

Single visit or multiple visits in a primary tooth: choice the dentists of Kashmir make

¹Dr. Sana Farooq, MDS, Tutor, Department of Pedodontics and Preventive Dentistry, Government Dental College and Hospital, Srinagar.

²Dr. Nazia Lone, MDS, Professor and HOD, Department of Pedodontics and Preventive Dentistry, Government Dental College and Hospital, Srinagar.

³Dr Mohsin Sidiq, MDS, Senior Lecturer, Department of Pedodontics and Preventive Dentistry, Government Dental College and Hospital, Srinagar.

Corresponding Author: Dr. Sana Farooq, MDS, Tutor, Department of Pedodontics and Preventive Dentistry, Government Dental College and Hospital, Srinagar.

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Abstract:

Aim: The aim of the study was to evaluate the knowledge, practices and attitude of dental professionals regarding pulpectomy and preference of choosing single visit pulpectomy (SVP) or multi visit pulpectomy (MVP) in children.

Methodology: A cross sectional survey was conducted on 80 dentists who had done pulpectomy in children and data was subjected to analysis.

Results: 75% of dentist chooses the right treatment of multi visit pulpectomy in children with non-vital tooth with abscess, infection or chronic sinus but 62% preferred single visit pulpectomy over multivisit pulpectomy in children.

Conclusion: Single visit pulpectomy has shown clinical and radiographic success similar to multiple visit pulpectomy however 62 % dentists preferred single visit

pulpectomy in children due to added advantage of less repeated mechanical trauma of using rubber dam, less use of chemical irrigants in pediatric patients, no need of repeated an aesthesia.

Keywords: Pulpectomy, SVP, MVP

Introduction

Over the years of evolution of newer techniques, availability of new instrumentations, recently advance in materials and better understanding of root canal configurations the face of endodontics has changed from multiple to single visit after maintaining proper sterility of canals.¹ Flare up can be defined as pain /swelling of the facial soft tissues and oral mucosa in the areas of endodontically treated tooth within few hours/ days following root canal treatment and when clinical symptoms like tooth pain on chewing, biting or without any reason is strongly expressed by the patient which

makes him to visit healthcare institution prior scheduled appointment .²

Single visit pulpectomy involves the removal of pulp and complete expiration of pulp followed by filling the canals short of the apex to the resistance point after irrigating followed by drying and obturating in the same visit .³ Iodoform is the potent bactericidal, non-irritant, radiopaque agent and Reyes and Reina et al stated that combining calcium hydroxide with iodoform has excellent radiographic, clinical and histological results. ⁴ Single visit endodontic therapy shows promising results in children with /without periapical radiolucency as stated by Singh A, Konak in 2020 where 75% of success of healing rate of periapical radiolucency was seen in single visit group whereas 37.5% was seen in multi visit group. On contrary Ether et al and Soltanoff and Montclair et al examined incidence of pain while comparing Single and Multiple visit endodontic procedures and concluded higher number of patients

with no pain in group that had multiple visit procedures.^{5,6}

Materials and methodology

A cross sectional study was conducted on 80 dental graduates of Government Dental college and Hospital, Srinagar, Kashmir who had done pulpectomy in primary molars of children. A Whatsapp based survey was conducted on them using a validated questionnaire that included the demographic details and survey items to evaluate the knowledge, attitude and practice of the dentists while performing single visit endodontics through a survey application ‘Survey Monkey ‘. The inclusion criteria for respondents were those interns, junior residents and dentists who had completed their pediatric and preventive dentistry posting and had done minimum of 20 pulpectomy and also received a lecture on “Endodontics in primary teeth”. The data was collected, subjected to analysis and expressed as figures.

Table 1

Q NO	A	B	C	D	E
1.What are the reasons of advocating perfectly over extraction?	Insufficient space for erupting permanent teeth	Impaction of premolars	Mesial tipping of molar teeth adjacent to the lost primary molars	Retained tooth with missing successor molar teeth	All of the above
2. Do you prefer Single visit pulpectomy or Multivisit pulpectomy for primary tooth?	Single visit pulpectomy	Multi visit pulpectomy			
3. Advantages of single visit pulpectomy are?	Time saving, no need of repeated local anesthesia, less mechanical trauma due to rubber dam and chemical trauma due to irritants	No inter appointment dressing is used	Both a and b		
4. Which theory advocates preference of single visit pulpectomy?	Entombing theory	Tombing theory	Deprivation theory		

5. According to AAPD what is objective off pulpectomy	Radiographic infectious process should resolve within six months followed by bone deposition and resolution of clinical signs and symptoms	Clinical infectious process should resolve within three months followed by disappearance pain on chewing /biting	Both a and b		
6. What are the advantages of multi visit pulpectomy over single visit pulpectomy	Inter appointment dressing helps reducing microbial load in primary /permanent teeth	Repeated irrigation helps in complete elimination of microorganisms	Both a and b		
7.A child whose vital tooth has hemorrhage from amputated radicular stump that is dark red in colour which slowly oozes out and is uncontrollable is indicated for?	Single visit pulpectomy	Multi visit pulpectomy	Both a and b		
8.A non-vital tooth with Abscess, infection or chronic sinus is indicated for?	Single visit pulpectomy	Multi visit pulpectomy	Both a and b		
9. In a patient who is indicated for pulpotomy what do you prefer?	I still prefer single visit pulpectomy over pulpotomy	I will prefer pulpotomy over single sitting pulpectomy			
10.Which obturating material do you prefer for single visit pulpectomy?	Zinc oxide eugenol	Calcium hydroxide with Iodoform	Endoflas		

Results

Table 2

	A %(n)	B % (n)	C % (n)	D % (n)	E % (n)	SKIPPED
Q1	5% (4)	-	21% (16)	8% (6)	67% (52)	2
Q2	80%(64)	20% (16)	0	0	0	0
Q3	35% (28)	2% (2)	62% (50)	0	0	0
Q4	42% (28)	30% (20)	27% (18)	0	0	14
Q5	32% (24)	11% (8)	57% (42)	0	0	6
Q6	8%(6)	18% (14)	74% (56)	0	0	4
Q7	25% (20)	60% (48)	15% (12)	0	0	0
Q8	12% (10)	75% (60)	12% (10)	0	0	0
Q9	28% (22)	72% (56)		0	0	2
Q10	10% (8))	70% (56)	20% (16)	0	0	0

A total of 10 pre tested questions were what sapped to 80 dental graduates of Government Dental College and Hospital, Srinagar, Jammu and Kashmir who had conducted pulpectomy in children and met the inclusion criteria. An ethical clearance was taken from the institution.

Among 80 participants who participated in the study 67% of them stated insufficient space for erupting permanent teeth, Impaction of premolars, Mesial tipping of molar teeth adjacent to the lost primary molars and Retained tooth with missing successor molar teeth as main reasons of advocating pulpectomy over extraction (Figure 1, Q1).

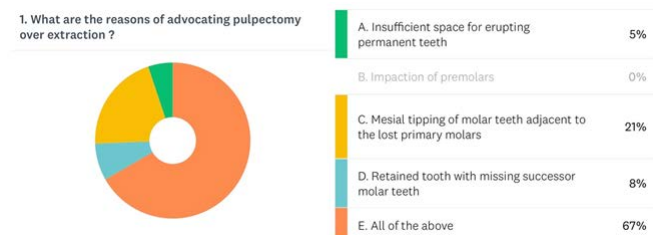


Figure 1: Q1

80% (N=64) of the dentist preferred single visit pulpectomy over multi visit pulpectomy in children (Figure 2, Q2).



Figure 2: Q2

62% of the dentists knew advantage of Single visit pulpectomy is that its time saving with no need of repeated local anesthesia, less mechanical trauma due to less rubber dam application, less chemical trauma due to limited use of irrigants and no interappointment dressing is used (Table 2, Q3).

Only 42% of dental professionals knew theory of SVP is entombing theory which states large number of microorganisms are removed during cleaning and shaping and remaining bacteria are entombed by the root canal obturation which deprives essential elements

needed for survival of microorganisms. (Figure 3, Q4, Table 2).

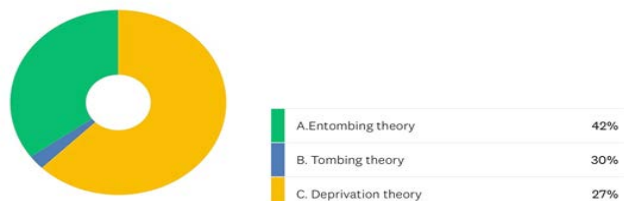


Figure 3, Q4

32% of dentists stated radiographic infectious process should resolve within 6 months followed by bone deposition and resolution of clinical signs and symptoms whereas 57% counted disappearance of pain on chewing within 3 months also as a symptom along with radiographic resolution of symptoms (Table 2, Q5).

74% of the dentist stated repeated irrigation and interappointment dressing helps in removing microorganisms (Table 2, Q6).

60% of the dentist were wrong in preferring multi visit pulpectomy over single visit pulpectomy in children who had vital teeth from which pulp oozing out from radicular stump that was dark red in color which slowly oozed out and is uncontrollable (Figure 4, Q7).

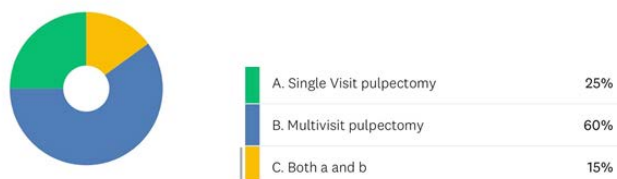


Figure 4: Q7

75% of dentist choose the right treatment of multi visit pulpectomy in children with non-vital tooth with abscess, infection or chronic sinus (Figure 5, Q8).

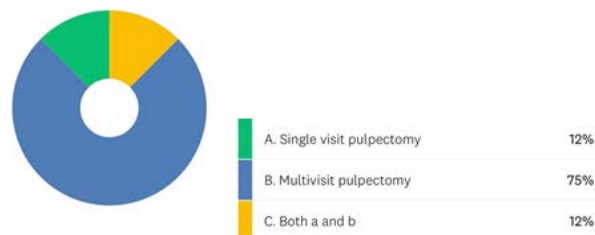


Figure 5: Q8

72% of dentist said they will prefer pulpotomy over single sitting pulpectomy in children indicated for pulpotomy (Table 2, Q9).

70% of dentists preferred calcium hydroxide with iodoform in children indicated for single visit pulpectomy (Figure 6, Q10).



Figure 6: Q8

Discussion

The concept of single visit endodontic treatment is based on the concept of entombing theory in which the large number of microorganisms are removed during cleaning and shaping and remaining bacteria are entombed leading to deficiency of essential nutrition for survival of microorganisms followed by antimicrobial activity of sealer or zinc ions of Gutta Percha which kills residual bacteria.⁷

The advantage of Single visit pulpectomy is that it is economically beneficial for both patients and Pediatric dentist and is less time consuming. The postoperative pain is less with both Single visit endodontics or Multiple Visit Endodontics but the added discomfort by

rubber dam application after multi visit treatment makes single visit treatment less painful.

Isolation is mandatory for successful endodontic treatment as stated by American Association of Pediatric Dentistry and UK National Clinical Guidelines for pulp treatment in primary dentition and use of rubber dam effectively minimizes bacterial contamination at the treatment site.⁸ In our study too dentist preferred single

visit pulpectomy over multiple visit pulpectomy in children.

Bhauruka SB et al in 2016 stated that no statistical significance was seen in clinical and radio graphic outcome of children aged between 4-8 years after six months healing period making single visit endodontics a viable option for treatment of primary teeth with apical periodontitis.⁹

Table 3

Author	Objective	Conclusion
Singla et al 10 (2008) -Invivo	To determine the success of single root versus Multiple visit root canal treatment in cariously exposed vital primary molars	Both visits demonstrated equal success
Triches et al (2014)-Invitro ¹¹	To determine efficacy of chemical mechanical procedures of 2 endodontic protocols for septic content reduction of root canals from primary teeth with pulp necrosis and peri radicular lesion	Single visit protocol showed greater efficacy in reducing endodontic infection
Bharuka and Mandroli ⁹ (2016)-Invivo	Compare and evaluate clinical and radiographic outcome of Single visit pulpectomy versus Multivisit pulpectomy treatment in primary teeth with apical periodontitis at 6 Month healing period	Single visit pulpectomy can be considered as a viable and better option than Multiple visit pulpectomy for treatment of primary teeth with apical periodontitis
Sevekar and Gowda ¹² (2017) -Invivo	To compare incidence of SVP /MVP pain and flare ups and correlated preoperative status of pulp with postoperative pain and flareups	Both groups showed no or minimal pain after 24 hours No statistical difference between 2 groups
Patel BS, Choudari SR ¹³ (2020)	Compare success rate of single and multivisit pulpectomy in primary teeth with apical periodontitis	Single visit can be considered as a viable alternative to Multivisit pulpectomy considering its various advantage in children

The main hypothesis behind preferring multi visit pulpectomy over single visit pulpectomy is that inter appointment dressing has an ability to reduce microbial load in primary teeth and permanent teeth but sometimes calcium hydroxide causes regrowth of microorganisms in the sterile root canals and fails to produce sterile environment.

The major drawback after pulpectomy is micro leakage which can be prevented by using stainless steel crown which is extremely durable. The objectives of pulpectomy as stated by American Association of Pediatric Dentistry Guidelines is radiographic infectious process should resolve within six months followed by deposition of wall and resolution of clinical signs and symptoms. The use of double side vent and needles over conventional open-ended needle has also decreased post-operative pain at first 24 hours after pulpectomy in primary molars .¹⁴

Conclusion

More and more evidence is required to choose single multi visit protocol to perform pulpectomy in primary teeth but clinicians prefer single visit perfecting in primary tooth due to time advantage, less pain due to rubber dam, less chemical trauma due to irrigants and radiation exposure. Single visit pulpectomy was preferred by 62% dentists on the basis that its time saving with no need of repeated local anesthesia, less mechanical trauma due to less rubber dam application, less chemical trauma due to limited use of irrigants.

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