



## Pulpotomy In Children Treated Under General Anaesthesia- A Retrospective Cohort Study

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Article History	Abstract
Received: 06 June 2023 Revised: 05 Sept 2023 Accepted: 06 Nov 2023	<p><b>Introduction:</b> Pulpotomy is a minimally invasive procedure in which the coronal part of the tooth is debrided and radicular part of the tooth remains intact. Sometime pulpotomy is done extensively affecting the tooth and it is too painful for a child to bear. So, in order to avoid the uncooperativeness of a child towards treatment, general anaesthesia is given safely without any harm. <b>Aim:</b> To analyse and evaluate the frequency of pulpotoomies in children under general anaesthesia <b>MATERIALS AND METHOD:</b> Retrospective study was carried out in a private dental college and hospital which is located in Chennai. Ethical approval was obtained from the Institutional review prior to the start of the study. Data were collected from the records of children less than 15 years of age who were treated under general anesthesia between September 2020 and February 2021. <b>Results:</b> The most of the children who have treated pulpotomy under general anaesthesia were of the age group of 6 to 10 years and most of the children are male with a margin of difference of 9% than female. <b>Conclusion:</b> the frequency of children undergoing pulpotomy under general anaesthesia is slightly higher.</p> <p><b>Keywords:</b> Pulpotomy, Gender, Age, General Anaesthesia, Freequency</p>
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### 1. Introduction

Pulpotomy is a minimally invasive procedure done in children to preserve the vitality of the tooth and restore its form and function. The most common materials used for pulpotomy are formocresol, MTA, Biodentin. Pulpotomy is indicated in cases of accidental or carious pulp exposure in primary teeth with the history of spontaneous pain, absence of abscess formation and in the absence of inter radicular bone loss, inter radicular radiolucency.

The main advantage of doing pulpotomy is to preserve the tooth until the shedding of primary tooth, high success rate, single visit techniques, easiness of treatment, feasibility of the treatment is more, eliminate the pain, time saving procedure. Pulpotomy is the highly feasible technique which gives highest success rate, moreover it is more effective.(1) The pulpotoomies which is done in a emergency condition relieves the pain immediately and there is no postoperative discomfort.(2) Additionally , it's a less time-consuming and less-expensive treatment in comparison to traditional endodontic therapy.(3) The pulpotomy is commonly done in primary molars which has the higher chance of getting infected in children.(4)

General anaesthesia could be a medically induced coma with loss of protective reflexes, resulting from the administration of one or more general anesthetic agents. General anaesthesia is indicated for non-cooperative children whose age is under four years.(5) General anaesthesia is indicated in patients who are unable to cooperate with certain physical, mental or medically compromising disability, extremely uncooperative, fearful, anxious, physically resistant or uncommunicative child. Patients requiring immediate comprehensive oral and dental needs, patients who are requiring care for whom the utilization of general anesthesia may protect the developing the psyche and/or reduce medical risks.(6)

The most common dental procedures done under general anaesthesia are dental extraction, restoration procedures, endodontic treatments.(7) Previous studies have shown the success rate of pulpotomy which

was done in children with age below six years under general anaesthesia (8) and the other studies also shown that there was a success rate of ferric sulfate pulpotomy under general anaesthesia noted(9). The current study focuses on the frequency of pulpotomy in children under general anaesthesia. The aim of the present study was to analyse and evaluate the frequency of pulpotomies in children under general anaesthesia.

## 2. Materials And Methods

The retrospective study was carried out in a private dental college and hospital which is located in Chennai. Ethical approval was obtained from the Institutional review prior to the start of the study.

Data was collected from the records of children less than 15 years of age who were treated under general anaesthesia between September 2020 and February 2021. A total of 55 children who were treated under general anaesthesia with Pulpotomy were included in the study. Records with incomplete data were excluded from the study, Data collected with the following parameters; age, gender, pulpotomy procedures. The collected data were divided into three age groups 0-5 years, 6-10 years, and 11-15 years and analysed using IBM SPSS statistical software. Data analysis was done using the CHI-SQUARE test. The p value was set at 0.05 as level of significance.

## 3. Results and Discussion

AGE OF CHILDREN TREATED WITH PULPOTOMY UNDER GENERAL ANAESTHESIA

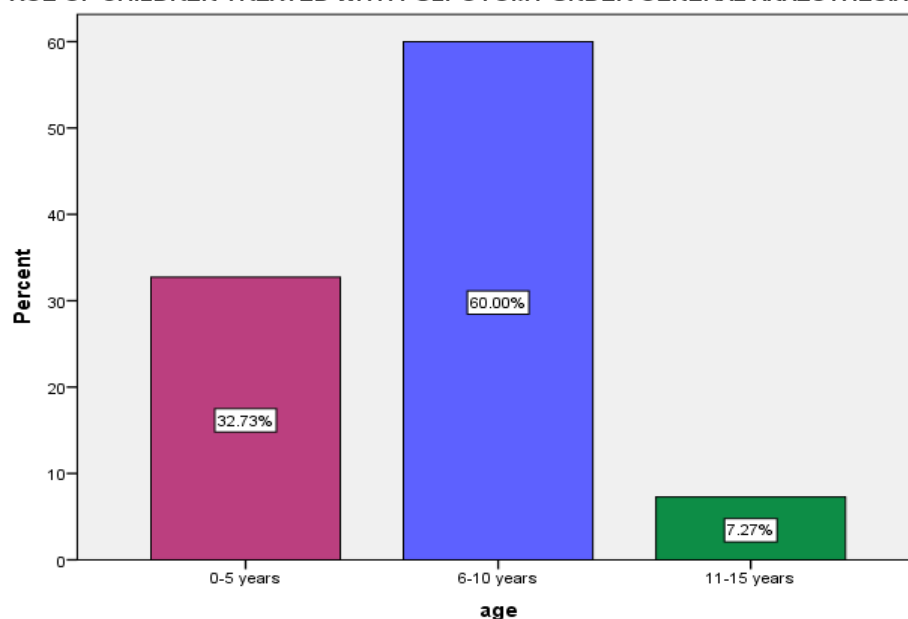


Figure 1 describes the age of the children who have undergone pulpotomy under general anaesthesia. Pink colour represents the children under the age group of 0 to 5 years, blue colour represents the children under age group of 6 to 10 years and green colour represents the children under age group of 11 to 15 years. Out of 55 children, 32.73% of them were below 5 years of age, 60% of them were 6 to 10 years of age and 7.21% were 11 to 15 years of age.

TREATMENT OF PULPOTOMY IN QUADRANT TOOTH UNDER GENERAL ANAESTHESIA

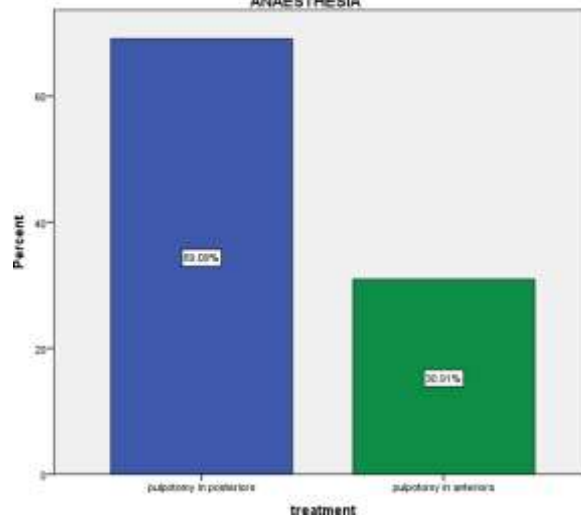


Figure 2 represents the pulpotomy in which quadrants are done under General anaesthesia., Blue colour represents the pulpotomy which was done in posterior tooth region under general anaesthesia and green colour represents the pulpotomy which was done in anterior tooth region under general anaesthesia. Out of 55 children, 69.09% of them done pulpotomy in posterior tooth under general anaesthesia and 30.91% of them done pulpotomy in anterior tooth under general anaesthesia.

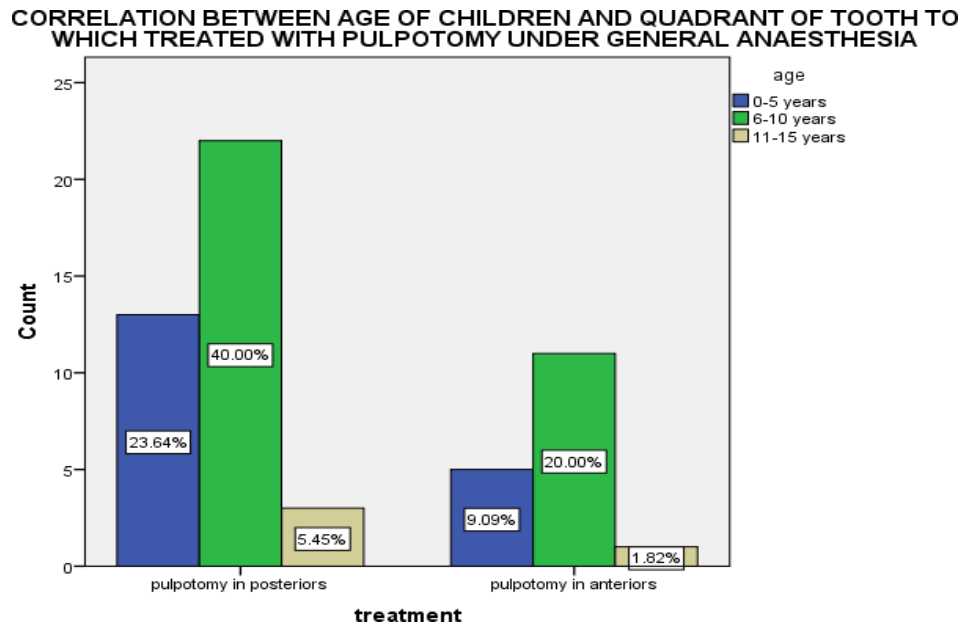


Figure 3 represents the correlation between treatment age of children and quadrant of tooth to which pulpotomy treated under general anaesthesia. Blue colour represents 0 to 5 years of age groups, green colour represents 6 to 10 years of age and yellow colour represents the 11 to 15 years of age group. 23.64% of them were the age group of 0 to 5 years treated for pulpotomy in posterior tooth region, 40% of them were the age group of 6 to 10 years treated for pulpotomy in posterior tooth region and 5.45% of them were the age group of 11 to 15 years treated for pulpotomy in posterior tooth region under general anaesthesia. 9.09% of them were age group of 0 to 5 years treated for the pulpotomy in anterior tooth region, 20% of them were age group of 6 to 10 years treated for the pulpotomy in anterior tooth region, and 1.82% of them were age group of 11 to 15 years treated for the pulpotomy in anterior tooth region under general anaesthesia. It is statistically insignificant (p value = 0.073; p value >0.05).

The present study investigates the frequency of pulpotomies which was done in children under general anaesthesia which makes it easier to understand through the graphical results. The present study shows that the majority of the pulpotomy procedure was done in children between the ages of 6 and 10 years (60%), 32.73% in children less than 5 years and the least in children above 10 years. A study which was conducted in Taipei showed that the children above 6 years of age received pulpotomy under general anaesthesia.(11) The result was similar to the results of the present study in which children more than six years old got treated with pulpotomies under general anaesthesia.

From the results of the present study, it can be seen that the pulpotomy was more commonly done in the posterior tooth compared to the anterior teeth. Another study done in Taiwan illustrated that pulpotomies were most commonly done in the posterior tooth than the anterior tooth under general anaesthesia (13) and it also matches to the results of the present study.

In the present study no significant association was found between the age and tooth/ quadrant in which Pulpotomy was done under General anaesthesia. A study by Dana et al also illustrated an insignificant correlation between age of the children and area of tooth region to which tooth was treated with pulpotomies(14) .

#### 4. Conclusion

The results of the present study concludes that Pulpotomy is also commonly done in children treated under General anaesthesia and 60% of it was done in children between 6-10 years of age.

#### Conflict of Interest:

The author declares that they have no conflict for this study.

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