STUDY OF ALIGNMENT OF INFRAORBITAL FORAMEN (IOF) WITH MAXILLARY TOOTH IN DRY HUMAN SKULLS OF NORTH INDIAN POPULATION

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1. Introduction

Infraorbital Foramen (IOF) is a constant feature on the anterior surface of body of maxilla present bilaterally 0.5 to 1 cm. below infraorbital margin [1,2].

Infraorbital artery which is a branch of third part of Maxillary artery exits through IOF. Its branches mainly supply structures in maxillary region.

Infraorbital nerve is a continuation of Maxillary nerve, second division of Trigeminal nerve [3,4]. The terminal branches of Infraorbital nerve leave the infraorbital foramen. These supply skin of lower eyelid, conjunctiva, lateral surface of external nose, cheek and upper lip including skin, mucous membrane and gum [3,4,5,6,7,8,9,10].

It is interesting to note that traits such as localization of infraorbital foramen not only differs between populations of different geographic zones but also within the inhabitants of same geographic environment [11]. Furthermore, the position of infraorbital foramen in relation to maxillary teeth is shown to be varied among populations [7,8,12].

The morphometry of IOF plays an important role during regional block anaesthesia techniques of Infraorbital nerve [13,14,15,16] and nerve block during surgical procedures around it.

Thus knowledge of location of this foramen from reference points in this area provides important data for:

- **Aims -**Infraorbital Foramen (IOF) is a constant feature on the anterior surface of body of maxilla below the orbital margin. Infraorbital nerve & vessels pass through it. IOF assumes great importance in the field of maxillo- facial surgery & dentistry as Infraorbital Nerve that passes through it is anaesthetised during these procedures. Maxillary tooth is readily visible and palpable landmark. It can be highly helpful in locating IOF. Hence a study was conducted to determine alignment of IOF with maxillary tooth.

- **Methods -**The study was conducted in Deptt. of Anatomy, GSV Medical College, Kanpur. 300 macerated dry adult human skulls of North Indian population belonging to both sexes were selected. The skull was placed in Frankfurt plane. Alignment of IOF with maxillary tooth was noted by suspending a needle with flexible wire from the center of IOF and determining the position of its tip.

- **Result -**The present study found that IOF was in same line with 2nd pre- molar in 90.67% of skulls.

- **Conclusion -**Thus knowledge of alignment of IOF with maxillary tooth helps in locating its position.

2. MATERIALS AND METHODS

The study was conducted in the Department of Anatomy, G.S.V.M. Medical College, Kanpur, Uttar Pradesh, India.

300 macerated dry adult human skulls of North Indian population belonging to both sexes were selected. Age, sex and race were not considered. The skulls of children were not considered. Because of great amount of error in attempting sex differentiation, it was decided not to differentiate skulls by sex [21].

The measurements were taken with the help of Craniostat

Needle & flexiblewire

Digital camera for illustration

Alignment of IOF with maxillary tooth (premolar/molar) was determined by placing skull in Frankfurt plane and suspending a needle with flexible wire in the centre of IOF & determining position of its tip.

**RESULTS**

The study undertaken found that maximum number of IOF were in alignment with 2nd premolar tooth, followed by 1st premolar and then 1st molar tooth.
The maxillary tooth is readily visible and palpable landmark which can aid in locating the position of IOF.

The present study found that IOF was most commonly in line with 2nd premolar followed by 1st premolar and 1st molar tooth. Maximum researchers found that IOF was in line with 2nd premolar tooth. The present study found this in 90.67% of skulls. It was close to result obtained by Apinhasmit, 2006 i.e. 85%.

According to present study, IOF was in line with 1st premolar tooth in 5.83% of skulls. The finding was in sync with study conducted by Aziz, 2000.

In present study, 3.5% of skulls showed IOF that were in alignment with 1st molar tooth. The finding is in agreement with studies by Apinhasmit, 2006 (3.0 %) and Ilayperuma, 2010 (3.7%).
CONCLUSION

IOF was in same line as 2nd premolar in 90 % on right side and in 91.33 % on left side.

Thus, study of alignment of IOF with maxillary tooth would serve as a useful guide in locating IOF.

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References