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**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1478701>Available online at: <http://www.iajps.com>**Research Article****IN PANORAMIC RADIOGRAPHS VARIABILITY IN INTER-OBSERVER ASSESSMENT OF MENTAL FORAMEN RADIOGRAPHICALLY AND ITS APPEARANCE*****Dr. Anam Shahzad, *Dr. Qandeel Nauman, *Dr. Um E Rubab**
*De'Montmorency College of Dentistry, Lahore**Abstract:**

Objective: The purpose of this analysis was to investigate inter-observer variability in the radiological interpretation of the variable views of the mental foramen of panoramic radiography.

Study Design: A Prospective Study.

Place and Duration: In the Dental Department of Services Hospital, Lahore for one year duration from July 2016 to July 2017.

Methods: Four examiners; Two dental x-rays, one dental implantologist and one oral surgeon examined independently 100 radiographs in panoramic view to determine the appearance of mental foramen based on the classification of Brooks and Yosue. Using the Kappa statistics, the agreement level was determined.

Results: On both sides the most common mental resistance was continuous and separate. The common foramen type is described in several cases, similar to those of the almost invisible ones. A fair agreement was made between the four observers. The variation in interpretation was between 0.3 and 0.49.

Conclusion: There were significant differences among 4 examiners. The variation in this interpretation did not depend on the observer's experience, but depended on the anatomical choices of the site to identify mental resistance of the individual. Panoramic images is not a reliable method to describe the mental resources appearance.

Key words: panoramic radiography, observer agreement, Kappa statistics, mental foramen.

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INTRODUCTION

The recent trend of missing tooth regeneration with the increased frequency of dental implants and orthognathic surgery has increased the likelihood of surgical procedures of mental resources. In this regard, almost all dental implantologists use a panoramic radiograph for preoperative assessment before osseointegrated implants placement. In the evaluation of the radiological examination performed with preoperative orthognathic and subapical surgery, it is necessary to prevent a sensitive lesion of the lower nerve of the tooth. "In addition, the acute and end branches of the lower and mental alveolar nerve are defined precisely in the local anesthesia of the soul foramen. It can be achieved effectively, ie the exact definition of the location and appearance of mental resources Clinical procedures for diagnosis and diagnosis of both are important. The lateral surface of the mandible is an important anatomical structure located at a higher position than the mandibular channel. This curve can be opened in a direction towards the surface and can be represented in the previous cycle or the mental channel to create a curve during the mesothelial mental foramen and the next call termination. The foramen passes and contains the lower lip and the gum of the sensory nerve and the soft tissue of the jaw, on the same side of the jaw Foramen can sometimes be misdiagnosed with a radiolucous lesion in the apical region. As a result the difference in anatomical positions of the foramens is defined. Direct measurements and observations on dry samples have found that the vertical position is lower generally than that of the second premolar. The free alveolar closer to the edge of the jaw is located between the mouth and the lower edge of the jaw. Into four types, Yosue and Brooks divided the radiographic appearance of the mental foramen, with the most common appearance being of a different type, while the continuous and common species reached the same result. The mental foramen absence (type unspecified) on the panoramic radiograph may be related to the teeth, the trabecular shape of the bone, the dark radiographs and the jaw thinning. The aim of this analysis was to evaluate the agreement level between 4 dentists; two dental x-rays, a dental implantologist and an oral surgeon in

the evaluation of the emergence of mental foramen using the classification of Youse and Brooks in traditional panoramic radiographs.

MATERIALS AND METHODS:

This analysis was performed on 130 radiographs of adults randomly selected from inactive files in dental department of Services Hospital, Lahore. The emergence of mental resistance was determined by four observers on a panoramic radiograph for both sides. Panoramic radiographs were performed on a machine orthopantomograph with 57-90 KVP 10 (Siemens, Germany), 5-12 mA and a condensation screen with an equivalent filtration of 2.6 mm Al / IEC-80 522. Helio HI plus normal speed and Kodak X-OMAT RP pan Df 75. The films were processed with the HP 226 processor according to the instructions manual. Panoramic radiographs were initially performed for different dental procedures. The X-rays were numbered for assessment by the 4 calibrated observers; two oral surgeon (C) and dental radiologists and dental implantologist (D). Everyone knows the classification of mental foramens, which yosue recognizes the appearance of mental foramens, as follows: a separate type in which the foramen is clearly separated from the mandibular canal; a common foramen type with a border of undefined; and finally, an unidentifiable type that cannot be seen on x-ray under normal exposure and vision conditions. Each observer evaluated 100 panoramic radiographs separately in a dimly lit room under standard image conditions. For every panoramic radiograph, the left and right mental stimuli were recorded separately and recorded in a specially defined format. The (SPSS) statistical package was used for the Kappa statistics analysis for multiple observers and the agreement between observers was recorded at 94% confidence interval.

RESULTS:

The different types of opinions for each observer are given in Table 1. The most common appearance was continuous type and then separate type.

TABLE 1: FREQUENCIES OF DIFFERENT APPEARANCES OF MENTAL FORAMEN FOR BOTH SIDES OF THE 100 PANORAMIC RADIOGRAPHS OBTAINED BY THE FOUR OBSERVERS.

Observer	Side	Continuous	Separate	Diffuse	Unidentified
A	Right	40	43	3	14
	Left	39	49	3	9
B	Right	38	29	20	13
	Left	41	27	18	14
C	Right	48	31	16	5
	Left	49	27	17	7
D	Right	58	20	8	14
	Left	48	29	11	12

The rate of unidentified type and diffuse type was approximately same. Between four different experts the agreement varies from 0.34 to 0.49 according to the Kappa statistics (Table 2).

TABLE 2: KAPPA VALUE FOR DETECTION OF MENTAL FORAMEN FOR THE RIGHT AND LEFT SIDE ON PANORAMIC RADIOGRAPH FOR 100 SUBJECTS BY THE FOUR OBSERVERS.

	Observers	Right side			
		A	B	C	D
Left side	A		.364	.427	.342
	B	.452		.437	.360
	C	.455	.484		.391
	D	.372	.390	.490	

There was no obvious difference in radiographic evaluation between the left and right sides of the radiographs for 4 observers. The compliance level between the two dental radiologists was on the right (0.37) and on the left side (0.46). The median fit between the oral surgeon and the oral radiologist (author) was calculated as 0.43 and 0.46 for the left and right sides, respectively. On the other hand, the agreement between oral implantologist and oral radiologist was 0.35 on the right and 0.36 on the left. However, the compliance level between the oral implantologist and the oral surgeon was 0.40 on the right and 0.50 on the left. The level of agreement between the oral surgeon and the oral radiologist was satisfactory than the agreement level between the oral implantologist and oral surgeon and the oral radiologist.

DISCUSSION:

It is also a relatively simple operation before placing the value of X-rays and preoperative presentation value, dental implants and jaw tip, which allows routine use of many surgeons and implants before surgery. It has the advantages of displaying a wider area of hard tissue, the continuity of the visualized area and the speed at which the sight is generated. However, the importance of this radiographic examination is recommended by the American Academy of Oral and Maxillofacial Radiology, so

limiting the problem of providing enough information about its morphology is considered the first diagnostic aid before any surgical treatment, and two possible deterioration and turbidity. In dimensions of bone you can see the radiological reference points of mental resources in most panoramic radiographs. However, the appearance of these reference points changes without any change in the radiographic situation. In this study, visualization of mental resistance was performed on the basis of reference points of individual subjective variables.

The most common view of the observed mental resources was the continuous and different types of common and unspecified types. The first four types were identified by four observers in almost 50% of the radiographs and the diffuse type was less frequently detected. However, in this study, the mid-level agreement between four observers can be attributed to the standardization session prior to radiological interpretation. This session ensured reliability in the radiographic interpretation of the appearance of mental stimuli. In this study, it was not difficult to determine the types of separate and continuous mental tests. However, there were great difficulties in distinguishing between the four observers and the generalized and unidentifiable type that could be the cause of a fair agreement. Although many studies have been reported to assess the appearance and location of mental foramen in panoramic radiographs, panoramic radiographs have not always allowed the foramen to be correctly identified by themselves. This can be attributed to the subjectivity of the method and to the intrinsic properties of the auditor, such as emotional, visual and neurological features.

CONCLUSION:

Although there is no gold standard for the evaluation and identification of mental foramina in this study, an important aspect of this document is a moderate to moderate agreement among 4 observers. However, it was impossible to determine the diagnostic value of conventional panoramic radiography to determine the correct interpretation of the observer or to determine the mental resistance. For this reason, advanced imaging methods are required for accurate identification of mental resources.

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