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INCIDENCE OF IMPACTED MOLARS IN HYPOTHYROID PATIENTS - A RETROSPECTIVE STUDY

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ABSTRACT:

Introduction: The improper function of thyroid gland leads to decreased production of the thyroid hormone leading to hypothyroidism. Hypothyroidism in children causes cretinism macroglossia, delayed eruption of teeth and malocclusion. One of the reasons for the delayed eruption is seen to be hypothyroidism.

Aim: Aim of the study is to find the incidence of impacted molars among the hypothroid patients.

Materials and Methods: Data collected from a patient database from a private dental college for the research with concerned ethical approval and then the data was added to an excel sheet and categorized and SPSS was used for plotting graphs. The datas were statistically analyzed and the results were obtained.

Results and Discussion: Results were obtained from the software, uploaded in the excel and shared to SPSS for the data analysis. From the total data of 126, 16 patients were taken under the criteria of hypothyroid. Hypothyroid female patients were high which included 13 compared to the male patients which included 3. the age group of 20-30years had the highest count of hypothyroid cases with impacted molars in female patients compared to male patients.

Conclusion: The study results showed high rates of female hypothyroid patients comparatively in the age group 20-30years.

KEYWORDS: Delayed eruption, Hypothyroid, Impacted molars, Innovative technique, SPSS software

INTRODUCTION:

Thyroid gland has the main function of producing thyroid hormones T3 and T4. The changes in the production of thyroid hormone, the increase causes hyperthyroidism and the decrease causes hypothyroidism. The improper function of thyroid gland leads to the decreased production of the thyroid hormone leading to hypothyroidism (Chandna and Bathla, 2011). Main causes for the hypothyroidism include surgery of the thyroid gland, insufficiency of the thyroid hormone production and radioactive iodine. Hypothyroidism in children causes cretinism or diminished growth leading to macroglossia, delayed eruption of teeth and malocclusion of teeth (Loevy, Aduss and Rosenthal, 1987). Characteristic features of hypothyroidism include lethargy, weight gain, puffiness of face and eyelids. Thyroid hormone depletion leads to oral complications like delayed eruption of tooth, altered morphology in the tooth structure, poor periodontal health, macroglossia(Young, 1989). In severe hypothyroidism cases it shows high effects on the tooth structure, leading to prolongation in dentition eruption and tooth development(Bedi and Brook, 1984). The symptoms and the signs of the hypothyroidism can be observable on the proper examination of the orofacial complex.

One of the main criteria for delayed eruption of tooth from the past studies shows the history of delayed eruption of the tooth (Young, 1989). Long term severe effects of the hypothyroidism leads to dental defects mainly involving the impaction of the lower molars (Loevy, Aduss and Rosenthal, 1987). The need for consumption of thyroxine during the decrease levels of thyroid hormone inorder to compensate for the levels of thyroid hormone. The effect of the thyroxine shows decrease of resorptive lesions in the bone remodelling process related to resorption of the root (Poumpros, Loberg and Engström, 1994). The thyroid hormone in low dose has good protective effects on the resorptive root surface and helps in reducing the extent of the root resorption(Shirazi, Dehpour and Jafari, 1999). The dentist has to be preventive and conscious in treating patients with hypothyroidism (Pinto and Glick, 2002). Our team has extensive knowledge and research experience that has translated into high quality publications(J *et al.*, 2018),(Wahab*et al.*, 2018),(Mudigonda*et al.*, 2020),(Narayanasamy *et al.*, 2021),(Gan*et al.*, 2019; Li *et al.*, 2019; Ma *et al.*, 2019; Bishir*et al.*, 2020; Zhang *et al.*, 2020; Fan *et al.*, 2021; Saravanakumar*et al.*, 2021; Veeraraghavan*et al.*, 2021; Wang *et al.*, 2021; Wei *et al.*, 2021)(Sathya*et al.*, 2020),(Felicita and SumathiFelicita, 2018; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Chandrasekar*et al.*, 2020).(Su *et al.*, 2019; Wan *et al.*, 2020). Aim of the study is to find the incidence of impacted molars among the hypothroid patients.

MATERIALS AND METHODS:

Study design:

The study design included all the hypothyroid patients and those hypothyroid patients with impacted molars. Patient's age and the gender were included. The patients not under the inclusion criteria were excluded from the study.

Sampling technique:

The study was done based on a random sampling method. To decrease the effect of sampling bias, all the patient cases were included after prior review.

Data Collection and Tabulation:

Data was collected using the patient database between the span of 1st March 2020 to 31st of February 2021. About 126 cases were reviewed and according to the inclusion criteria the data was collected only among the hypothyroid patients with impacted molars in the age group of (20-60yrs) after the cross verification by the reviewer. The collected data was tabulated based on the age and gender of the patients.

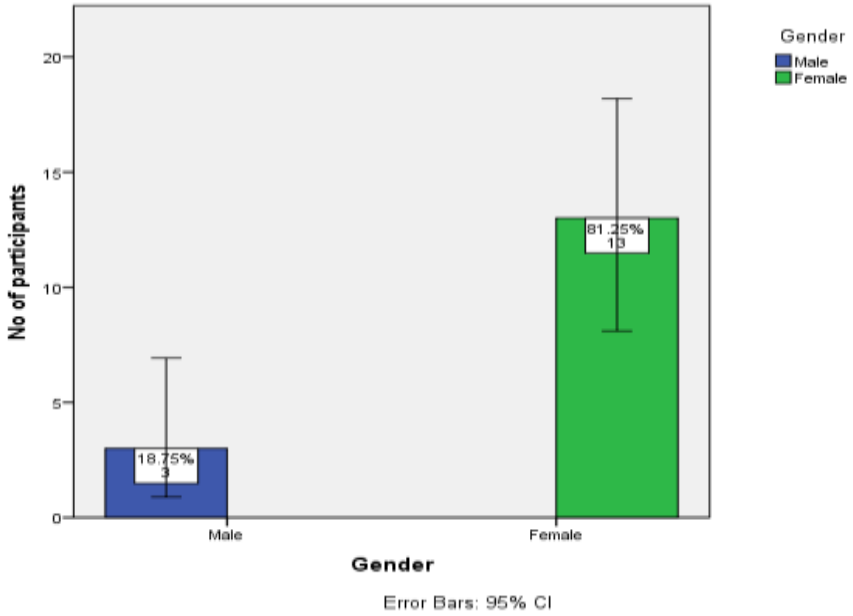
Statistical analysis:

The tabulated data were converted to variables and the data was imported to SPSS. Using the SPSS software version 20.0 the variables were expressed as percentages and frequency and bar graphs were plotted accordingly. The statistical significance was analysed among the age group and gender in hypothyroid patients with impacted molars.

RESULTS:

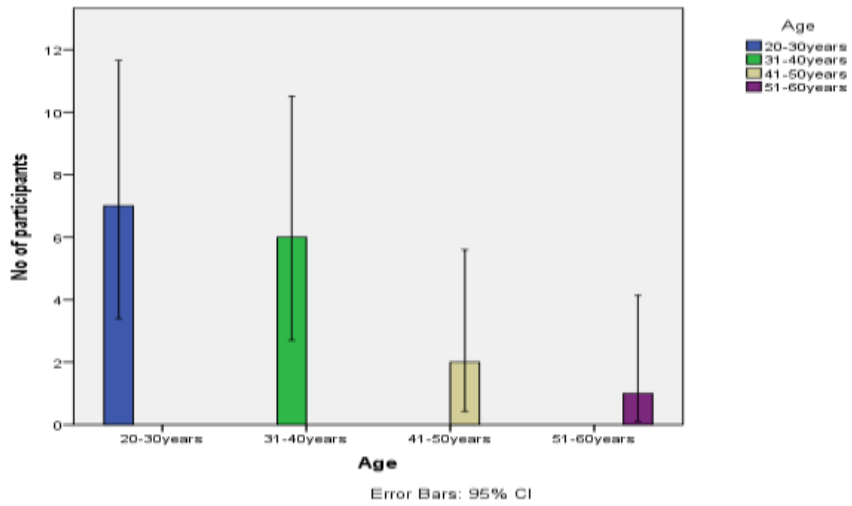
Results were obtained from the software, uploaded in the excel and shared to SPSS for the data analysis. From the total data of 126. Among them 16 patients were taken under the criteria of hypothyroid. Hypothyroid female patients were high which included 13 compared to the male patients which included 3. In comparison, the age group of 20-30years had the highest count of hypothyroid cases with impacted molars in female patients compared to male patients. The study results showed a high amount of impacted molars in the mandibular arch compared to the maxillary molars.

Graph 1: Comparison of male and female patients.



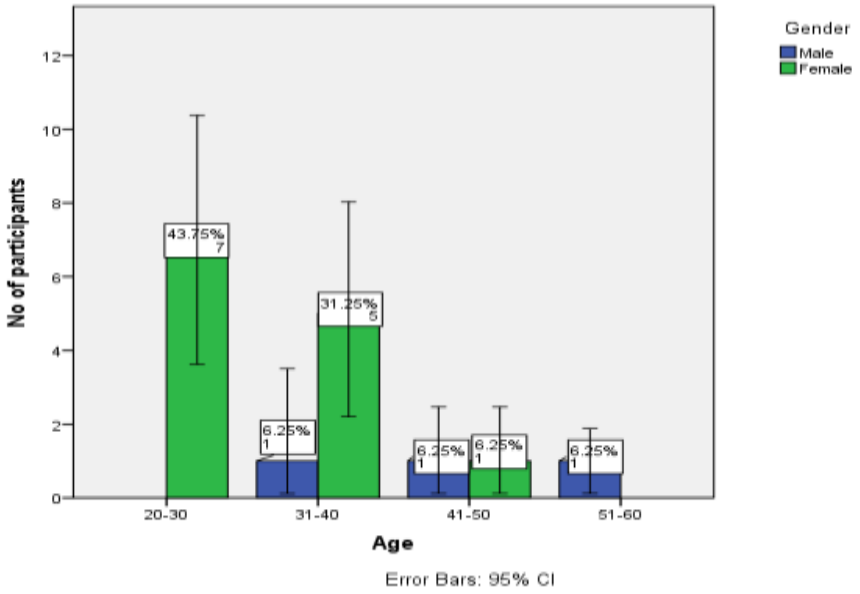
Graph 1, represents the comparison of male and female patients. The percentage and count represented in Y axis and gender represented in X axis. Green colour represents female patients which is 81.25% and blue colour represents male patients which is 18.75%.

Graph 2: Graph of total count and age group.



Graph 2, represents the comparison of male and female patients. The percentage and count represented in Y axis and gender represented in X axis. Blue colour represents 20-30years which is 43.75%, green colour represents 31-40years which is 37.50%, peach represents 41-50years which is 12.50% and purple colour represents 51-60 years which is 6.25%.

Graph 3: Comparison of Age and Gender.



Graph 3, represents the comparison of male and female patients. The percentage and count represented in Y axis and gender represented in X axis. Green represents the female patients which is 81.25% and blue represents the male patients which is 18.75%.

DISCUSSION:

Decrease in the production of thyroid hormone or improper function of the thyroid gland lead to hypothyroidism. Dentists should be conscious of treating a patient with hypothyroidism by asking about past history and the type of medication they consume in order to avoid medical emergencies (Young, 1989). On the aspect of preventing medical emergencies the history is asked prior to the treatment through which the comparison of impaction and hypothyroidism is done. Previous studies show that the impacted molars are one of the abnormalities of hypothyroidism, mainly the lower molars. Hypothyroidism with impactions states that the long term effects of the reduced thyroid hormone leads to the abnormalities in craniofacial areas along with delayed eruption of tooth (Loevy, Aduss and Rosenthal, 1987). Long term hypothyroidism is rare but this problem can lead to dental abnormalities in the new born children with hypothyroid mothers (Little, 2006).

CONCLUSION:
Within the limitations of the study, results showed very less hypothyroid patients with impacted molars compared to the total results obtained for the impacted molars from the collected high rate of female hypothyroid patients comparatively in the age group 20-30years.

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CONFLICTS OF INTEREST:
No conflicts of interest

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