Mandibular third molar impactions in Puducherry South India –
A descriptive cross-sectional study for one year.

Dr. S. Devakumari MDS\textsuperscript{1}, Neil Dominic MDS\textsuperscript{2}
\textsuperscript{1}(Associate professor, Department of Dentistry, Indira Gandhi medical college & RI, Puducherry, India).
\textsuperscript{2}(Department of Dentistry, Indira Gandhi medical college & RI, Puducherry, India, corresponding author).
Corresponding author: Neil Dominic MDS

Abstract
Aim and objective: To evaluate the prevalence and patterns of third molar impactions treated in IGMC&RI
Materials and methods: Patient treatment records of 150 pts and IOPA were retrieved and analysed for
demographic data, type of impaction, aetiology for removal, side of impaction and pathology associated with
third molars.
Results: The results proved that vertical is the most common type of impaction, Male more affected than
Females, Right side more affected than Left, Pericoronitis is the most common aetiology and the most common
pathology is caries in the second molar.

I. Introduction
Impacted mandibular third molar are of great concern to the general dentists and maxillofacial surgeons
as it leads to Pericoronitis, food impaction, dental caries, odontogenic pathologies and predisposes to the
fracture of the mandible. The prevalence and patterns of the mandibular third molar impactions in the tertiary
care government hospital of Puducherry (IGMC&RI) was conducted to assess the prevalence and patterns of
mandibular third molar impactions in Puducherry.

II. Materials And Methods
Patient treatment records and radiographs (IOPA) were retrieved, tabulated and analysed using MS Excel
software for proportions of categories studied. This retrospective descriptive cross-sectional study was
conducted in 150 patients who were operated in the department of dentistry IGMC&RI, 2018.

Inclusion criteria:
- 17-56 yrs
- Trans-alveolar extraction
- Removal due to prosthodontic reasons
- Removal due to periodontal reasons
- Tooth associated with pathology
- Third molars extracted by closed method

Exclusion criteria:
- Tooth associated with fracture mandible
- Removal due to orthodontic reasons

III. Results
On analysing the above data, vertical impaction are the most common type of impaction (33\%) followed by
mesioangular (25\%) and then horizontal (22\%) and at last distoangular (20\%).
As far as gender is concerned it has a male predominance (male -61\%, female -39\%). The most
common aetiology being Pericoronitis(43\%) followed by caries in third molar(26\%) and the commonest side of
impacted molars surgically removed was right side (59\%) .
The common pathologies encountered with third molars are caries in second molar (46\%), periapical
pathology in third molar (20\%), increase in follicular space (20\%) and associated cysts and tumours (14\%).
Mandibular third molar impactions in Puducherry South India – A descriptive cross-sectional study.

**Diagram:**
- **TYPE OF IMPACTION**
  - Vertical: 33%
  - Mesioangular: 25%
  - Distoangular: 20%
  - Horizontal: 22%

**Diagram:**
- **TYPE OF IMPACTION**
  - Vertical
  - Mesioangular
  - Horizontal
  - Distoangular

**AETIOLOGY**
- Percoronitis: 45%
- Caries in third molar: 26%
- Food impaction: 20%
- Associated pathology: 11%
Mandibular third molar impactions in Puducherry South India – A descriptive cross-sectional study

Discussion

Mandibular third molar surgeries had become routine dento-alveolar surgeries for maxillofacial surgeons. The magnitude of the problem cannot be overlooked due to increase patient overload day by day. The impactions are reported to be next common to dental caries and periodontitis in common dental problems.

The study of prevalence and patterns of mandibular third molar impaction in Puducherry (union territory) in south India was never reported in the literature before. IGMC&RI medical college government hospital is a tertiary care centre with excellent patient reference from in and around Pondicherry. So we took up the study to analyse the prevalence and patterns of mandibular third molar impactions.

The most common type of impaction reported were vertical impactions and the study is consistent with study of Venu Gopal et al. on south Indian population, Schersten E et al. on Swedish dental students, Zohair Haider et al. on Saudi community and D. Rajdan on Indian population. Studies in Nigeria by Gbotolorun et al. and Obiechina et al. showed that the mesioangular type of impaction was frequently encountered impacted tooth. Similarly it was also the most common type of impaction among Chinese (80%) and Korean populations (46.5%). A study in Thailand revealed that out of 680 impacted molar Extractions, 402 teeth were mesioangularly impacted.

As far as gender predilection is concerned our study shows male (61%) preponderance than females (39%). This is not in accordance with Hellman theory which states that female mandible stops growing just after the eruption of the third molars while male mandible continues to grow even after the eruption of the third molars. The theory does not prove to be correct with our study.

Recurrent Pericoronitis is the most common etiology found and this is similar to the study done by Almendros-Marqués et al., Bataineh et al., 2001; Brickley and Shepherd. On the contrary, Adeyemo et al. found that caries and its sequelae was the prime reason of extraction, followed by pericoronitis and periodontitis.

Th pathologies encountered with third molars are caries in second molar (46%), periapical pathology in third molar (20%), increase in follicular space (20%) and associated cysts and tumours (14%).

Impacted third molars are always associated with Pericoronitis, periodontitis, caries of third molars, caries of second molars, odontogenic space infections, odontogenic cysts, tumours and fractures of mandible.

The mean eruption age of third molars were 17 to 21 years. When the tooth fails to erupt in to the oral cavity it leads to all the above said complications. Prophylactic removal of third molars is not the general norm.
followed in country like India. Awareness about this potential problem is minimal in the Indian population. Surgical removal of the third molars were always done if the tooth is symptomatic.

V. Conclusion

The study revealed that vertical impaction is the most common type of impactions. Male more affected than females. Pericoronitis is the most common aetiology for removal of third molars and the common associated pathology being caries in second molars. The study strongly recommends prophylactic removal of potentially impacted mandibular third molars to minimise the postoperative pain and to prevent onset of pathologies.

References