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Perspective

The Effect of Oral Cavity During the Examination of Cynodonts

Buck Erickson*

Forensic Odontology/Unit Adelaide Dental School, University of Adelaide, Sydney, Australia

DESCRIPTION

They are some of the changes that occurred during the evolution of the cynodonts that affected the oral cavity, jaws, and finally gave rise to mammal's capacity to thoroughly chew their food.

The second palate the nines open into the mouth cavity in primitive amniotes. The secondary palate, which divides the feeding and breathing pathways, expanded in size during the evolution of the cynodonts. The horizontal processes from the maxillae and palatine bones that converge in the middle to produce the secondary palate. The secondary palate enables for the acquisition and processing of food while the animal is still breathing.

Non-mammalian vertebrates have composite structures for their lower jaws. The articular is made up of the angular, surangular, and articular bones in the posterior portion, in addition to the major tooth bearing bone. The articular and quadrate bones of the skull combine to produce the joint that connects the lower jaw to the skull. These bones shrank as the cynodonts evolved, and they began to work with the columella or stapes to transmit airborne vibrations from the tympanic membrane, which was situated beneath the jaw joint and supported by a process from the angular process, to the inner ear. The quadrate and articular, as well as the malleus and locus, were eventually moved to the area of the skull beyond the middle ear. Respectively, while the angular, acting as the ectotympanic, supported the tympanic membrane, forming a sound transmitting chain of auditory ossicles with the stapes. One bone in the lower jaw and a new jaw articulation between the squamosal bone and dentary was created. By the later triassic, the transition of the auditory ossicles to the inner ear and the formation of the dentary squamosal junction were finished.

Because it involves the temporal region of the squamosal bone, the mammalian denary squamosal joint is also known as the Temporomandibular Joint (TMJ). The glenold rossa is the term used to describe the socket within the temporal bone and the articular condyle is used to describe the mandibular portion of the joint. The articular surfaces of the TMJ are covered first by secondary cartilage rather than primary cartilage, which are afterwards covered by fibrous tissue generated from the periosteum.

Almost all non-mammalian tetrapods have simple hinges in their lower jaws, enabling vertical opening and closing of the jaws. As the jaws close, the lower tooth row passes just within the top row because the lower jaw is just marginally narrower than the higher. Mammals' TMJs have undergone secondary modifications that allow mouth opening with the same straight forward motion, but for the majority of mammals, opening the mouth requires both rotation of the mandibular condyle and forward translation at the TMJ. The lateral pterygoid muscle pulls the condyle forward as it rotates by inserting on the condylar process as well as the articular disc and capsule of the TMJ. In the joint itself, the lower articulation permits rotary movements while the higher articulation permits translational movements.

Simple scissor like movements of the jaw are used by camivorans and certain other mammals to break down food, and the mandible moves anteriorly and posteriorly in many rodent species. Mastication involves complex jaw movements. These movements include rotation about the vertical axis, lateral movement, or back and forth movement, as well as straight forward opening and closing. According to the overall pattern of movement, which is then tailored to nutrition, the morphology of the joint differs greatly among mammals. The descriptive chapters make notice of these variances. The midline joint between the two parts of the lower jaw is fibrous and consequently flexible, which contributes to jaw movement in many mammals. The "third joint" of the jaw was a suitable name for the symphysis. Fibrocartilage and fibrous connective tissue make up an unfused, flexible symphysis, which makes it well-suited to resisting both compressive and tensional pressures. A versatile symphysis can perform a number of functions. In dogs, the joint at the TMJ flexes during lateral movement and may absorb the shock of biting. In other mammals, the working side of the mandible can twist about its long axis during contact between the upper and the lower molars.

Correspondence to: Dr. Buck Erickson, Forensic Odontology Unit/Adelaide Dental School. University of Adelaide, Sydney, Australia, E-mail: Buckerikson@adelaide.edu.au

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