



SRI LANKA DENTAL JOURNAL

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June 1999

- * The controversy of using adrenaline in patients with heart disease
- * True/ False type Multiple Choice Questions for undergraduate medical examinations
- * A morphological study of bilateral cleft lip
- * Fasting in paediatric out patient dental surgery
- * Crown diameters of permanent teeth in Sri Lankans

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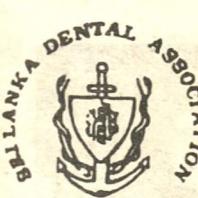
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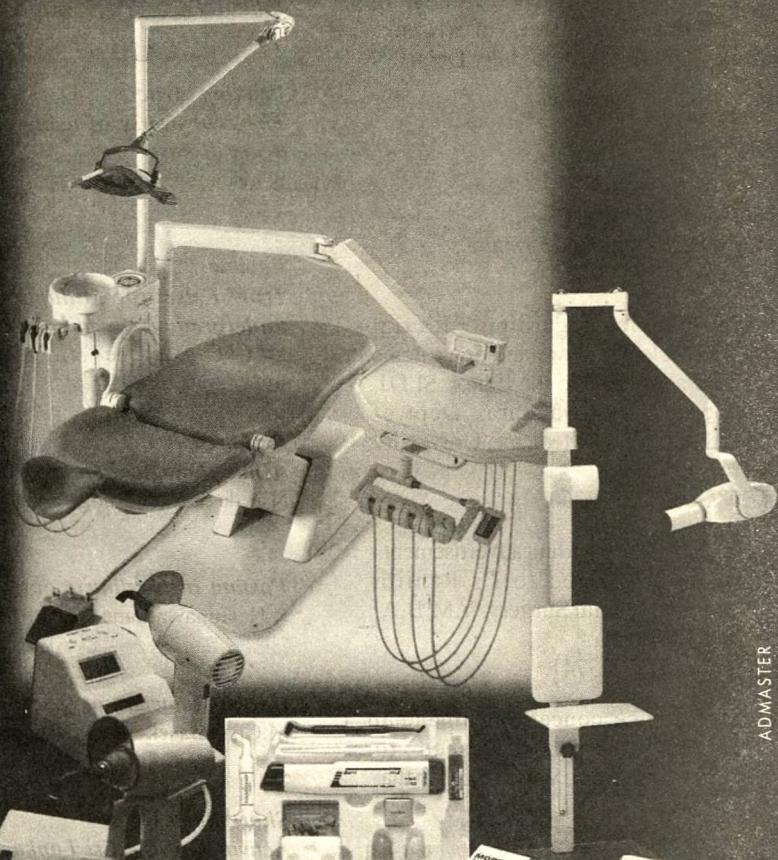
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EDITORIAL

Sri Lanka Dental Journal in the next millennium

One of the prime objectives of the Sri Lanka Dental Association, the only single body that represents the entire dental profession in Sri Lanka, is the promotion of dental and allied sciences. In order to achieve this goal the Sri Lanka Dental Association is already engaged in several professional activities at a national level. Among them is the publication of its journal, the Sri Lanka Dental Journal.

The Sri Lanka Dental Journal, the official publication of the Sri Lanka Dental Association, commenced its publication in 1970. Over the last 28 years the SLDJ has seen several changes to accommodate the needs of its readers and the changing technologies in publishing. This year on the eve of the new millennium the SLDJ comes to you with some new changes.

The SLDJ is read by a diverse group of people including general dental practitioners, specialists, academics, postgraduate and undergraduate students. Over the years the journal has developed into a useful vehicle to keep the dental profession abreast of the new developments in various disciplines of dentistry.

Its success has been demonstrated by the large number of good quality manuscripts received for publication. It is heartening to note that the material contributed for publication in the SLDJ is not only from the members inside the dental profession but from those outside as well. This reveals that more people are continuing to read more of the SLDJ and that it is exposed to a wider scientific audience.

Recent years have witnessed fast-paced and far-reaching advances in the field of dentistry. The SLDJ strives hard to continue in providing relevant up-to-date information in this ever expanding and ever advancing field to the members of the dental profession; thus leading them into the next millennium.

Deepthi Nanayakkara
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The controversy of using adrenaline in patients with heart disease

S. Lekamwasam

Department of Medicine, Faculty of Medicine, Karapitiya.

The benefits of adding a vasoconstrictor like adrenaline to a solution of local anaesthetic drug are well established. It slows the rate of absorption and prolongs the duration of action of the local anaesthetic. Tissues involved in dental treatment are highly vascular and adrenaline induced vasoconstriction helps to arrest excessive bleeding that can occur during the procedure. In addition, adrenaline prevents systemic absorption of a local anaesthetic agent and minimises its systemic side effects (Aitkenhead and Smith 1990).

The use of adrenaline is not always safe. Systemic absorption of adrenaline occurs to a certain extent following local infiltration and that may affect cardiovascular functions adversely. Adrenaline causes sudden elevation of systemic blood pressure and acceleration of heart rate. It can induce cardiac arrhythmia of different types too. It is absolutely contraindicated in ring blocks of penis and digits and in intravenous regional anaesthesia. Its safety in patients with underlying heart diseases is also controversial. The controversy of using adrenaline in patients with cardiac diseases has caused lot of uncertainty among clinicians. This article examines some studies related to this area to illustrate the reasons for this uncertainty.

Studies have shown that patients undergoing dental procedures demonstrate normal physiological stress response. Infiltrations of local anaesthesia and tooth extractions are shown to activate the adrenal cortex to secrete cortisol. Increase in the concentration of circulating catecholamines too has been demonstrated in patients, who have undergone drilling, filling and extractions. Even anticipation of dental check-up has caused increase in blood pressure. However, adequate local anaesthesia during the procedure has blunted the blood pressure response, indicating the necessity of a good pain control especially in patients with pre-existing heart diseases (Brand et al, 1995).

Systemic absorption of infiltrated catecholamines has been demonstrated and this has been shown to have no

significant effects on cardiovascular parameters in healthy adults. The effects of dental injection of local anaesthetic on arterial plasma catecholamine concentration and cardiovascular parameters were studied in patients with normal cardiac functions who were undergoing a maxillary third molar extraction (Tolas et al, 1982). Plasma concentration of adrenaline showed twofold rise from baseline values three minutes after injection of 1.8 ml of 2% lidocaine with 1/100,000 adrenaline (18 micrograms). However the heart rate and pressure-rate product showed no significant changes in these otherwise healthy subjects.

Although no significant cardiovascular effects were demonstrated in healthy subjects following infiltration of adrenaline, idiosyncratic reactions have been reported on few occasions. Two young females have developed severe headaches after injection of Xylestesin-F (3% lidocaine with 1:25,000 norepinephrine). It is suggested that these severe headaches may have been associated with acute transient hypertensive episodes (van der Bijl and Victor 1992). This form of reactions can occur in any person irrespective of their cardiovascular states and it is important to be aware of this possibility, to take immediate steps if an unusual reaction is observed.

Cardiac arrhythmia is another unwanted reaction expected with the use of adrenaline. A 70-year old patient with an aneurysm in the thoracic aorta developed atrial fibrillation after an injection of 2% solution of lidocaine containing 1:200,000 adrenaline. Atrial fibrillation disappeared spontaneously after 20 minutes (Umino et al, 1994). Myocardium and conduction pathways are extremely sensitive to effects of adrenaline, and it should be used with caution in patients with underlying heart disease.

Ischaemic heart disease is a common cardiac condition and safety of dental anaesthesia and dental interventions in patients following myocardial infarctions is a controversial issue. Cintron et al (1986) studied the cardiovascular effects after dental interventions in patients with recent uncomplicated myocardial infarctions. 40 patients

who have suffered uncomplicated acute myocardial infarctions 3 weeks before, were divided into two equal groups to study the safety of dental anaesthesia and dental procedures. 20 patients in group 1 underwent injectable local dental anaesthesia with 2% lidocaine and 1:100,000 adrenaline. 13 patients in group 2 , underwent dental prophylaxis procedures and 7 patients in group 2 underwent dental extractions after adequate dental local anaesthesia. Heart rate, blood pressure and ECG were monitored before, during and after the procedure. No significant haemodynamic changes were detected in any patient and the authors of this paper confirmed the safety of adrenaline containing local anaesthesia in dental procedures in patients after three weeks of an episode of uncomplicated acute myocardial infarction. However, the sample size of this study appears to be too small to make firm conclusions regarding the safety of adrenaline in this common cardiac condition.

Conclusion

Adequate anaesthesia must be given to all patients undergoing dental treatment to alleviate the stress response. This is more important for patients with underlying cardiac disease. However, the safety of adrenaline in such patients still remains controversial. Available information on this subject is limited and most studies have small number of subjects. In addition, the common occurrence of adverse idiosyncratic reactions have prevented clinicians using adrenaline. More studies involving large number of patients are required before arriving at a conclusion. A detailed history should be taken and a physical examination needs to be performed to exclude patients with acute myocardial ischaemia, uncontrolled hypertension, cardiac arrhythmia and heart failure. ECG and chest radiograph should be performed in every patient suspected to have a disease related to the cardiovascular system. Hypertensives should have their blood pressure controlled adequately (below 140/90) before routine dental treatment. Concentrations of adrenaline more than 1:100,000 should not be used and every effort must be made to keep the volume of adrenaline to the minimum. Monitoring of pulse and blood pressure during and after the procedure should be done routinely. Facilities for resuscitation of common cardiac complications should be available in each dental practice. Close liaison with a medical team should be maintained when a patient with underlying heart disease undergoes a routine dental procedure.

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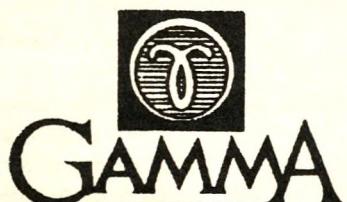
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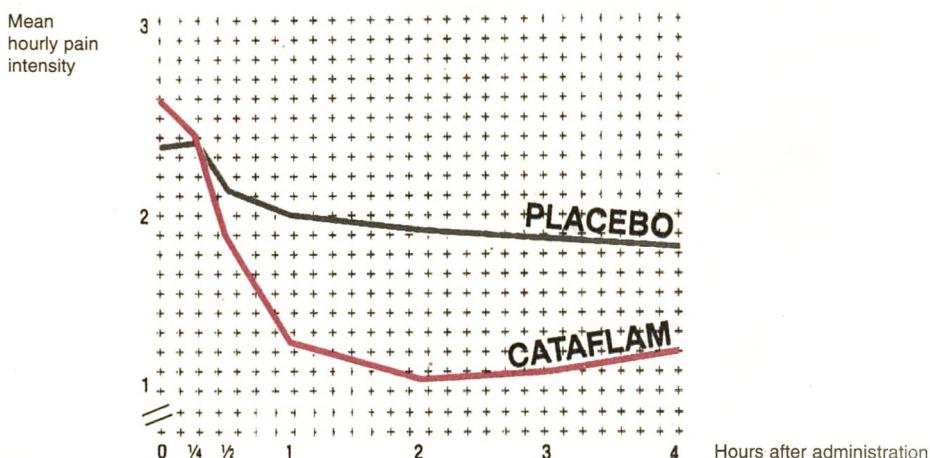
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True/False type Multiple Choice Questions for undergraduate medical examinations

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Summary

Multiple choice questions (MCQ) are widely used as a method of student evaluation in both undergraduate and postgraduate medical examinations, and are internationally accepted as an effective method of testing knowledge. Of the many MCQ formats available, the Multiple True/False type is the most widely used format in medical examinations. The MCQs are considered to be an objective form of assessment, and this has made it a satisfactory method of student assessment for ranking purposes. Presently available evidence suggest that MCQs are not suitable for testing higher order cognitive skills due to their cueing effects and other limitations. There is also much discussion on the negative scoring system of MCQs. Most studies show evidence to support student acceptability of the True/False type MCQs as a suitable method of evaluation. While some studies have shown a negligible effect on the student anxiety levels associated with a negative scoring system, others have shown that it penalizes the students, and increases the student anxiety levels, thereby reducing their performance.

It has also been found that despite greater exposure to MCQs over the years, the unfavourable attitudes of senior medical students towards the negative scoring system remain the same as it did in their first and second years. Since the adaptations of medical students over the years during their undergraduate careers to the True/False type MCQ format appear to be poor, it is suggested that this form of evaluation should be re-evaluated by educationists to produce an improved marking system, while including other methods of evaluation at examinations, where MCQs alone have been used to test and assess student knowledge.

Key words: *Multiple Choice Questions, true/false type, medical examinations.*

Introduction

The Multiple Choice Questions (MCQs) are now an inescapable part of the assessment process of students at

both undergraduate and postgraduate medical examinations. The MCQs are probably the most widely used component of objective tests (Wig 1995). They are used as a method of testing knowledge, despite some of its limitations and disadvantages. Of the many MCQ formats available, Multiple True/False type is the most widely used format in medical examinations, both here and abroad.

MCQ formats

A large number of formats are available for framing MCQs such as the (I) One Best Response, (ii) Matching type, (iii) Multiple True/False Completion type and (iv) Assertion-Reason format. The Multiple True/False format is the common type used in undergraduate and postgraduate medical examinations (Wig 1995).

The One Best Response is the traditionally used MCQ type, which usually has comparative responses, and the examinee is instructed to look for the 'best' or 'most appropriate' response to match the stem. The Matching type consists of two lists of statements, which have to be matched with one another. This format is suited for measuring relationships between large amount of factual information in an economical way. However, it is very difficult to test any high level of ability with this format.

In the Multiple True/False Completion type, the candidate is instructed to separately respond to each of four or five responses or items as 'true' or 'false', so that only construction of correct and incorrect items is permitted. There is no restriction to the number of items, which are either 'true' or 'false'. The Assertion-Reason format is a variation of the basic True/False format. Each item of an 'assertion' (statement A) is linked to a 'reason' (statement B) by the connecting word 'because'. The examinees have to decide whether the assertion and reason are individually correct, and whether the reason is the correct explanation of the assertion. This is the most debatable of MCQs, largely because of the amount of language comprehension involved, which reduces the likelihood of correct responses for certain examinees (Wig 1995).

The advantages of the use of Multiple/True/False type MCQs

The use of True/ False type MCQs at assessments and examinations have been criticized by some educationists, because they test mostly factual recall and fail to test higher cognitive skills (Veloski et al, 1988; Veloski et al, 1993). However, despite such criticisms, many advantages have also been attributed to this form of assessment.

There is no restriction of having only one True/False response. The length and homogeneity of responses are not mandatory. It is also easier for the candidates to answer as no coding is involved. However, this format needs care while formulating, e.g. avoidance of the use of undefined imprecise terms such as rare(ly), common(ly), characteristic(ally) etc., and the disproportionately large number of 'true' items (Holsgrove and Elzubeir, 1998). If not, this may test only fact recall, and the stem may be short and implicit, allowing the examinee to see the correct response/s too easily (Guilbert 1992). The potential for testing knowledge gained by various methods of learning (e.g. lectures, tutorials etc.) in a large number of students in a short period of time is another of its major advantages (Guilbert 1992).

Compared to other forms of evaluation, it has been considered to be an objective form of assessment, and this makes it a satisfactory method of student assessment for ranking purposes in examinations such as MRCGP and MRCP Part I (Holsgrove and Elzubeir 1998). Some studies have observed that properly structured MCQs are capable of testing the many different aspects of subject knowledge (Premadasa 1993), but with limited test reliability, because of its capability of merely measuring concept mastery of a particular examination technique of a student, while tapping a low level of intellectual skills (Richardson 1992). It has been shown that a considerable number of questions are needed to ensure a sufficiently reliable score, if essay questions are used instead of MCQs (Day et al, 1990; Norcini et al, 1990). From the point of examiners, MCQs are easy to administer, and correction is less time consuming, and question banks also can be developed with improved items based on statistical analysis of answers for future use (Guilbert 1992).

Rees in 1986 observed that True/False type MCQs help students learn certain small and specified components of the subject matter, which are frequently tested in MCQs,

but would not lead to a general increase of knowledge in the subject. True/false type MCQs have also been used to evaluate different teaching methods such as small group discussions (Davis et al, 1994), problem-based learning (Reagan and Meninger 1994), and tutorials (Fox 1983). It has been observed that multiple choice tutorials are popular, and achieves considerable student participation. For the tutor, it represents a consistently reproducible tutorial with an appropriate thrust of emphasis (Pamphlett and Farnill 1995). The use of MCQs in teaching has been found to be useful in the reinforcement of some fundamentals in medical education (Fox 1983). Some items of MCQs also could be reused for examinations (Rees 1986; Schwartz et al, 1986; Koeslag et al, 1986), because the test-retest reliability of properly structured True/False type MCQs have been found to be high (Schwartz et al, 1986).

Disadvantages and limitations

Several groups of investigators also have looked into the limitations of True/False type MCQ format, and believe that it is not the best method to test higher order cognitive skills, and to measure different taxonomic levels of cognitive domain (Veloski et al, 1988; Veloski et al, 1993; Pamphlett and Farnill 1995; Anbar 1991). It is also incapable of testing or improving other skills such as self directed learning, writing and clinical skills (Fleming 1988; Pamphlett and Farnil 1995; Goonewardene 1997).

The effect of cueing in True/False type MCQs is found to be a major limiting factor in testing higher cognitive skills (Veloski et al, 1992; Pamphlett and Farnill 1995). The cueing effect is the recognition of the right answer on seeing it in a row of distractors. Two types of cueing effects have been found: positive cueing (examinees get cued towards the correct answer) and negative cueing (examinees get cued towards the incorrect answer). It was also found that positive cueing occurs mainly with difficult items, whereas negative cueing occurs with easy items (Pamphlett and Farnill 1995).

Candidates taking high stake examinations have a right to expect the examiners to be fair and accurate, while examination boards must have a moral and ethical duty to ensure the reliability and validity of MCQ examinations. The use of undefined imprecise terms in true/false type MCQs is unacceptable with this responsibility (Holsgrove and Elzubeir 1998).

The use of open ended questions (OEQs) has been forwarded as a solution to the cueing effect of MCQs. The OEQs can be used to test either simple recall or certain higher level problem solving skills that cannot be tested by MCQs (Veloski et al, 1993). Even more important, the OEQs may be a more effective discriminator of the ability of students (Veloski et al, 1992; Pamphlett and Farnill 1995).

Because of the limitations of testing higher cognitive skills with MCQs, they have been compared with OEQs (Veloski et al, 1988; Anbar 1991; Veloski et al, 1992). A study, which assessed the student knowledge by comparing computerized OEQs and MCQs have found that the two modes of testing measure different aspects of competence, especially for the students, who are in the upper 50% in terms of performance. Some have even suggested the use of OEQs as a more valid and reliable method of evaluation compared to MCQs because of the cueing effect associated with MCQs (Veloski et al, 1988). It is now accepted that though some higher cognitive functions may be tested, within certain limits by means of MCQs, the OEQs seem to be a better alternative (Ferland et al, 1987).

Modified Essay Questions (MEQ) have also been introduced as an alternative form of testing higher cognitive skills of examinees (Norman et al, 1987). Although the MEQ and MCQ may assess different skills, the MEQ appears to have a higher reliability (Norman et al, 1987).

MCQs and the negative scoring system

There is also much discussion on the negative scoring system of MCQs. There are two types of negative scoring systems, one in which negative marks from one question is carried over to the next as practiced at most postgraduate medical examinations (Richardson 1992), and the other without a carry over effect (Ferdinandis et al, 1997).

Those in favour of negative marking state that
(i) it encourages the student to make an 'educated guess' instead of guessing blindly (Pamphlett and Farnill 1995)
(ii) it discriminates between 'no knowledge' and 'incorrect knowledge' (Whitby 1977)
(iii) if the negative marking is not used, complex and educationally questionable post examination adjustments involving statistical and standardization procedures will have to be employed to ensure a reasonable spread of

marks for ranking, and arriving at a plausible mean mark. Achieving a normal distribution of marks can be difficult (Pamphlett and Farnill 1995).

According to others, a negative scoring system is unfair because

- (i) the penalty adds no new information about the candidate's knowledge (Whitby 1977),
- (ii) anxiety caused by this system of marking may unfairly disadvantage more anxious students (Isaacs 1994)
- (iii) marks are subtracted from other areas, especially in the negative marking with the carry over effect, and scores may not even closely reflect knowledge (Isaacs 1994)
- (iv) medical practice has a large component of 'educated guessing', and the clinical tasks are making the best choice with the given information after weighing possibilities, and any approach which imposes a penalty for incorrect responses reflects an unusual view of medical practice as an 'exact science' (Whitby 1977).

Two questions, which often arise when using this system are whether the students should be penalized for incorrectly answered questions and whether it increases the student anxiety and thereby reduce their performance. Some studies have shown only a minor influence of the negative scoring on student anxiety, and it does not appear to alter student ranking to any significant degree (Pamphlett and Farnill 1995). However, two recent studies conducted among the second year and fourth year medical students to assess the student views on True/False type MCQ format at undergraduate medical examinations suggest that the majority of the medical students in their second year and later in their fourth year (85.3% in the second year and 87.1% in the fourth year; P - not significant) felt that the negative scoring system penalizes and reduces their performance at the examinations (Ferdinandis et al, 1997; Goonewardene 1997). However, the majority of them (59.9 % in the second year and 79.5% in the fourth year; P < 0.05) accept it to be the most objective form of assessment, and that the True/False MCQs should be used in all undergraduate medical examinations (Ferdinandis et al, 1997; Goonewardene 1997).

Therefore, it is evident that despite more exposure to the use of true/false type MCQs having a negative scoring system without a carry over effect, the medical students consider that this method penalizes the student.

(75.8 % in the second year and 82.6% in the fourth year; P - not significant), and that this system of marking should not be retained (70.5 % in the second year and 73.9% in the fourth year; P - not significant) (Goonewardene 1997).

The candidates answering True/False type MCQs, which have a negative scoring system often omit many items for fear of losing marks. However, it has been found that if they are advised accordingly on the basis of items that were omitted, they tended to improve their performance, although they made more errors, thereby resulting in a rise in the rankings (Fleming 1988). Therefore, the nature of advice, which should be given to candidates taking such examinations play a vital role in preparing the students for True/False type MCQ examinations (Fleming 1988; Ferdinandis et al, 1997) . The negative scoring system has also resulted in the candidates altering the initial response (Flemming 1988). However, a study has found that of the changes, only about 22% were correct to incorrect, while about 47% were incorrect to correct and about 32% incorrect to incorrect (Shahabudin 1983). Furthermore, this trend appears to be more marked among the upper 50% of students in terms of performance.

How to improve the scope and objectiveness of MCQs

In order to make MCQs, a more objective and fair means of assessment, proper structuring of MCQs to avoid ambiguity, undefined imprecise terms, double negatives, and finding the right balance between ‘true’ and ‘false’ responses is required (Rees 1986; Ferland et al, 1987; Holsgrove and Elzubeir 1998). It is also important to utilize corporate effort in the construction of MCQs rather than being an individual effort (Whitby 1977). Obtaining a feedback on questions from students (Ferdinandis et al,1997), and validation and item analysis of MCQs before and after the examination, would help to prepare better MCQs on future occasions (Guilbert 1992).

The MCQs could be structured to test at least some higher domains by having a case history or data for interpretation in the stem (Case and Swanson 1993). If proper instructions are given well in advance of the examination about the marking system, it would further assist the candidate in facing the examination with more confidence (Whitby 1977).

Conclusion

Most studies show evidence to support student acceptability of the True/False type MCQs as a suitable method of evaluation. It is important to ascertain the views and attitudes of students, besides those of educationists and statisticians regarding student assessments, to ensure that necessary steps are taken to improve the existing True/False type MCQ evaluation system.

There are several limitations of True/False type MCQ format, and it has been observed that it is not the best method to test higher order cognitive skills and to measure different taxonomic levels of cognitive domain. The effect of cueing in True/False type MCQs is found to be a major limiting factor in testing higher cognitive skills. It has also been found that despite greater exposure to MCQs over the years, the attitudes of senior medical students do not shift in a favorable manner towards the negative scoring system from those, two years ago. The majority in both groups of students felt that the negative scoring system increased their anxiety, reduced their performance, and penalized them. However, the majority (over 55%) in the group questioned on both occasions preferred the use of True/False type MCQs as a form of evaluation in undergraduate medical examinations.

Since the adaptations of medical students over the years during their undergraduate careers to the True/False type MCQ format appear to be poor, it is suggested that this form of evaluation needs to be re-evaluated by educationists, while including other methods of evaluation at examinations where MCQs alone have been used to test and assess student knowledge (Whitby 1977; Pamphlett and Farnill 1997) .

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A morphological study of bilateral cleft lip

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Summary

Variations in the morphology of bilateral cleft lip could influence the treatment needs and the outcome of treatment. Commonly the premaxilla could protrude out or could be in alignment with the maxillary segments. To determine the incidence of these variations, 62 new born babies with complete bilateral cleft lip and palate were examined clinically within one week after birth. It was found that 39 (62.9%) of the babies had a protruded premaxilla and 23 (37.1%) had an aligned premaxilla. Treatment centres will have to be equipped to deal with these variations and plan for early treatment and presurgical orthopaedics.

Key words: Cleft lip and palate, morphology, variations, treatment needs.

Introduction

Subtle variations in the morphology of bilateral cleft lip and palate have been reported (Brauer 1971). These could have a considerable influence on the treatment requirements and possibly the outcome of treatment itself. The most important variation is observed in relation to the position of the pre-maxilla and pro-labial complex. This could either be in alignment with the lateral segments of the maxilla or be protruding in a proclined position. These two variations are seen soon after birth. There could be protraction of the pre-maxilla due to lack of action of the orbicularis oris muscle on the pre-maxilla according to some workers and this condition must be differentiated from the above mentioned type. The former is seen soon after birth while the latter is a late manifestation said to be due to lack of muscle action caused by delayed or inadequate treatment.

An important observation that has been reported is that in the cases where the pre-maxillae are proclined the columella is shorter and the prolabium is larger than that in the cases where the pre-maxillae are well aligned (Vaugh 1946; Mathews 1952; Rees et al, 1962).

Where there is pre-maxillary protraction treatment will have to be aimed at aligning the premaxilla. Short columella may

have to be lengthened in order to elevate the tip of the nose. In the type where the premaxilla is aligned the small prolabium may need special attention.

As these morphological variations of bilateral cleft-lip have very important clinical significance their occurrence need to be studied.

Material and method

Newborn babies with bilateral cleft lip and palate referred to the Department of Oral Surgery, Faculty of Dental Sciences during the period from January 1992 till December 1997 formed the material for this study. Patients seen within one week after birth who had a bilateral cleft lip and complete cleft palate which fell into the category of Veau IV (Veau 1931) were selected for the study. Patients who had elastic strapping over the cleft were not selected. There were a total of sixty two patients who satisfied these criteria.

The morphological variations were categorised as Type I and Type II where Type I demonstrated a well aligned pre-maxilla and Type II a protruded pre-maxilla on clinical examination. Presence or absence of a positive family history of clefting of the patient was also determined. The relatives taken into consideration in the family history were grandparents, parents, uncles and aunts, cousins and siblings.

Results

Table 1 reveals the frequency of Type I and Type II morphological variations of bilateral cleft-lip and palate. It is seen that the majority (62.9%) of patients had Type II variation. Gender distribution was similar in the two types, males being the predominant in both types (Table 2). Chi-square tests performed showed that there was no significant difference between the proportion of males in the two types ($P > 0.05$). The frequency of family history of clefting too was similar in the two types there being no significant difference between the proportions of family

history positive cases in Type I and Type II patients ($P>0.05$).

Table 1: Frequency distribution of morphological variations of bilateral cleft-lip

Type I	Type II	Total
23 (37.1%)	39 (62.9%)	62 (100%)

Table 2 : Distribution of Type I and Type II variation according to sex

	Male	Female	Total
Type I	14 (60.8%)	9 (39.2%)	23 (100%)
Type II	24 (61.5%)	15 (38.5%)	39 (100%)

Table 3: Distribution of Type I and Type II variation according to family history of clefting.

	FH positive	FH negative	Total
Type I	4 (17.3%)	19 (82.7%)	23 (100%)
Type II	7 (17.9%)	32 (82.1%)	39 (100%)

Discussion

Treatment of Type II variation of bilateral cleft lip is more demanding. The proclined pre-maxilla has to be brought into alignment if treatment is to succeed. As the majority of patients (62.9%) with bilateral cleft-lip belongs to this category treatment centres have to be equipped and organised to manage these patients. Presurgical orthopaedics has been recommended as an effective means of aligning the pre-maxilla (Brauer 1965). To achieve this, elastic strapping and other types of strapping have been practiced (Brauer 1965; Rosenstein 1990).

Appliance therapy has also been practiced for quite

sometime. These could be either active or passive and varying degrees of success have been claimed by the proponents of these appliances (Burston 1965; Hotz 1964; Jacobson and Rosenstein 1965). There are others who claim that early surgery with accurate muscle repair would result in alignment of bony segment (Kernahan 1990; Randall et al, 1974). Arguments for early repair is based on the functional matrix theory and from these ideas has arisen the concept of functional repair of both cleft lip as well as cleft palate. According to this theory the growth of the face depends on the activity of both primary growth centres and secondary growth centres. The former has the potential for growth on its own steam whereas the latter needs stimulation by muscle action. In cleft lip and palate the muscle action is inadequate and therefore normal growth does not occur. When muscles are repaired and function restored normal growth could take place (Kernahan 1990; Fara 1981).

It is the author's observation that unless repair of a bilateral cleft lip with protruded maxilla is undertaken very early it would be very difficult to bring the soft tissue segment together because the pre-maxilla would be too far forward. Early repair is not possible especially in a third world country due to various reasons. Under these circumstances the options would be to use presurgical orthopaedics, even with elastic strapping if appliance therapy is not possible.

The occurrence of morphological variations in bilateral cleft-lip does not seem to be influenced by a tendency in the family for clefting. No significant difference was observed in proportions of family history positive cases in the two types. It would be interesting to find out whether any other known causative factors have an influence on the causation of variations. Some workers have propounded that the protruded maxilla is caused by a migration of mesenchyme from the columella into the prolabium resulting in a short columella and a large prolabium. The short columella pulls the pre-maxilla up causing it to procline. However, there is insufficient evidence to support this theory.

The Type I variation though a less complex problem also needs early surgery. It has been observed that the small prolabium grows to normal size when the lip is repaired early probably due to functional stimulation (Brauer 1965). If early repair is not possible the prolabium may remain small and subsequent repair may produce a notch which will have to be corrected either by bringing tissue from the lateral segments or from the lower lip employing an Abbe flap (Harding 1971).

The Type II variation when not adequately treated at the correct time may produce a very complex orthodontic problem. Pre-maxilla will protrude and the lateral segments may almost meet each other behind the premaxilla which is now excluded from the arch. Correction by orthodontic means will almost be impossible. It may be possible to expand the lateral segments with an appliance but bringing the premaxilla back into alignment may need surgery which would involve a vomerectomy. Vomerectomy may cause growth retardation of the pre-maxillary segment. However, Monroe (1970) claims this could be done avoiding a maxillary growth deficit.

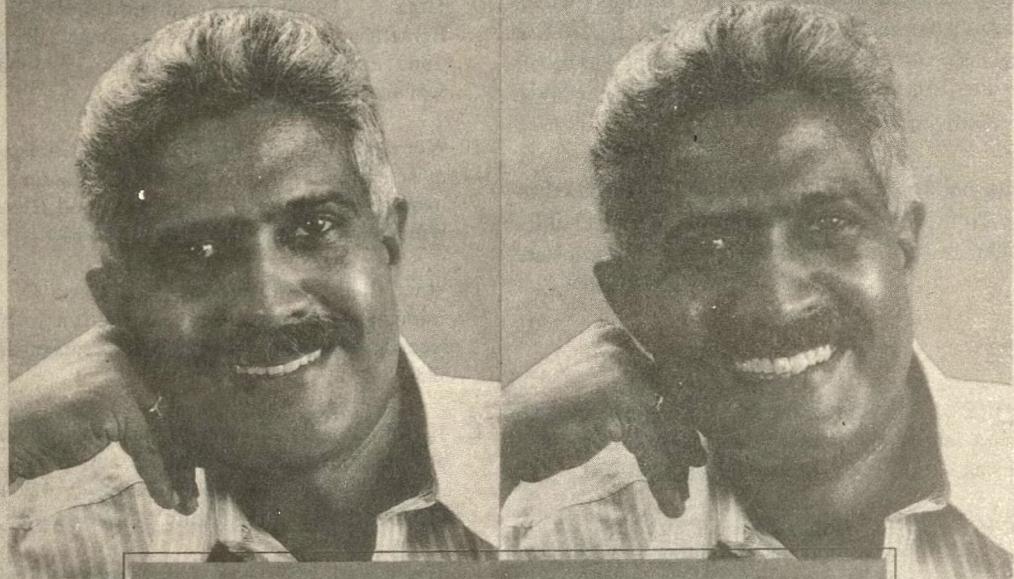
Cleft lip and palate treatment centres must be geared to manage these morphological variations of bilateral cleft lip which would mean correct diagnosis and early appropriate treatment.

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Fasting in paediatric outpatient dental surgery

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Summary

An audit of preoperative fasting in children presenting for outpatient dental extractions was undertaken. It shows that the period of fasting was in all cases much longer than that required for gastric emptying. The mean starvation times were 11 h for water, 12 h for milk and 16 h for solids. Possible ways to improve preoperative starvation regimens are discussed.

Key words: Fasting, preoperative, paediatric, outpatient

Introduction

Pulmonary aspiration of gastric contents is a potentially life threatening complication; as a result, overnight fasting has become a standard practice for morning operating list. There is evidence now that patients who are allowed clear liquids up until 2 to 3 hours before induction as opposed to standard fasting, in fact, have less residual intragastric volume and acidity due to increased gastric peristalsis (Agrawal 1989, Ong 1978). These studies demonstrate that the gastric emptying time for clear liquids (water, tea, coffee or fruit juice) is very different than that for solid foods. Solid food takes as long as 6 to 8 hours to leave the stomach, whereas clear liquids leave the stomach within 2 hours. Solid foods must be broken down to semisolid chyme to pass through the pylorus, while liquids can pass almost immediately. These findings have led to the adoption of new guidelines for preoperative fasting (Goresky & Malby 1990, Strunin 1993) (Table 1).

Table 1. Fasting guidelines for children

Age	Fasting Time (hours)	
	Solids, Milk (formula, breast)	Clear liquids
< 06 months	4	2
6-36 months	6	3
> 36 months	8	3

Prolonged preoperative starvation of children is of no benefit. The children are at risk from hypoglycaemia. However, children still present for anaesthesia and surgery after being subjected to prolonged fast (Miller 1990, O'Flynn and Milford 1989).

The aim of this audit was to determine the length of time for which the children were actually fasted when presenting for day case dental extractions under general anaesthesia.

Materials and Methods

A total of 100 consecutive outpatients aged between 3 and 8 years admitted for dental extractions under general anaesthesia in a morning list at Teaching Hospital, Peradeniya (1994-95) were studied. The anesthetist took exact details of the time and nature of the last liquid and solid food ingested prior to surgery. The time of induction of anaesthesia was also documented. The duration of fasting was calculated for each child. Patients were healthy and were suitable for day case surgery.

The data were analysed using Wilcoxon rank test, comparing the patient data with the standard 8 h fasting for solids and milk and 3 h for water.

Results

Eight parents did not know the exact time of fasting. They were excluded from the study. The mean durations of starvation for solids, milk and water are given in Table 2.

Table 2. Starvation times (h)

	n	Mean	(SD)	(Range)
Solids	92	16	3.5	10.5-15.5
Milk	48	12	1.8	8 - 13.5
Water	92	11	3.2	5 - 14

For solids, all patients were starved for more than 10 h. The duration of starvation for solids was found to be significantly greater than the "standard" 8 h. ($P < 0.001$).

In the case of liquids, only 48 patients have consumed milk. For milk, 39 (8%) were starved for more than 10 h. The duration of starvation for milk was found to be significantly greater than the "standard" 8 h ($P < 0.001$).

For water, 60% were starved for more than 10 h. The duration of water withdrawal was found to be significantly greater than the "standard" 3 h ($P < 0.001$). The shortest starvation time was for water, 5 h in 3 patients.

Discussion

Our results show that all the children were subjected to unnecessarily prolonged fasts. The standard advice of "nil by mouth in the night" can result in patients being deprived of oral fluids for periods in excess of 12 h: a regimen which can lead to hypoglycaemia. Aun and Pansear (1990) found that children aged 1 to 5 years were able to maintain glucose homeostasis for up to 8 h. Hypoglycaemia can occur in children due to fasting, especially in those who have been fasted for a period in excess of 10 h. There is a risk of neurological damage that may be undetected during anaesthesia. Furthermore, it has been shown that patients who are allowed clear liquids up until 2 to 3 hours before induction are more cheerful, less hungry and thirsty,

have lower incidence of postoperative headaches and need less intravenous fluids during and after the operation.

Children go to bed early by about 8 pm. Their last meal is usually around 7 pm and the operating theatre session starts at 8.30 am, therefore, the first child has fasted for 13.5 h. Children late on the list will have fasted for longer periods. In fact, the period of starvation is not simply the time from last food or drink to induction, but to the time the child next takes food or drink.

Nasogastric tube aspiration, ultrasound imaging and transabdominal impedance have shown no significant difference in gastric volumes between patients fasted for 6 h and those allowed to drink clear fluid up to 3 h pre-operatively (Splinter et al, 1991; Hutchinson et al, 1988; Scarr et al 1989; Philips et al, 1993). It would seem, therefore, that, far from protecting the patient, withholding fluid may be harmful.

Furthermore, Hardy et al (1990) demonstrated that risk of regurgitation was negligible in patients undergoing elective surgery, despite gastric volumes of greater than $0.4 \text{ ml} \cdot \text{kg}^{-1}$. Actually, pulmonary aspiration in healthy children undergoing elective surgery is rare and when it does occur the sequelae are usually mild. However, excessive amounts of sweet fluid may increase the risk of pulmonary aspiration of gastric residue during anaesthesia. The duration of fast must be a balance between the risk of pulmonary aspiration and the potential risk of prolonged starvation.

A recent US survey shows that almost 70% of paediatric anaesthesiologists have liberalised the fasting requirements for clear fluids (Green et al, 1993). Unless there are factors such as gastroesophageal lesions and opioid therapy which are known to delay gastric emptying, 3 h fast for clear fluid and a 8 h food starvation before surgery should be instituted as a standard policy. A late night before surgery, a later meal and liberal fluids may not be practicable in children. Even a drink 4 h preoperatively involves waking a child at 4.30 am to feed. This too is disruptive. Furthermore, in minor surgery, it is difficult to tailor the starvation regimen to the individual patient, according to the estimated time of surgery. One possible solution would be to start day case paediatric list later, at 11 am (mid-day) so that a child could be given a drink (clear fluid) at 7 am. We must also ensure that clear instructions are given to parents in a way that is easily understood. The fear of anaesthetists that, if the fasting rules were relaxed, outpatients could not be trusted to drink only clear fluids will however remain unresolved.

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Crown diameters of permanent teeth in Sri Lankans

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Summary

A study was conducted with the aim of establishing 1) the normal values for the mesiodistal and buccolingual crown diameters of the permanent teeth of the contemporary Sri Lankan Sinhalese and 2) to compare these values with those established for the iron age population of Bellan Bendi Palessa of Sri Lanka.

Mesiodistal and buccolingual crown diameter measurements of the permanent teeth were obtained from dental casts of 162 Sinhalese adults (75 males and 87 females) in the age range of 20-45 years. The differences in the crown diameters of the corresponding teeth of the right and left sides of the dental arch were not significant. Mean values of mesiodistal and buccolingual crown diameter measurements for all teeth were larger in males than in females. The greatest variability was shown by the maxillary lateral incisor in females and the lowest by the mandibular first molar in females. When compared with the mesiodistal and buccolingual crown diameters of an Iron age population (Bellan Bendi Palessa) of Sri Lanka, the Sinhalese of the present study showed significantly smaller posterior teeth.

Key words: crown size, permanent teeth, Sri Lankans

Introduction

Metrical dimensions of teeth (odontometric data) have been reported to vary in different population groups (Barrett et al, 1963). These dimensions provide valuable information on human evolution and are useful in forensic and clinical dentistry. Crown size diameters have been proved to be a reliable method in determining the sex in forensic odontology (De Vito and Saunders 1990). For many years the anthropologists have used crown diameters to trace the reduction of tooth size due to dietary changes during

human evolution (Le Blanc and Black 1974; Bermudez de Castro and Nicolas 1995).

Odontometric data on teeth of Sri Lankans are scanty. The studies available are restricted to dental remains from an iron age population from Pomparippu (Lukacs 1976) and Bellan Bendi Palessa (Chandrasekera and Wikramanayake 1994).

The present study was carried out to determine normal values for the mesiodistal (MD) and bucco-lingual (BL) dimensions of the permanent dentition of the contemporary Sri Lankan Sinhalese and to compare these values with those of the iron age population from Bellan Bendi Palessa.

Materials and methods

The study group consisted of a total of 162 adults (75 males and 87 females) in the age range of 20-45 years, belonging to the Sinhalese ethnic group selected randomly from a University community. Alginate impressions of the upper and lower dental arches were taken using appropriate perforated impression trays. Dental casts in hard plaster of Paris were prepared immediately to prevent any distortion of the dental model. The mesiodistal (MD) and bucco-lingual (BL) crown diameters were measured with the aid of a sliding vernier caliper. The MD diameter was obtained by measuring the greatest distance between the approximate surfaces of the crown with the sliding vernier caliper held parallel to the occlusal and vestibular surfaces of the crown as described in previous studies (Moorrees et al 1957; Hunter and Priest 1960). In the case of the teeth that were rotated or malpositioned in relation to the curvature of the dental arch, the measurement was taken between the points on the approximate surfaces of the crown, where the observer judged that contact with

adjacent teeth would have normally occurred. The BL diameter was taken as the greatest diameter between buccal or labial surface and the lingual surface of the crown of the tooth in the plane perpendicular to the mesiodistal crown diameter of the tooth (Margette and Brown 1978).

Measurements were made by the two authors using a sliding vernier caliper and recorded to the nearest 0.1mm. In order to evaluate the inter-observer variation paired t-tests were carried out between the means of two sets of measurements. The difference between the measurements of the two examiners was not significant.

Analysis of data

Means, standard deviations and coefficients of variation ($CV = 100SD/\bar{X}$) for MD and BL diameters were computed for each tooth in the upper and lower dental arches. Student's t-tests were carried out to find out whether the differences between the measurements of teeth, of the right and left sides of the jaws, of males and females, and of contemporary Sinhalese and the island's prehistoric people were statistically significant.

The robustness value referred to as the crown size index of a tooth, which is the indicator of the relative crown area, was also computed for the posterior teeth of both males and females as described by Lucaks in 1975.

Results

The mean values of MD and BL crown diameter measurements for corresponding teeth of the right and left sides of the dental arches of both genders were statistically not significant. Therefore the measurements for right and left sides were combined. Means, standard deviations and coefficients of variations for MD diameters of permanent teeth for males and females are presented in Table 1. The corresponding values for the BL diameter are presented in Table 2.

Table 1. Mesiodistal crown diameter (in mm) of the permanent teeth of Sri Lankan Sinhalese males and females.

Tooth	N	Males			N	Females		
		Mean	+SD	CV		Mean	+SD	CV
Maxilla								
Central incisor	75	8.9±0.6	6.7		86	8.6±0.5	5.8	
Lateral incisor	73	7.2±0.6	8.3		86	6.9±0.7	10.1	
Canine	63	7.8±0.5	6.4		75	7.6±0.4	5.3	
First premolar	61	6.8±0.5	7.3		72	6.6±0.5	7.6	
Second premolar	69	6.5±0.5	7.7		80	6.4±0.5	7.8	
First molar	71	10.6±0.8	7.6		83	10.4±0.6	5.8	
Second molar	43	9.4±0.7	7.5		59	9.3±0.7	7.5	
Mandible								
Central incisor	74	5.6±0.4	7.1		84	5.4±0.4	7.4	
Lateral incisor	72	6.2±0.5	8.1		84	6.0±0.4	6.7	
Canine	69	7.0±0.5	7.1		83	6.7±0.4	6.0	
First premolar	66	7.1±0.5	8.5		76	6.8±0.5	7.4	
Second premolar	68	7.2±0.6	8.3		72	7.1±0.5	7.0	
First molar	64	10.9±0.7	6.4		71	10.8±0.5	4.6	
Second molar	54	10.3±0.7	6.8		63	10.1±0.7	9.9	

Table 2. Buccolingual crown diameters (in mm) of the posterior permanent teeth of Sri Lankan Sinhalese males and females

Tooth	N	Males			N	Females		
		Mean+SD	CV			Mean+SD	CV	
Maxilla								
First premolar	62	9.2±0.6	6.5		72	9.0±0.5	5.7	
Second premolar	69	9.2±0.6	7.6		80	9.0±0.5	5.6	
First molar	71	10.7±0.7	6.5		84	10.5±0.6	5.7	
Second molar	44	10.4±0.7	6.7		57	10.2±0.7	6.9	
Mandible								
First premolar	67	7.6±0.6	7.9		76	7.5±0.5	6.7	
Second premolar	67	8.2±0.6	7.3		77	8.1±0.5	6.2	
First molar	65	10.3±0.6	5.8		76	10.2±0.5	4.9	
Second molar	54	9.7±0.7	7.2		64	9.7±0.6	6.2	

Mean values of MD and BL crown diameters for all teeth are greater in males than in females. The differences between the mesiodistal diameters of males and females are statistically significant in most teeth ($P < 0.05$ to $P < 0.001$) except for the maxillary premolar and second molar, and the mandibular second premolar, first and second molars.

With regard to the buccolingual diameter, statistically significant differences are observed for the maxillary teeth ($P<0.01$). The differences between the buccolingual diameters of the mandibular teeth of males and females are not significant.

The coefficients of variation of tooth size measurements show that variability differ between individual teeth. When considering the mesiodistal diameter the maxillary lateral incisor of females shows the greatest variability (10.1%) and the mandibular first permanent molar of the females shows the least variability (4.7%).

MD and BL crown dimensions obtained in the present study and those reported for an iron age population from Bellan Bendi Palessa of Sri Lanka (Chandrasekera and Wikramanayake 1994) are presented in Table 3. Both MD and BL dimensions of all posterior teeth of the Bellan Bendi Palessa population are greater than those of contemporary Sri Lankans. The crown size index values of the contemporary Sinhales and those of Bellan Bendi Palessa population are shown in table 4. The crown size index values for all posterior teeth were higher in the Bellan Bendi Palessa population.

Table 3. Crown diameters of permanent teeth of Sri Lankan Sinhalese and Bellan Bendi Palassa population

Tooth	Mesiodistal diameter(mm)		Buccolingual diameter	
	BBP		Sinhalese	
	Mean+SD(n)	Mean+SD(n)	BBP	Sinhalese
Maxilla				
Central incisor	8.6±0.3(7)	8.8±0.6(161)	-	-
Lateral incisor	6.6±0.3(4)	7.1±0.7(159)	-	-
Canine	7.2±0.6(9)	7.7±0.5(142)	-	-
First premolar	7.4±0.4(7)	6.7±0.5(133)	9.7±0.6(7)	9.1±0.6(133)
Second premolar	7.1±0.4(7)	6.4±0.5(149)	9.8±0.4(7)	9.1±0.6(149)
First molar	10.4±0.7(8)	10.5±0.7(153)	11.0±1.1(8)	10.7±0.7(155)
Second molar	9.7±0.5(8)	9.3±0.7(100)	11.3±0.6(8)	10.3±0.7(101)
Mandible				
Central incisor	5.3±0.6(10)	5.5±0.4(157)	-	-
Lateral incisor	5.9±0.2(10)	6.1±0.5(156)	-	-
Canine	6.8±0.3(10)	6.9±0.5(152)	-	-
First premolar	7.1±0.3(9)	6.9±0.5(142)	8.6±0.4(9)	7.6±0.6(143)
Second premolar	7.4±0.6(9)	7.1±0.6(145)	8.6±0.3(9)	8.1±0.6(144)
First molar	11.3±0.7(13)	10.8±0.6(141)	10.9±0.9(13)	10.2±0.6(141)
Second molar	11.2±0.6(11)	10.2±0.7(126)	10.7±0.7(11)	9.7±0.6(119)

(BBP = Bellan Bandi Pallassa)

Table 4. Crown size index (robustness value) of maxillary and mandibular permanent posterior teeth of Sri Lankan Sinhalese and Bellan Bendi Palessa population

	BBP	Sinhalese
Maxilla		
First premolar	71.8	61.0
Second premolar	69.6	58.2
First molar	114.4	111.3
Second molar	109.6	95.8
Mandible		
First premolar	61.1	52.4
Second premolar	63.6	57.5
First molar	123.2	79.6
Second molar	119.8	98.9

Discussion

The present study of crown size (MD and BL diameters) of the permanent teeth of Sri Lankan Sinhalese is based on measurements of dental casts obtained from 162 males and females.

Although slight size differences between the corresponding teeth on right and left sides of the jaws in both genders were observed, none of the differences were statistically significant. The findings are consistent with those reported in other populations (Barrett et al 1963; Hattab et al 1996). Therefore the measurements for right and left sides were combined.

Previous studies have documented a sexual dimorphism in the crown size, the males having larger dimensions than females (Barrett et al 1963; Moorrees 1957; Haeussler et al 1989 and Hattab et al 1996). The present results show that mean values of MD and BL diameters are greater in males than in females and that the sex differences are statistically significant for all teeth except the maxillary second molar and mandibular second premolar and first molar. The most pronounced difference was shown by the mandibular canine. This finding is consistent with that of other investigators (Barrett et al 1963 and Hattab et al 1996).

The crown dimensions of the contemporary Sri Lankans were compared with those established for an iron age population from Bellan Bendi Palessa in Sri Lanka (Chandrasekera and Wikramanayake 1994). The crown dimensions of this population have been obtained from the excavated teeth of Bellan Bendi Palessa population that are presently located in the Natural History Section of the National Museum, Colombo, Sri Lanka.

The crown dimensions (both MD and BL) and crown size index values (robustness values) were smaller in the contemporary Sri Lankan Sinhalese. However, the MD crown diameters of the anterior teeth of the Sinhalese were greater than those of the Bellan Bendi Palessa population.

Previous studies have reported a reduction in tooth size due to environmental and dietary changes (Le Blanc and Black 1974; Bermudez de Castro and Nicolas 1995). A larger occlusal grinding area must have been essential for the efficient mastication of the coarse, fibrous food eaten by these people who lived 6000 years ago. A reduction in the occlusal area may have taken place over the years, as the food consumed at present is much softer and refined. The larger mesiodistal crown dimensions of the anterior teeth of the present population may be an adaptation to maintain the occlusal arch.

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Report of Activities of the Sri Lanka Dental Association**Dr. Sarath Senaratne – Hon. Gen. Secretary****Induction of the President**

Dr. Adly Mohamed was inducted as the 66th Year President of the SLDA (for 1998/99) by the outgoing President Prof. M.T.M. Jiffry on 16th August '98 at the SLFI Auditorium. Ms. Susan Maingay, Director, British Council, Sri Lanka was the chief guest at the ceremony which was attended by a large and distinguished gathering. Dr. Adly Mohamed delivered his Presidential Address. This was followed by fellowship hosted by Dr. Adly Mohamed.

Accreditation of Dental Products and Materials

After having met representatives from Hemas Marketing (Pte) Limited at several discussions during a considerable period of time, the SLDA committee for Dental Products Endorsement, were able to sign an agreement with Hemas Marketing (Pte) Limited for endorsement of their product – Clogard toothpaste and this agreement was signed between the representatives from Hemas Marketing and the SLDA at the Grand Orient Hotel Colombo on 25th November 1998. By this agreement we received a payment of Rs. 412,000/- as the Endorsement fee for the first two years (Rs. 300,000/- for the first year, and Rs. 4,000/- per market share point of 28% - Rs. 112,000/-)

After several discussions with the representatives of the Uni Lever (Cey) Marketing Ltd a renewal agreement was signed for the Endorsement of their products – Signal toothpaste and Signal Toothbrush for a further period of two years and for this the SLDA received a payment of Rs. 721,600/- made up as follows: for Signal toothpaste – Rs. 421,600/-, Signal Toothbrush – Rs. 200,000/- and a refundable deposit of Rs. 100,000/- in the event of termination of this agreement.

Out Reach Programmes

The first Out Reach programme was conducted on 07th August 1998 at Kelinkanda Janapadaya bordering Sinharaja Rain Forest in the Kalutara District. This was

organized with the assistance of Dr. Senaka Abeyratne, Dr. Gunamuni – M.O.H. Badureliya, Dr. Fernando – D.M.O Badureliya of Kalutara District. Sponsorship was made available for the entire programme by Members of Lions Club – Colombo Metropolitan. and Lions President, Secretary (son of Dr(Mrs) Padmini Jayasinghe) and some other members of the Lions Club participated on behalf of Lions Club. From the SLDA Drs. Ranjith Weerasinghe, J.N. Chinnaih, K. Shanmuganathan, Gamini de Silva, Mrs Padmini Jayasinghe, Jayasundara Bandara, K. Paranthamalingam, Mrs. Sita Rajakaruna and Ms. Anusha Kularatne participated, and in addition the dental surgery assistants at Dr. Weerasinghe's and Mrs. Jayasinghe's Surgeries participated. Nearly 300 villagers received Dental treatment and all these patients received dry rations distributed by the sponsors – Lions Club Colombo Metropolitan.

The Second Camp was held at the Sukhita Home for disabled and mentally retarded children at Galpatha in the Kalutara District on 05th October '98. Dental Surgeons who participated were Drs. Ranjith Weerasinghe, Adly Mohamed, Gamini de Silva, K. Krishnarasa, N.B. Samarasekera, Mrs. Sita Rajakaruna, Mrs. Anusha Kularatne and Gamini Rajakaruna. Dental Surgery Assistants who participated at the first Out Reach Programme at Kelinkanda Janapadaya, also participated at this Camp. Nearly 100 disabled and mentally retarded children as well as other inmates of the Home received treatment at this Camp.

The third camp was held at Kadinhingalla bordering Sinharaja Rain Forest close to Neluwa in the Galle District on 03rd November '98. This Programme was organized by the SLDA Southern Branch with Dr. G.G.S. Thilakasiri – Hon. Secretary Southern Branch taking the leadership and was sponsored by Lions Club Galle. Participants Drs. Ranjith Weerasinghe, Adly Mohamed, Gamini de Silva, K. Krishnarasa, Sarath Senaratne, G.G.S. Thilakasiri and Athula Hikkaduwa, Mrs. Gunawardena, Mrs. Hikkaduwa and some other Members of the SLDA

Southern Branch participated. Nearly 300 villagers received dental treatment at the Neluwa camp.

Continuing Education Programme

The following guest lectures and workshops were held during the period under review.

1. 23rd July '98 –A workshop on Infection Control at Hotel Holiday Inn Hotel, Colombo
Chief Organizer Prof. M.T.M. Jiffry
2. 9th February '99 – A guest lecture on Poisons, Forensic Sciences in Dentistry by Prof. Ravindra Fernando
3. 24th February '99 – A workshop on Crown and Bridge Restorative Dentistry and tour of Modern Dental Services.

It was a very successful programme conducted by the SLDA this year. More than 90 members attended. Two luxury buses sponsored by Unilivers were organized for the trip. The main speaker was Dr.Kenji Soneda with other eminent Japanese lecturers. Dr. R.L. Wijeyaweera, President Kandy Branch organized the activities in Peradeniya. Our members got the opportunity to visit the new Dental Teaching Hospital. They visited each and every Department of the Hospital.

4. One day course in Endodontics on 09th June '99. 17 Members participated from the SLDA. The course fee was Rs. 4000/- after reducing Rs. 1000 from the Initial fee. Lectures were given by Dr. K.A. Wettasinghe, Head of the Dept. Restorative Dentistry, Dr. K.M. Wijeratne, Dr. R.L. Wijeyaweera, Head of the Dept. of Paedodontics, followed by a practice session on extracted teeth incisor, bicuspid and a molar. The participants had a good experience in practical endodontics. The Dean of the Faculty Prof. Ranjith Mendis welcomed the participants.

Dr. R.L. Gurusinghe was very helpful to organize the above workshops for his enthusiasm to organize the above two workshops.

O.P.A.

Dr. Adly Mohamed represented as the member for the profession. Dr. Gamini de Silva, Dr. K. Krishnarasa, Dr. Sarath Senaratne represented as executive and forum members from the SLDA.

Dr. Reggie Goonetilleke the former President SLDA and APDF, Chairman APDC Organizing Committee has been elected as the President of Organization of Professional Association for 99/2000 . We wish him all the Best.

Fluoride Research Project

1. Progress Report by Dr. B.M.G.H. Marasinghe the co-ordinator of the project at Polipitigama showed that after his transfer from this post activities of the Fluoride Research Project had reduced.
2. Treatment Programmes for adolescents and children in schools in the project area are being done.
3. Fluoride Research Project funds has been deposited in appropriate bank accounts.
4. Fluoride Research Funds to be used as follows in the future.
 - a. Training programmes in the prevention and treatment of fluorosis.
 - b. To start Fluoride projects in areas where fluorosis is endemic.
 - c. Funds to be made available to SLDA members to conduct fluoride research projects.
5. Committee has decided to train dental surgeons in fluorosis endemic areas. They will be trained in
 - a. Bleaching techniques.
 - b. De-fluoridation methods.
6. Health education materials to be produced on dental fluorosis.
7. Terminal evaluation of the project to be done very soon with Dr. June Nunn from the U.K.

Committee on Prevention of Malpractice

The Chairman of the Committee of Malpractices in the dental profession sent out a circular to all dental surgeons requesting information about unqualified dental practitioners. On receipt of a long list of unqualified dental practitioners, the chairman wrote to the Sri Lanka Medical Council inquiring whether the persons given in the list had any legal right to practice the profession of dentistry in Sri Lanka. The S.L.M.C. informed that none in the list were registered dental practitioners. Accordingly the Inspector

General of Police, Director, C.I.D. and Minister of Health & Indigenous Medicine were informed of these illegal dental practitioners.

Action has been instituted by the C.I.D. into the complaint made by the SLDA. It is undoubted that the Medical Act will have to be amended and thereafter implemented properly if quack dental practitioners are to be eliminated from Sri Lanka.

The Chairman of this Committee made some efforts to fulfil this need to bring in proposed amendments to the Medical Act in order to prevent quack dental practitioners. On the request made by the Chairman of this Committee, Prof. Asoka Ekanayake, and Doctors Ajith Ranasinghe, R.L.Wijeyeweera and A.J.Pitigalaarachchi drafted the proposed amendments that were presented to the SLDA Council. After long considerations and deliberations, the final draft was prepared and was presented by the Chairman to the SLDA Council in January 1999. The GDSA also gave their proposals. The SLDA Council tried several times to meet the minister but failed. Most of the time the minister was unavailable. I take this opportunity to thank Dr. Ranjith Weerasinghe, Dr. Ajith Ranasinghe, Prof. A.N.I. Ekanayake, Dr. A. Pitigalaarachchi, Dr. R.L. Wijeyawera for their deliberated action.

In September 1998 the SLDA was informed by Dr.Jayalath Pinto of Dehiwela of the emergence of a Homeopathic Dental Association.

The Chairman of the Committee for prevention of malpractices has informed this matter to the S.L.M.C. and the Homeopathic Council under the Ministry of Health & Indigenous Medicine and the SLDA received the following information.

1. The so called Homeopathic Dental Association is not an Association that has been legally formed.
2. The Homeopathic Council is not aware of the existence of such an Association.
3. The Homeopathic Council informed that the Convenors of this Association are not registered as Homeopathic Practitioners.

None of the Homeopathic Practitioners, whether they are legally registered or not would be permitted to practice the Profession of Dentistry unless they are registered with the S.L.M.C. as dental practitioners. As such, Police has been requested to take legal action against such dental

practitioners and the convenors of the so called Homeopathic Dental Association.

New office for the SLDA

All payments to the OPA have been made but unfortunately the room has not been handed over to us, as the contractor is using it as the stores. Further the contractor has seized the 1st floor and our room in the ground floor due to non-payment of his dues. There is disagreement between the OPA and L.B. Finance - the tenant and the monthly rental has been withheld. Initially the OPA was to obtain a loan for the shortfall. Efforts are being made to remedy the situation with the L.B. Finance.

Office Equipments

I am happy to inform you that the SLDA has purchased a modern Computer with Internet Facilities to the office (F.S. Celeron 300A MHZ) to run the office work smoothly. This will be helpful to our members for their continuing education. Apart from that, E-Mail facilities are also available.

Sri Lanka Dental Journal

During the year 1998/99 the Journal Committee of the Sri Lanka Dental Association was able to release two issues of the Sri Lanka Dental Journal in July 1998 and December 1998. The next issue to be released in June 1999 is in preparation. From the many advertisements that appeared in the two issues published the committee was able to collect a sum of Rs. 120,000/- . The typesetting of the Journal was carried out at the SLDA Office by Miss. Thilini Amarasuriya.

The Committee is thankful to: all author, who contributed articles, all those who undertook the tedious task of reviewing the articles, the advertisers and Miss. Thilini Amarasuriya for typesetting the Journal and taking the responsibility of collecting the advertisements.

Finance

During the course of the year monthly accounts have been itemized and tabulated for easy reference. Due to the initiative taken by Dr. Asoka Amunugama some relief to our income tax payments has been obtained, our sincere thanks to him.

Further refinement of the accounts and cash flow needs to be tabulated in the coming year.

Library

During the year 1998/99 we have been getting down 02 Journals, the Dental Update and Quintessence at a cost of £ 182 (aprox Rs. 20,000/-) During this period we also received donations of books, copies of past journals and dental periodicals from four dental surgeons. We thank them for their kind offer. They are

1. Dr. Nimal Rajapakse – 86 books, journals and periodicals
2. Dr(Mrs) N.O. Ekanayake – 63 journals
3. Dr. Chris Stock – 35 journals
4. Dr. P.P. Thillaivasam – 26 journals & periodicals.

During the past two years 1997 – 1999 we had increased our stock of books and journals from 389 to 904 an increase of 515. We hope more and more members will make use of the Library to update their knowledge.

Asia Pacific Dental Federation

21st APDC Singapore from 20th April to 25th April 1999.

The following were nominated to participate at the Delegates Meeting by the SLDA Council:

Chief Delegate - Dr. Adly Mohamed – President

Alternate Delegate- Dr. Sarah Senaratne – Hon. Gen. Secretary and Dr. Mano Fernando – President Elect
Observers - Drs. Gamini de Silva, Hilary Corray, and Shahnaz Ozeer

Dr. K.D.G. Saparamadu and Dr. Gamini de Silva were

nominated for the posts of Chairman, Public Health and Chairman, Dental Education respectively.

We earlier had sent Dr. Reggie Goonetilleke's name to be included in the List of Honour of the APDC.

The delegates attended each and every meeting and they spoke to each and every delegation and negotiated for electing two nominees from Sri Lanka for the above posts. They were elected to two posts contested by them with a majority vote. We wish them all the best.

The APDF now include two other new Member Associations, namely Bangladesh and Fiji Unfortunately one Member Association gave its resignation from the APDF – namely the Singapore Dental Association.

The Scientific Sessions was a very successful one and comprised a series of lectures in Endodontics, Orthodontic Implants and Workshop in the same disciplines. Our members definitely improved their knowledge by attending the Scientific Sessions.

The opening ceremony was very charming and colourful. Our delegate Dr. Reggie Goonetilleke (Imm. Past President of APDF) was awarded the plaque for list of Honour of the APDF.

Following were the members of the delegation from the SLDA who attended the 21st APDC.

Drs. Adly Mohamed, Sarah Senaratne, Mano Fernando, Gamini de Silva, Reggie Goonetilleke, K.D.G. Saparamadu, Hilary Cooray, Lionel Dassanayake, Mrs. Priya Samaranayake, Shahnaz Ozeer, Fahmi Jameel, Mrs. Savithri Wijesinghe, and Dulip Gunawardena.

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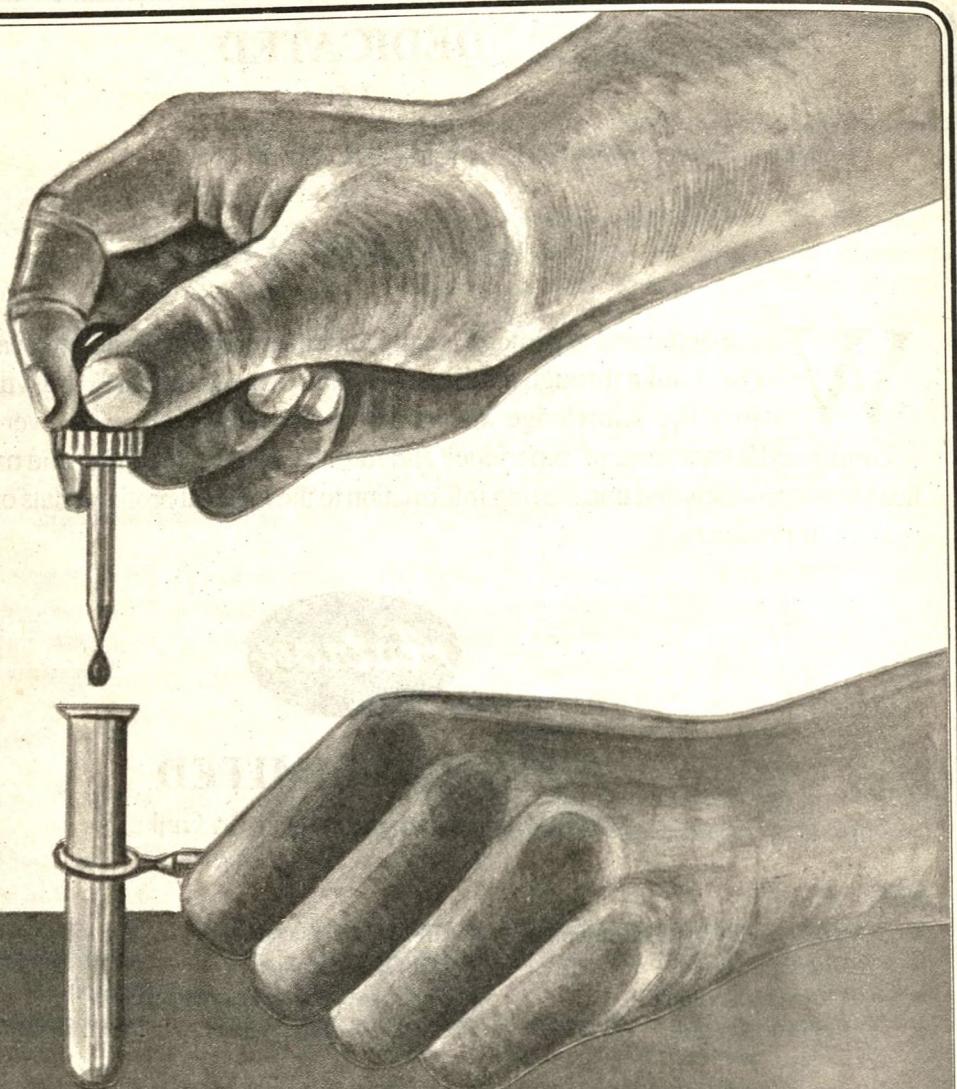
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| • COMBANTRIN pyrantal embonate | • DIFLUCAN fluconazole | • FASIGYN tinidazole |
| • FELDENE piroxicam | • ZOLOFT sertraline | • MINIPRESS prasozin HCL |
| • NOR VASC amlodipine | • TERRAMYCIN IM oxytetracycline | |
| • TROSYD tioconazole | • UNASYN sultamycillin | • VIBRAMYCIN doxycycline |

ASTRON

- | | |
|---|--|
| • ASTRIM co-trimoxazole | • ASTROCORT TOPICAL OINTMENT hydrocortisone |
| • AXCIL amoxycyclin | • BECOSUL vitamin B complex with vit. B 12 |
| • BECOSULES high potency B complex + vit C | • BEZINC vitamin B complex, vit C + zinc |
| • CEVIT ascorbic acid | • CLOXIL cloxacillin |
| • DIAMIDE chlorpropamide | • DUMASULES iron, vit. B complex with vit. C |
| • DUROL iron & B complex | • DUVIT BECO sugar coated vit. B complex |
| • EUGLZIP glipizide EVIT vitamin E | • ALLERMINE chlorpheniramine maleate MEDZOLE metronidazole |
| • MINTERRA multivitamin | • MULTI ELIXIR multivitamin |
| • MULTI SCT multivitamin | • OVRON multivitamin & minerals |
| • POLYMYCIN TOPICAL OINTMENT oxytetracycline + polymycin B sulphate | • OXIGARD betacarotene, vitamin C & E |
| • PREDLONE prednisolone | • PROTINEX vitamins, minerals & protein |
| • RAPISOL paracetamol | • SALMIN salbutamol |
| • TETRACORT oxytetracycline + hydrocortisone | • TETRACIL tetracycline |
| • ZINCROX vitamin & minerals | • ULCIBID cimetadine |
| | • OXIGARD vitamin C, E & betacarotene |

RENATA

- | | | |
|--------------------------|----------------------|----------------------|
| • DEXATABS dexamethasone | • NORMA-H ranitidine | • POLYCEF cephadrine |
|--------------------------|----------------------|----------------------|



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INSTRUCTIONS TO AUTHORS

The SLDJ publishes the following categories of articles which have relevance to Dentistry and allied sciences.

- 1. Leading Article** - One article per issue. It may be solicited by the Editor. Authors are welcome to submit leading articles on current topics of interest, one's expertise or commentaries on general practice etc. They should be approximately 1500 words in length. References should be 20 or less.
- 2. Reviews** - Reviews are detailed surveys of published research pertinent to dentistry and associated sciences. They should be critical in nature and should not normally exceed 3000 words and 30 references.
- 3. Papers** - Articles resulting from research work belong to this group. Results from routine clinical examinations or laboratory investigations will not be considered under this category. Subjects may vary from clinical trials to basic science research, historical analysis to dental economics. They should not exceed 3000 words and 25 references. A reasonable number of tables and illustrations will be accepted.
- 4. Short-Reports** - These include reports on current topics, modified techniques, new materials, practice management etc. Interesting results from routine clinical work or laboratory investigations may also be accepted.
- 5. Case Reports** - Reports such as of rare diseases or conditions, modification to accepted treatment procedures, new management methods etc. may be included in this category.
- 6. Letters to Editors** - Subjects unlimited, but may include short critique of published papers in the SLDJ.
- 7. Miscellaneous Topics** - Subjects unlimited and the format is free. These may also include details of scientific meetings, conferences, annual sessions, examinations, news and views, visits and obituaries.
- 8. Proceedings of Annual Sessions** - Abstracts from annual sessions of SLDA and other colleges will be published under this category.

The following instructions are mainly applicable to research papers. However, other articles should also conform as far as possible to these instructions.

Submission of Manuscripts

- 1. General** - Manuscripts must be submitted in triplicate. Text must be typed double - spaced with wide margins throughout in A4 (212 x 297 mm) size papers. They should be carefully scrutinised for errors before they are submitted. Correctness of spelling, grammar, and typing is the responsibility of the author. Three sets of figures and tables must be submitted. The number and the size of the illustrations must be consistent with the minimum requirement for clarification of the text. Previously published figures cannot be accepted. Manuscripts should be accompanied by a letter stating that the contents have not been published or submitted elsewhere for publication. Where applicable a copy of the ethical clearance certificate should be attached.
- 2. Title page** - Following information should be furnished in the title page.
Title of paper, names of authors in the order in which they are to appear in the published article, departmental or institutional affiliation and an address for correspondence.
- 3. Summary** - The brief summary should not exceed 250 words and should set out what was done, the main findings and conclusions. Upto five key words should be given for subject indexing. These key words should be taken from the Index Medicus or composed on the same principle.
- 4. Introduction** - The introduction should carry sufficient background information on the subject of study.
- 5. Materials and Methods** - These should be described in sufficient detail and include references.
- 6. Results** - This section should present the findings of the research supported by statistical or illustrative validation of assertion. It should be free from discussion.
- 7. Discussion** - The discussion should be focused on experimental findings and their interpretations. Unsubstantiated speculations and plans for future studies are unacceptable.
- 8. Tables and Figures** - These shoul be numbered in the order of appearance in Arabic numerals. Tables with brief titles should be typed on separate

pages. Legends for figures should provide a brief, self sufficient explanation of the illustration. Magnification should be indicated at the end of the legend if a calibration bar is not included in the figure. Photographs should be glossy prints and the reverse should give the figure number, title of paper, principal author's name and have a mark indicating the top. The cost of reproducing photographs and illustrations may be charged to the author.

9. References - References should be cited in the text as follows:

One author - (Jones 1992)

Two authors - (Jones and Arnett 1986)

Three or more - (Jones et al, 1972)

Some common examples for the style of references are given below.

Bartlett J.G., O'Keefe P. (1979) The bacteriology of the perimandibular space infections. *J. Oral Surg* 37: 407-409.

Stokes E.J., Ridgeway G. (1987) Clinical Bacteriology, 6th ed. London: Edward Arnold, 202-217.

Boyde A. (1976) Amelogenesis and the structure of enamel. In : Cohen B., Kramer K.H. (eds) Scientific Foundations of Dentistry. William Heinemann Medical Books Ltd. London, 335-352.

Barker D.S., Lucas R.B. (1965) Localised fibrous growth of the oral mucosa. *J. Dent Res* (In press)

Report of the committee of enquiry into unnecessary dental treatment (1986) HMSO, London, 52-53.

Cumings S. (1992) Personal communication, San Francisco.

Amaratunge N. A. De S. (1991) Epidemiology and treatment needs of maxillofacial fractures in Sri Lanka, PhD thesis, University of Peradeniya.

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