# CONGENITAL AGLOSSIA

## A Case Report

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A 22-YEAR-OLD man of Chinese descent came to the Washington University Dental Clinic with the complaint of pain in a lower anterior tooth. He was five feet tall and weighed one hundred twenty pounds. His general appearance was one of alertness. He answered questions intelligently, but with a definite speech impediment. He was a second-year college student in a school of engineering, and a later check of his scholastic standing revealed that he was in the upper one-third of his class. This was only his second visit to a dentist, the first one being when he was much younger, and at which time he thought he had had one or two lower anterior teeth extracted.

The entire lower portion of his face was greatly underdeveloped, and the chin was noticeably receded. In speaking, the buccinator muscles were very noticeable in their movement, as were the muscles of the floor of the mouth. Also in speaking there was a clearly audible intake of air, and a tendency for saliva to escape from the corners of the mouth.

Clinical examination revealed the absence of a tongue, with no rudimentary structure resembling a tongue. The floor of the mouth was smooth and could be elevated to contact the incisal edges of the maxillary anterior teeth. The maxillary arch was constricted and triangular. Using Pont's Index as a norm, there was a maxillary contraction of 19 mm. in the premolar area, and a 11 mm. contraction in the molar area. The maxillary lateral incisors were in extreme linguoversion, with a supernumerary tooth in the midline just anterior, between the central and lateral incisors. In the mandibular arch there was a molar contraction of 16 mm., and a molar contraction of 11 mm. The mandibular central and lateral incisors and the right cuspid were missing. It was necessary to extract the left mandibular cuspid, due to an acute pericementitis caused by the shearing bite.

Bimaxillary relationship was one of extreme mandibular retraction with buccoversion of all left maxillary teeth. The occlusion on the right side was limited to that of the maxillary second molar with the mandibular first and second molars.

Dental radiographs showed the presence of unerupted maxillary and mandibular third molars, all of which appeared to be impacted. There was a generalized marginal alveolar atrophy, this being advanced around the molar teeth.

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The gingival tissue was atrophic, and the gingival crevice was exaggerated around all the teeth. The mouth was clean, and never during the time he was seen was there any clinical evidence of an exudate from the exaggerated crevices. There was cervical caries on the mandibular right first premolar and occlusal amalgam restorations in the mandibular right and left first molars, and the mandibular left second molar. There was no other evidence of caries.

Fig. 1. Fig. 2.

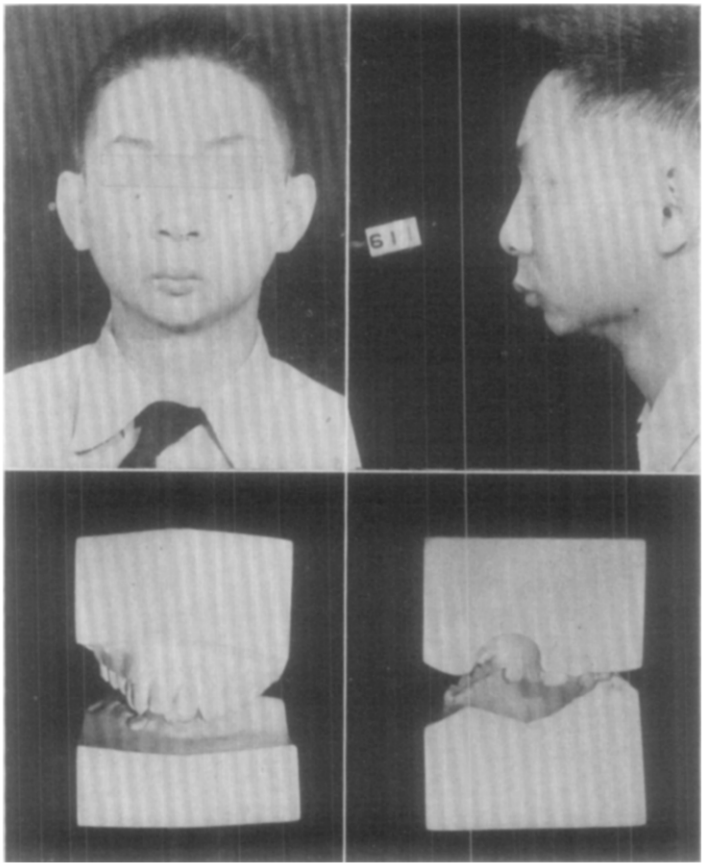

Fig. 3. Fig. 4.

Fig. 1.—Full face.
Fig. 2.—Left profile.
Fig. 3.—Anterior view, occluded gnathostatic models.
Fig. 4.—Posterior view, occluded gnathostatic models.

In testing for the four qualities of taste sensations, 3 per cent cane sugar, 1 per cent sodium chloride, 0.1 per cent sulfuric acid, and 0.1 per cent quinine were used by moistening a small camel's-hair brush with the solutions and applying this to various regions of the mucous membrane of the oral cavity. The only area in which the taste sensations could be distinguished was on the surface of the soft palate.

He was the eldest child of a family of eight children, three of whom had died in infancy, and the others, according to him, were well. They were not available for examination, nor were his parents, but he explained that as far as he knew, they all had "sound" teeth. He stated that the absence of a tongue had caused him no undue concern, except in speaking and in eating certain dry

Fig. 5. Fig. 6.

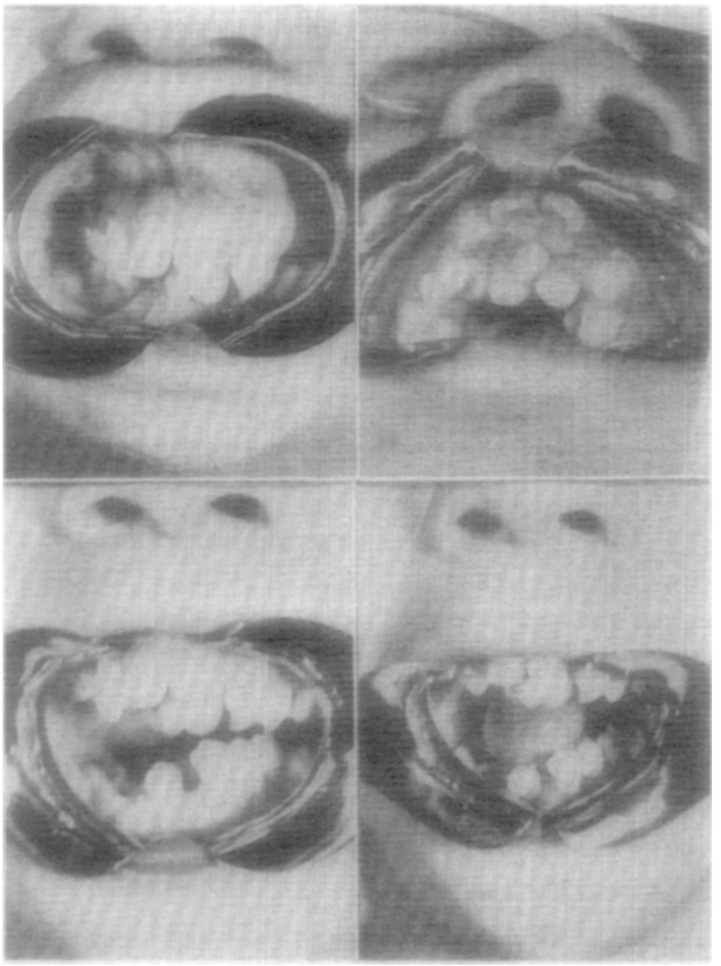

Fig. 7. Fig. 8.

Fig. 5.—Anterior view, teeth occluded.

Fig. 6.—Anterior palatal view; note lingually placed lateral incisors and supernumerary tooth in midline.

Fig. 7.—Anterior view of mouth; open-floor of mouth relaxed.

Fig. 8.—Anterior view of mouth; open-floor of mouth elevated to touch incisal edge of maxillary anterior teeth.

foods, such as cereals and breads, which would often lodge in his palate and would have to be removed with his finger. His parents had considered malformity a "curse," and he had not sought professional advice before his clinic admission, except on one other visit to a dentist when he was younger.

He speaks both Chinese and English. He was examined at the speech clinic at the Central Institute of the Deaf, and the following analysis of his speech was made:

All consonants of the English language with the exception of "P," "B," "M," "F," "V," "W," and "Sh" require contact of tongue with teeth if they are to be made clearly. It would seem impossible, then, with the absence of tongue muscles, to produce such sounds as "T," "D," "N," and "L," which are made with the tip of the tongue contacting the alveolar process directly behind the upper front teeth, also the "K" and "G" which require a contact of the dorsum of the tongue with the palate. Regardless of this, the speech of this boy is intelligible.

It requires analysis to determine what compensation he is making to approximate these speech sounds. For instance, when he wishes to say the "Th" which is normally made with the tongue slightly protruded and resting on the upper front teeth, he takes instead the position for "F," which has a similar sound but changes the position of contact of teeth and lips slightly so that a differentiation is made between the "F" and the sound he substitutes for "Th." For the production of the "K" he contacts the buccinator muscles with the molars as a substitution for tongue and palate contact. He makes the same compensation for "Ch" controlling his breath stream so that there is a difference between the "K" and the "Ch." But while it makes an acceptable "K" or "Ch," it also influences the clarity of the voice. He makes the "T," "D," and "L" sounds by elevating the floor of the mouth to contact the anterior maxillary teeth. The intelligibility of these sounds depends upon their combination with other sounds in the word.

The vowels are not so difficult to produce, since they are made with an open throat. While they are modified by the changing positions of the tongue, they are also modified by changing positions of the cheek muscles and mouth aperture. He says most vowels clearly with the exception of the long "A" and long "E," which require a forward muscle of the tongue. On close analysis these substitutions can be detected, but they do not deviate so widely from the normal as to make his speech unpleasant. His inflection, his expression, and his rate of articulation are normal. His voice is well pitched, but not projected, and it has a muffled and somewhat mushy quality.

With such anatomical abnormality, it is remarkable that the speech of this subject does not deviate more conspicuously from the normal. He has done exceptionally well in atuning his ear to normal speech and developing and substituting corresponding sounds in his own speech.