TITLE: BILATERAL MANDIBULAR CORONOID FORAMINA WITH BILATERAL ACCESSORY FORAMINA ON THE LATERAL ASPECT OF THE RAMUS; AN UNSEEN VARIANCE DISCOVERY IN HUMANS.

Abstract:
The mandible is a ‘U’-shaped pivotal structure, considering the attachment of the muscles of mastication with relation to mastication itself. The coronoid process is a variably shaped hook-like projection at the anterosuperior aspect of the ramus. The anterior border of which is convex and continuous with that of the ramus. Posteriorly, the border is slightly concave and contributes to the mandibular notch. The entire border of the coronoid along with the medial surface provides attachment for the temporalis muscle. Previous studies have shown that the size and shape of the coronoid are correlated to the bite force required by an individual and is dependent upon the mechanical force acting upon it during development. However, little is known about the developmental program leading to the specification of the process. The relative size & shape of the coronoid process varies considerably among individuals. The author in this paper aims to present his unique discovery of 'Coronoid Foramina' bilaterally along with bilateral accessory foramina over the lateral aspect of the mandible, which has never been seen or documented in the literature to date.

Keywords:
Mandible, Coronal variance, Coronoid Foramina, Lateral Mandibular Foramina, Mandibular Foramen, Mandibular Canal.

Introduction:
Accessory mandibular foramina are constant structures of the human mandible. They are the openings present in the mandible, other than alveolar sockets, and mandibular and mental foramens. They are prevalent in the posterior mandible and the area of the symphysion, are found more frequently on the internal than the external surface of the mandible, and are most commonly observed on the medial aspect of the mandible than on the lateral surface. The majority of the time, bilateral symmetry is common, but variations exist in size, shape, and number. Nerves, neurovascular bundles, articularis, and venous have been found to occupy the accessory canal and foramina.

The aim of this case report is to present unique and first-ever findings of ‘foramina on the coronoid process’ and ‘accessory lateral foramina on the lateral aspect of the ramus’ of the mandible.

Materials & Methods:
This case is of a 43-year-old male patient from the central part of the Kingdom of Saudi Arabia who presented to the Department of Oral & Maxillofacial surgery with limited mouth opening, although without apparent symptoms. The patient was partially edentulous and had a history of drug abuse. An anterior border of which is convex and continuous with that of the ramus. Posteriorly, the border is slightly concave and contributes to the mandibular notch. The entire border of the coronoid along with the medial surface provides attachment for the temporalis muscle. Previous studies have shown that the size and shape of the coronoid are correlated to the bite force required by an individual and is dependent upon the mechanical force acting upon it during development. However, little is known about the developmental program leading to the specification of the process. The relative size & shape of the coronoid process varies considerably among individuals. The author in this paper aims to present his unique discovery of 'Coronoid Foramina' bilaterally along with bilateral accessory foramina over the lateral aspect of the mandible, which has never been seen or documented in the literature to date.

Discussion:
The normal morphological position of foramina of the mandible
The mentioned photographs reveal the kind of variation which has never been reported or existed in the literature. However, a possible hypothesis as understood from the available literature by the author is mentioned as follows:

The Phylogenetic hypothesis:
The coronoid foramina and foramina on the lateral aspect of the ramus communicating with the usual mandibular foramina bilaterally have never been observed in humans as yet or in other proboscideans, excluding elephants.

It was Ferretti & Debruyne who interpreted a specimen of Elephas maximus as possessing a coronoid foramen which “merged with the alveolus of the distal most erupting molar” to be in confluence to form a coronoid canal. This coronoid canal was first identified as a synapomorphy of Pachycephalidae by Tassy & Shoshani in 1988. This structure is consistently present in most adult paenungulates and has been reported in a fossil rosocelid. The presence of spaces in the dentary connecting the oral cavity to the dentary canal, the internal aspect of the jaw fluctuates during ontogeny, and connections still exist between the coronoid canal, the internal aspect of the coronoid process, and the tooth alveoli in different mammalian taxa. The possible hypothesis as understood from the available literature by the author is as follows:

References:

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