocclusions:

Symmetrical skeletal malocclusion is defined in Terms of Malocclusion (Classes 1-3) at the top of this section.

Asymmetrical Skeletal Malocclusion:

Maxillary-mandibular asymmetry describes skeletal malocclusions that can occur in a rostro-caudal, side-to side, or dorso-ventral direction.

Maxillary-mandibular asymmetry in a rostro-caudal direction occurs when mandibular mesioclusion or distoclusion is present on one side of the face while the contralateral side retains normal dental alignment.

Maxillary-mandibular asymmetry in a side-to-side direction occurs when there is loss of the midline alignment of the maxilla and mandible.

Maxillary-mandibular asymmetry in a dorso-ventral direction results in an **open bite** (OB), which is defined as an abnormal vertical space between opposing dental arches when the mouth is closed.

The expression "**wry bite**" is a layman term that has been used to describe a wide variety of unilateral occlusal abnormalities. Because "wry bite" is non-specific, its use is not recommended.

AVDC Abbreviations for malocclusions in dogs:

The diagnosis for a patient with malocclusion can be abbreviated as:
MAL (malocclusion)/**1** or **2** or **3** (= malocclusion class designation)/specific malocclusion abbreviation and tooth or teeth number(s).

Example: **MAL/1/RXB202** for a dog with class 1 occlusion and a rostral crossbite of the second incisor.

If multiple teeth have the same malocclusion, include the tooth numbers with a comma in between e.g. **MAL/1/RXB202,302**.