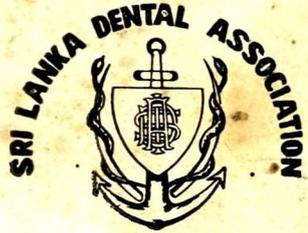


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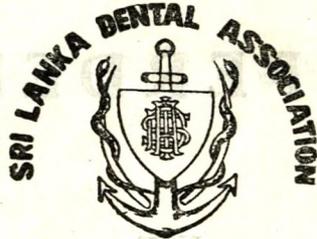
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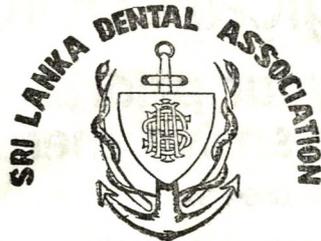
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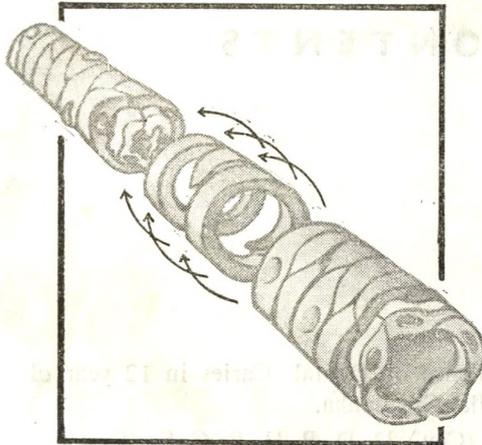
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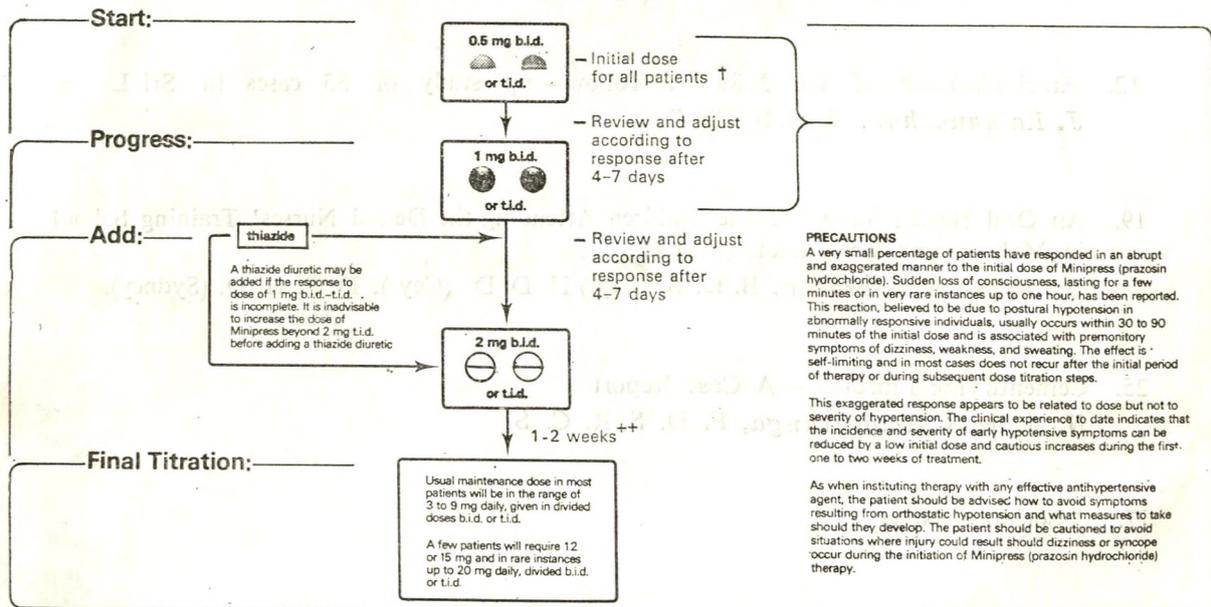
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"Health for all by the year 2000" would seem yet another dream odyssey of the future. This has been visualised by the W. H. O., which has already been successful in achieving what seemed a impossibility – the eradication of small pox from the face of the earth. Disraeli wrote that "The health of people is really the foundation upon which all their happiness and all their powers as a State depend". The Bible confirms that without health, riches are worthless.

Upto now our health care system has concentrated on the negative aspect of curing disease. Medicine has now progressed to such dimensions that it is now able to prolong life and relieve pain to a great extent. However it is unfortunate that relatively little effort has been directed towards achieving an "improved quality of life". As society becomes more affluent, we can expect that the quality of life will receive increasing attention. In other words our health is not what it could be and should be. The concept of health care for all aims to bridge this ever widening gap. It aims to prevent illness occurring in the first place by improving the environment, introducing immunisation programmes and above all by educating the public towards good health practices. There is vast scope for education of the public to adopt life styles and practices that are conducive to good general health and this is very essential for a developing country like ours.

More than 90 percent of our population is afflicted with one or the other of the more common oral diseases. Dental caries and Periodontal disease are conditions where rapid response can be expected to simple preventive measures carried out by each individual. One of the problems obstructing effective dental health education is the view taken by a considerable proportion of the public and by some of our colleagues in other health professions that dental health has little relation to general health, and also that dental diseases are those which can be easily repaired.

Dental Health Education in Sri Lanka is available only to that portion of the population who receive regular dental care. But with a little effort this simple message can be carried to a much larger proportion of the population. Our agents in prevention are those in a much closer relationship with the family – specially those having direct responsibility for child care and health services. Primary prevention should occur in the home and its greatest potential is in the early formative years. Popular participation so that the people of the community themselves become the front line workers in their own health care, is the best strategy that can be adopted. To this end the services of the Primary Health Care Worker or Family Health Worker as she is more commonly known in our country, could be utilized with the least financial constraint. The contact between the Dental Profession and our potential allies the Family Health Workers should increase, for the greater benefit of the population. They are indeed our allies as we are theirs and we should in the interest of Public Health, use them to their maximum potential.

Dentistry is a science and an art, but dental health is a state, a part of general health. The ultimate goal or purpose of dentistry is dental health for all people everywhere – World Dental Health. The responsibility for health is a shared responsibility between the Government, the Health Professions and the people both collectively and individually.

Epidemiological Data pertaining to the prevalence of Dental caries in 12 yr. old school children in the SHS Division, Badulla, Sri Lanka.

By P. P. TILLAIVASAN,¹ LDS (Ceylon)
HDD (Ceylon)
DDPHRCS (England)

The caries status of 12 year old school children in the Badulla Division is reviewed. The Prevalence of dental caries was found to be low. There was evidence of untreated dental caries.

Dental caries is one of the commonest diseases in the world. It is characterised by cavitation and irreversible destruction of deciduous and permanent teeth. Though basically of microbial origin its prevalence is closely correlated with dietary factors particularly the use of refined carbohydrates.

This paper reviews the caries status of 12 yr. old school children in 4 clinic based schools in the Badulla Health Division. The 12 yr. group was selected because it is an index age for a pathfinder survey and roughly corresponds to the age of exit from the primary school.

The purpose of the study was to collect data which would serve as a base line for a dental health programme in the 4 schools.

Material and methods

SHS Division Badulla has an area of 1097 5/16 sq. mls. Population is 697,000. There are nine electoral districts. Clinic based schools from 4 electoral districts were selected for the study. The sample may be described as a convenience sample. All clinics staffed by 2 school dental nurses were included. The names of all school children who had completed their 12 th birthday but who had not reached 13 yrs. in the four schools comprised the sample.

The study to be described was carried out during the months of February, March and May 1980.

A list of samples and the number of observations is given below:-

The number examined by School & Sex

Name of School	Electoral District	Male	Female	Total
1. Dharmaduta M. V.	Badulla	99	0	99
2. M. M. V. Passara	Passara	28	19	47
3. M. M. V. Mahiyangana	Mahiyangana	11	28	39
4. Sivali M. V.	Bandarawela	20	8	28
		158	55	213

¹ Regional Dental Surgeon, S. H. S. Division, Badulla.

Table I Caries Experience in the 4 Schools

DMF	Dharmadutha MV Badulla		MVV Passara		MMV Mahiyangana		Sivali MV Bandarawela	
	Number of Subjects	Percentage	Number of Subjects	Percentage	Number of Subjects	Percentage	Number of Subjects	percentage
0	53	54%	25	53%	24	62%	11	39%
1	21	21%	9	19%	7	18%	5	19%
2	14	14%	5	11%	3	7.5%	6	21%
3	4	4%	3	6%	3	7.5%	3	10.5%
4	6	6%	2	4%	2	5%	2	7%
5	0	0	2	4%	0	0	1	3.5%
6	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0
8	0	0	1	2%	0	0	0	0
9	0	0	0	0	0	0	0	0
10	1	1%	0	0	0	0	0	0
	99	—	47	—	39	—	28	—
		100%		100%		100%		100%

RESULTS

Method of examination - All subjects were examined by the author, Auxiliary information - age, sex, ethnic group were reported in the form by the school dental nurses.

The DMF index by Klein et al 1938 was used. Each permanent tooth was considered individually and if it is decayed (D) missing due to caries (M) or filled (F) it scores one. The total of the affected teeth is an expression of an individual's dental caries experience. It is a quantitative expression of the life time caries experience of permanent teeth.

In each school prior to the survey the nurses were given a brief training in dental epidemiology. The nurses were allowed to examine to correct the authors intra examiner errors. Examiner variability was negligible.

Oral examination was carried out by mouth mirror and explorer. Examination was carried out in the school dental clinics and in fairly good artificial light. Children were brought to the clinic in batches of ten. About 30 were examined on a single day.

Table II Percentage of Subjects affected by Dental Caries

Name of School	Caries Free %	One or more DMFT %
1. Dharmaduta M. V. Badulla	54%	46%
2. M. M. V. Passara	53%	47%
3. M. M. V. Mahiyangana	62%	38%
4. Sivali M. V. Bandarawela	39%	61%

Table III Number of Erupted Permanent Teeth

Name of School	Sample	Number of erupted Perm. Teeth
1. Dharmaduta M. V. Badulla	99	2290
2. M. M. V. Passara	47	1194
3. M. M. V. Mahiyangana	39	903
4. Sivali M. V. Bandarawela	28	549

Table IV DMF expressed as mean and percentage

Name of School	Mean DMF	% of Teeth decayed missing or filled
1. Dharmaduta M. V. Badulla	.96	4.15%
2. M. M. V. Passara	1.15	4.52%
3. M. M. V. Mahiyangana	.77	3.32%
4. Sivali M. V. Bandarawela	1.39	7.14%
5. Badulla Health Division	1.02	4.41%

Table 2 shows that the overall caries experience at MMV Mahiyangana is far better than the other schools whereas caries is most prevalent at Sivali M. V. Bandarawela.

Table 3 shows the number of erupted permanent teeth for the sample. This is used to calculate the DMF as a percentage.

(A) The mean DMF was calculated by dividing the total number of DMF teeth by the total number of subjects examined.

(B) % DMF = $\frac{\text{number of DMF teeth} \times 100}{\text{number of erupted teeth}}$

Table IV shows that the dental caries experience is least at M. M. V. Mahiyangana and most prevalent at Sivali M. V. Bandarawela.

Table V DMF of other countries compared with Health Division - Badulla

Country	D. M. F.
1. Island Polynesia (1972)	9.03
2. French Polynesia (1970)	8
3. Vietnam (1970)	6.3
4. Thailand (1975)	4.5
5. Kanya (1973)	1.7
6. Badulla Health Division (1980)	1.02

In Table V the overall caries experience in Health Division Badulla has been compared to the caries status of 12 yr.

old children from other countries. It is evident that the overall caries prevalence in Badulla is low.

Table VI: Number of D. M. F. teeth according to its components.

Name of schools	Sample	D	M	F
1. Dharmadutha M. V. Badulla	99	51	7	37
2. M. M. V. Passara	47	30	0	24
3. M. M. V. Mahiyangana	39	28	0	2
4. Sivali M. V. Bandarawela	28	36	0	3

The results in Table VI suggests that the stress is on conservation at Badulla and

Passara. However there is evidence of untreated caries in the four schools.

Table VII Restorative Index

Name of School	Restorative Index
1. Dharmaduta M. V. Badulla	42.05
2. Passara M. M. V.	44.44
3. Mahiyangana M. M. V.	6.69
4. Sivali M. V. Bandarawela	7.69

Restorative Index = $\frac{F \times 100}{(F + D) \text{ Teeth.}}$

If all decayed teeth are filled the Restorative Index will be 100.

Table VII shows that the Restorative Index is satisfactory in Badulla and Passara. Whereas at Bandarawela and Mahiyangana it is low.

DISCUSSION

The overall prevalence of dental caries in the 4 selected schools in Badulla Health Division is low. (Tables I, II, IV, and V). There is also a variation in caries prevalence between the 4 schools (Tables I, II, IV): The concentration of fluoride in Uva Province (where Badulla is situated) varies from 0.2 ppm to 4.1 ppm. Fluoride may be the factor responsible for the low prevalence of caries. Another likely factor may be the rural dietary patterns. Diet is usually rice and curry. Fish is invariably one of the curries. Fruits and plain tea are also consumed in fairly large quantities. Consumption of refined carbohydrates is low.

There is also evidence of untreated dental caries in the 4 schools (Table VI, and Table VII). The Restorative index is satisfactory in Badulla and Passara whereas it is low in Bandarawela and Mahiyangana (Table VII). Extractions, fillings and scalings are carried out in a systematic manner in Badulla and Passara School Dental Clinics. School Dental Clinic at Mahiyangana is more of an extraction centre of deciduous teeth. Scalings are also done but the output of fillings is poor. School Dental Clinic at Bandarawela is a relatively new clinic. Even in this clinic conservation has been neglected. The Restorative Index is a reflection on the dental service provided in the 4 clinics.

At present all subjects included in the study are being treated for caries by the School Dental Nurses. A Dental Health Education Programme is also being carried out by the nurses. The success of the dental health programme may be evaluated by noting the following:-

1. New carious lesions in the subjects.
2. Whether all decayed teeth in the subjects have been filled.

CONCLUSION

Two Hundred and thirteen 12 years old school children from Badulla Health Division were examined for this study. The D. M. F. index by Klein et al was used. The study was modified with a view of restricting costs to a minimum due to lack of funds. The following conclusions seem to be justified:-

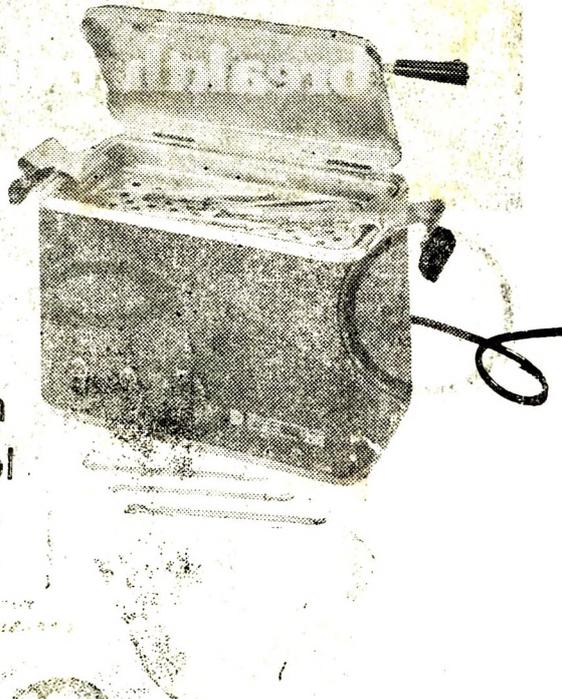
1. The prevalence of dental caries in 12 year old school children in Badulla Health Division is low.
2. There is evidence of untreated dental caries in the 12 year age group in Badulla Health Division.

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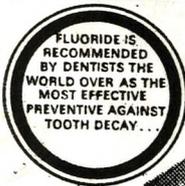
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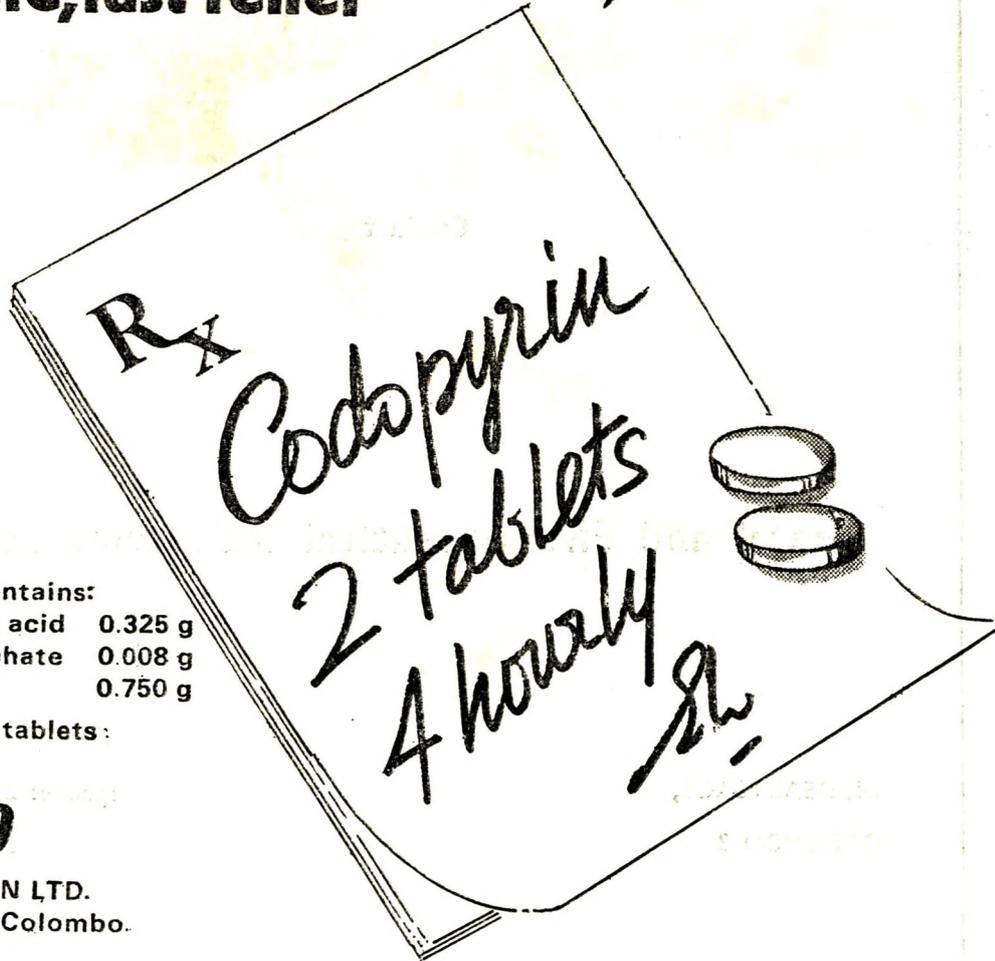
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Functional Dimensions of the Oral Cavity

M. T. M. JIFFRY,¹ BDS.
M. M. Ed Sc (Cey.),
M. Sc (U. K.)

An attempt has been made to explore the functional dimensions of the oral cavity, amongst male and female subjects within the age group of 20-25 yrs. The males showed significantly larger functional dimensions of the mouth than that of the females. There was a highly significant correlation between the maximum mouth capacity and the convenient mouth volume in this group.

It is a common experience that if a large volume of liquid or solid is taken into the mouth we find it difficult to prepare it for swallowing. Preliminary observations on the intake of masticable solid food showed that the particles produced by masticating a larger mouthful resembled that produced by subjects with impaired dentition (Jiffry, 1981). If the volume of food taken into the mouth has a significant effect on mastication, it is beneficial to know the average functional dimensions of the mouth which could be considered as "normal" or "convenient" for a particular group of subjects. It will also be helpful in assessing the amount of liquid one would have taken in the case of the intake of poisons. Furthermore in prescribing mouth rinses, the knowledge of functional dimensions would be of immense use. Therefore, this study was undertaken to find a) the average convenient mouth volume b) the maximum mouth capacity and c) the average volume per swallow in male and female subjects within the age group of 20-24 yrs. Water at room temperature was used as the medium of measurement.

In addition to the above mentioned functional dimensions, the lower facial height was measured to find out whether it

is correlated with any of the functional dimensions which were investigated in this study. It also should be noted, that the term "volume" is used to denote the volume of water taken during normal function and the term "capacity" is used to denote the actual volume of the space within the oral cavity.

Materials and methods

Male and female first year Medical and Dental students participated in this study.

Convenient Mouth Volume (CMV)

The subjects were asked to take a convenient volume of water into the mouth from a beaker containing a known volume. This was repeated thrice to get an average value for each subject.

Maximum Mouth Capacity (MMC)

Like in CMV, the subjects were asked to take as much water as possible from a known volume so that the whole mouth could be filled. This was also repeated thrice and the average value was determined for each subject.

¹ Dept. of Physiology, Faculty of Medicine, Kynsey Road, Colombo 8.

Volume Per Swallow (VPS)

The subjects were requested to drink a known volume of water and the number of swallows utilised were noted. The average volume per swallow was calculated by dividing the total volume consumed by the number of swallows.

Lower Facial Height (LFH)

A ruler was placed under the nose and the length upto the lower-most point of the chin was measured while the teeth were in occlusion.

The total number of subjects who participated in this study were 47 and 22 of them were females. On a different day 10 males and 10 females from the above group were randomly chosen and repeated the same measurements at two consecutive occasions to ascertain the intra individual variations.

Results

The results are summarised in tables 1 and 2. The CMV, MMC, VPS and LFH showed lower values amongst females than in males. These differences were found to be highly significant in the case of CMV which was only probably significant. It is interesting to note that the volume per swallow was approximately half in females of that in males.

There is a highly significant positive correlation ($r = +0.69$, $p < 0.001$, table 2) between the convenient mouth volume and the maximum mouth capacity. Besides this there were significant positive correlations between maximum mouth capacity and volume per swallow ($r = 0.41$, $p < 0.001$, table 2) and between convenient mouth volume and lower facial height ($r = 0.43$, $p < 0.001$, table 2)

Discussion

The CMV, MMC, VPS and LFH showed significantly larger values in males than in females agreeing with the general tendency to have a smaller feminine body stature.

It is interesting to note that the convenient mouthful is about 1/3 of the amount the mouth could really accommodate. However, the maximum mouth capacity is not the actual capacity of the mouth since the tongue occupies a considerable space. Bandy et al (1969) had shown that the anterior 2/3 of the human tongue displaces averagely about 30 ml. of water. Therefore, the actual capacity of the mouth in these subjects should be approximately 110 ml.

When the mouth is closed and the mandible is in rest position, the oral cavity has only a small space filled with air and saliva since the tongue occupies the rest of the available space. In subjects with fairly normal occlusion, the oral cavity may be naturally sealed anteriorly by the lips and posteriorly by the soft palate falling onto the dorsum (posterior 1/3) of the tongue giving rise to Donders' space (Donders, 1875) which has a sub-atmospheric pressure. It has been postulated that at rest, the average capacity of the oral cavity may be about 40-50 ml. together with the tongue. However, no conclusive studies have been done on this aspect.

The average volume per swallow in this group of subjects were 21 ml., having lower values for females. This was consistent with the results of a short investigation done by Jones et al., (1961) where they showed the average volume per swallow was 21.3 ml in adult males and 13.6 ml. in adult females.

TABLE 1 Comparison of the functional dimensions ($\bar{X} \pm$ S. D.) of the oral cavity, between the males and females

Functional Dimension	Males (n = 25)	Females (n = 22)	% Difference between males & females	Level of Significance (P)
1. Convenient Mouth Volume (CMV) ml.	33.84 \pm 12.68	30.02 \pm 12.57	22.71	Probably significant (< 0.01)
2. Maximum Mouth Capacity (MMC) ml.	98.25 \pm 21.6	65.59 \pm 15.51	33.24	Highly significant (< 0.001)
3. Volume Per Swallow (VPS) ml.	27.7 \pm 10.06	13.55 \pm 4.28	51.08	Highly significant (< 0.001)
4. Lower Facial Height (LFH) cm.	6.53 \pm 0.34	6.02 \pm 0.52	7.81	Highly significant (< 0.001)

The highly significant positive correlation between convenient mouth volume and maximum mouth capacity (table 2) suggests that the subjects with larger mouths habitually tend to take larger volumes of water. This phenomenon was found to be true in the case of MMC and VPS where subjects with larger mouth capacities tend to swallow larger volumes of liquid (table 2). Similarly subjects with high LFH inclined to take a larger volume of liquid as a convenient mouth volume. Except the LFH and MMC which were purely objective values, the VPS and CMV depended on the personal preference and habits of the subjects, which could be called as subjective measurements. However, these values could not be discarded because these were the actual functional dimensions of the mouth. In other words, VPS and CMV are what the mouth actually does take rather than how much it can take.

Nevertheless in a separate study it is worth looking into the maximum swallowable volume instead of VPS which was the volume of water the subjects swallowed at ease and also without any definite instru-

ctions. Therefore, it may be assumed that what was measured in this study was the normal volume per swallow.

It is interesting to note that the normal volume per swallow is poorly correlated with the convenient mouth volume. In other words the volume of water one normally tends to swallow is not correlated to the convenient volume of water one prefers to take into the mouth. However, it will be interesting to investigate the relationship between the volume of water one takes into the mouth and the volume remaining within the mouth thereafter. In addition it would be interesting to note how these dimensional changes occur during development. In a previous study it was observed that the subjects within the age group 20 - 24 yrs. preferred to take solid food weighing averagely 7.00 gms. (Jiffry, 1981) and this amount was considerably low (about 3 - 4 gms.) in subjects within the age group of 10 - 16 yrs. (Jiffry 1981).

TABLE II The mean (\pm SD) values of some oral dimensions and their coefficients of correlation between each values.

N = 47

I. CMV	34.71 \pm 13.26			
		I		
II. MMC	82.90 \pm 24.97	I & II r = 0.69 < 0.001		
			II	
III. VPS	21.07 \pm 10.59	I & III r = 0.33 0.02 < p < 0.05	II & III r = 0.40 0.01 < p < 0.001	
				III
IV. LFH	6.29 \pm 0.49	I & IV r = 0.4113 0.001 < p < 0.01	II & IV r = 0.28 0.05 < p < 0.1	III & IV r = 0.2 0.1 < p < 0.5

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Ameloblastoma of the Jaws

A follow-up study of 33 cases in Sri Lanka

J. RAMANATHAN BDS, Ph. D.¹

The clinical features, histology and recurrence on 33 cases of Ameloblastoma of the jaws were studied. None of the four hemisectioned tumours recurred while 36.4% of the tumours treated by local resection or curettage recurred. Hemisectioning seems to be the best treatment approach especially if the tumour had already recurred following local resection or curettage.

Ameloblastoma of the jaws account for approximately 1 percent of all oral tumours. (Small & Waldron, 1955). It is a benign but locally invasive neoplasm consisting of proliferating odontogenic epithelium lying in a fibrous stroma (Pindborg & Kramer, 1971).

The resemblance of the tumour epithelium to the normal enamel organ suggests that the tumour arises from the odontogenic epithelium or is at least closely connected with it. However, the precise point of origin of this tumour is yet unknown. Several probable origins have been suggested, such as the rest cells of dental lamina (Gorlin & Goldman, 1970), cell rests of Serre, enamel organ (Robinson, 1937), epithelial cell rests of Malassez (Mc Farland & Patterson, 1931) epithelial lining of odontogenic cysts (Bernier and Tiecke, 1951) and oral epithelium (Hodson, 1957; Stanely & Krough, 1959).

Very little is known as to the aetiology of Ameloblastoma. The question is, what induces the odontogenic epithelial cells to proliferate? Irritation (New, 1915) connected with difficulty of eruption especially of the 3rd molar, history of previous oral infection (Robinson, 1937) and trauma (Forberg, 1954) have been suggested as possible causative factors. However the above mentioned causative factors are also common in otherwise normal persons and hence little can be concluded from such observations Ricketts (Geschickter, 1935)

and viruses have been mentioned as other probable causes of Ameloblastoma. In fact tumours that are quite comparable with ameloblastoma in man have been experimentally produced in mice by injecting prolyoma virus (Stanely et al., 1964; Stanely et al., 1965; Main & Dawe, 1966). Furthermore virus like particles have been demonstrated electronmicroscopically in one ameloblastoma (Csiba et al., 1970).

Ameloblastoma arising in the jaws has a tendency to recur (Gorlin & Goldman, 1970; Lucas, 1976). Due to the local invasion of the tumour, recurrence after curettage is common (Lucas, 1976). To the best of our knowledge no literature is available on ameloblastoma in Sri Lankans. The aims of the present study are—

- (a) To report on the age, sex site distribution and the duration of the tumour among Sri Lankans.
- (b) To study the behaviour of the tumour in relation to the recurrence and to correlate this with the histopathological type and treatment given.

Materials and Method

Altogether a total of 33 cases of ameloblastoma, (diagnosis confirmed histologically) were studied. This was done by first going through the histopathological records maintained in the pathology laboratories of Colombo Eye Hospital,

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Maharagama Cancer Institute, Kandy General Hospital and the Peradeniya Medical and Dental Schools, from 1973 to 1979. The clinical data and the type of treatment given were obtained by going through the clinical records. Light microscope slide preparations were examined for all 33 cases except one (the histopathological report was available for the latter).

Results

A total of 33 cases of ameloblastoma were examined. The average age of the patient at the time of report was about 37 years. 28% of the patients belonged to the age group of 31 to 40 years (Table I). About 84% of the cases in this series were of 20 to 60 years of age. The youngest patient was a 14 year old male and the oldest a 60 year old female.

Of the 33 cases studied (sex was not known for one case) 16 were females and 16 males. 7 females (43.7%) out of the 16 belonged to the age group 31 to 40 and 5 (31.2%) out of the 16 males were in the late age group of 51 to 60 years.

Mandible was the commonest location for the development of ameloblastoma in this series (90%). 81.5% of the tumours arising from the mandible were located in the premolar and molar region. (Table II). About 14.8% arose in the mandibular symphyseal area.

35.8% of the ameloblastomas had a duration of 1 to 2 years only (Table III).

All in all 85.8% of the tumours showed a duration of less than 2 years. Only 1 tumour exhibited a duration of over 3 years. 4 of the 33 tumours (12%) were in relation to unerupted teeth and were clinically diagnosed as odontogenic cysts.

Four histopathological types of ameloblastoma, the follicular (56.3%), plexiform (37.5%) acanthomatous (3.1%) and granular cell ameloblastoma (3.1%) were encountered in this series (Table IV). Of the 12 cases of ameloblastomas which recurred (36.4%), 6 were follicular type, 4 plexiform, 1 acanthomatous and 1 granular cell ameloblastoma. There was no correlation between the histopathological types of ameloblastoma and the recurrence of the tumour.

Of the 33 cases (method of treatment was not available for 1 case), 21 were treated initially by local resection with adequate healthy margin of normal tissue, 7 were either curetted or enucleated and 4 were hemisectioned. All 12 (36.4%) recurrent cases in the series were treated initially either by local resection or by curettage. 7 of the 21 locally resected cases recurred (33.6%) while 5 of the 7 curetted tumours recurred (71.4%) (Table V). 50% of the ameloblastomas recurred once, while the rest occurred twice (Table VI). 6 of the 12 cases recurred within 1 year following treatment and 25% were recurred in 2 years (Table VII).

TABLE I
DISTRIBUTION OF AMELOBLASTOMA ACCORDING TO AGE AND SEX

Age Group	Male	Female	Total	Percentage (%)
11 — 20	3	2	5	15.7
21 — 30	4	2	6	18.7
31 — 40	2	7 *	9	28.2
41 — 50	2	4	6	18.7
51 — 60	5 *	1	6	18.7

* Highest number of males/females seen.

**TABLE II DISTRIBUTION OF AMELOBLASTOMA
ACCORDING TO SITE**

Location of Tumour	No. of Cases	Percentage (%)
MANDIBLE		
Premolar - Molar region	22	81.5
Symphysial region	4	14.8
Incisor - Canine region	1	3.7
Total	27	100.
MAXILLA		
Premolar - Molar region	1	33.3
Incisor - Canine region	1	33.3
Hard palate	1	33.3
Total	3	100.

Mandible - 90% Maxilla - 10%

TABLE III DURATION OF AMELOBLASTOMA

Duration of Tumour	No. of Cases	Percentage (%)
< 3 months	3	21.4
3 — 6 months	4	28.6
7 — 11 months	0	—
1 — 2 years	5	35.8
2 — 3 yaers	1	7.1
> 3 years	1	7.1

TABLE IV HISTOPATHOLOGICAL TYPES OF AMELOBLASTOMA

Histological type	No. of Cases	Percentage (%)
Follicular	18	56.3
Plexiform	12	37.5
Granular cell	1	3.1
Acanthomatous	1	3.1

TABLE V TREATMENT AND RECURRENCE OF AMELOBLASTOMA

Year of Initial Treatment	Initial Treatment and Year of Recurrence	
	Local Resection	Curettage
1947	1 1963, 1978	—
1971	1 1972, 1978	—
1973	—	1 1975, 1 1979
1974	1 1975, 1979	1 1975, 1978, 1 1979
1976	1 1978, 1 1979, 1 1978 1979	—
1977	—	1 1978, 1 1978
1978	1 1979	—
Total No. of cases recurring	7 (33.6%)	5 (71.4%)
Total No. of cases seen	21	7

TABLE VI NUMBER OF RECURRENCE OF AMELOBLASTOMA

1st Time Recurrence	2nd Time Recurrence
6 (50%)	6 (50%)

TABLE VII TIME INTERVAL BETWEEN THE FIRST RECURRENCE OF AMELOBLASTOMA

1 year	2 year	3 year	5 year	> 5 years
6 (50%)	3 (25%)	1 (8.4%)	1 (8.4%)	1 (8.4%)

Discussion

Several extensive surveys and reviews of ameloblastoma have been published (Small & Waldron, 1955; Robinson, 1937). Small and Waldron (1955) have analysed over 1000 cases of ameloblastomas and reported that the average age of the patient at the time of report was about 39 years which is consistent with this study where the average age was 37 years. 28% of the patients which was the highest in the series, belonged to the age group 31 to 40 years, whereas in Small and Waldron's study the highest number of cases (21%) was evenly distributed between the age groups 20 to 29, 30 to 39 and 40 to 49.

The youngest patient in this study was 14 years old. Ramanathan & Lee Seng Guan (1968) have reviewed the occurrence of ameloblastoma in children (below 12 years) where only 6 cases have been reported, the youngest being 3 years old.

Gorlin and Goldman (1970) pointed that many of these lesions were proved to be ameloblastic fibroma, odontoma or even tumours of minor salivary gland origin. The oldest patient in our study was 60 years of age. Lucas (1976) has mentioned an 80 year old patient being the oldest to have developed an ameloblastoma

The tumour was evenly distributed between the sexes in this series. However it is interesting to note that about 44% of the females belonged to the age group of 31 to 40 years while 31% of the males presented in the late age group of 51 to 60 years. This feature has never been reported in any study of this nature. As the number of cases studied is relatively small no definite conclusion could be made except that this behaviour of the tumour among Sri Lanka may be of some assistance in the diagnosis of this tumour.

90% of the ameloblastomas developed in the mandible and is consistent with previous studies. (Small & Waldron, 1955). In the mandible about 80% of the tumours developed from the premolar and molar region. Only 15% arose from the symphyseal region. It is interesting to note that in the Nigerians most of the tumours occur in the mandibular symphysis and premolar area (Lucas, 1976).

86% of the tumours in this series was of less than 2 years duration. However, Small and Waldron (1955) have reported that about 32% of the tumours had a duration less than 2 years. They reported that the average duration of the ameloblastoma was about 6 years. In an even older study (Robinson, 1937) the average duration was as high as 8.5 years. The dramatic fall in the duration of the tumour in this series may be due to the increase in public awareness of cancer and related tumours.

The commonest histopathological type of ameloblastoma was the follicular type (56.3%) and the second commonest was the plexiform type (37.5%) of ameloblastoma. No correlation could be made between the histopathological types and the recurrence of the tumour. However, the follicular type of ameloblastoma seems to recur slightly more than the other types.

12% of the ameloblastomas were in relation to unerupted teeth or were clinically diagnosed as 'cysts'. This reiterates the need for biopsying all cystic lesions of the jaws since the treatment and management of ameloblastomas are quite different from the ordinary cysts of the jaws.

This is the first report where the behaviour of ameloblastoma among the Sri Lankan population has been investigated. It is interesting to note that none of the cases treated by

hemisectioning (radically) initially, recurred within the period of observation (1973 to 1979). The 12 cases (36.4%) which recurred had been treated by either local resection or curettage. It is important to note that 71.4% of the cases treated by curettage recurred and about 50% of the tumours recurred more than once.

Ameloblastomas have been treated by (a) irradiation (b) curettage (c) local resection with adequate healthy margin of normal adjacent tissue and (d) hemisection (Gorlin & Goldman, 1970; Lucas, 1976; Shafer et al., 1974). Ameloblastomas however are not radiosensitive (Gorlin & Goldman, 1970; Shafer et al., 1974) and due to its local invasiveness, curettage is not considered an effective method of treatment (Lucas, 1976). The widely accepted treatment approach is either local resection or hemisection (Gorlin & Goldman, 1970; Lucas 1976). Based on the present study, hemisectioning seem to be the best treatment approach especially so if the tumour had already recurred following local resection. This would considerably reduce the recurrence rate as seen in this study where 50% of the tumours recurred more than once.

Acknowledgement

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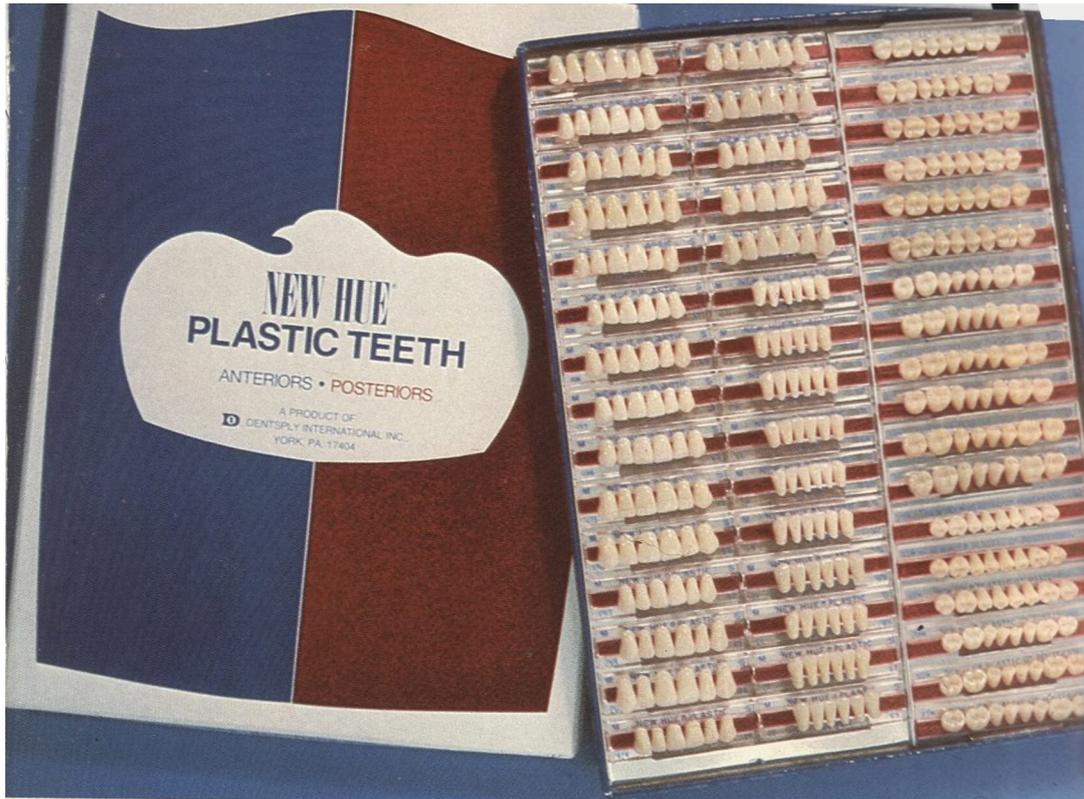
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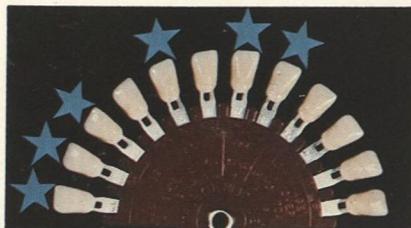
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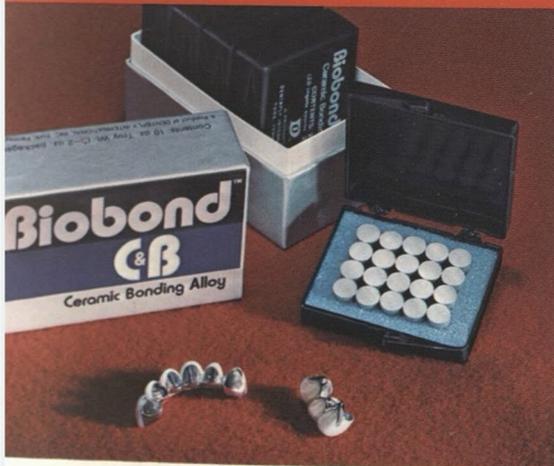
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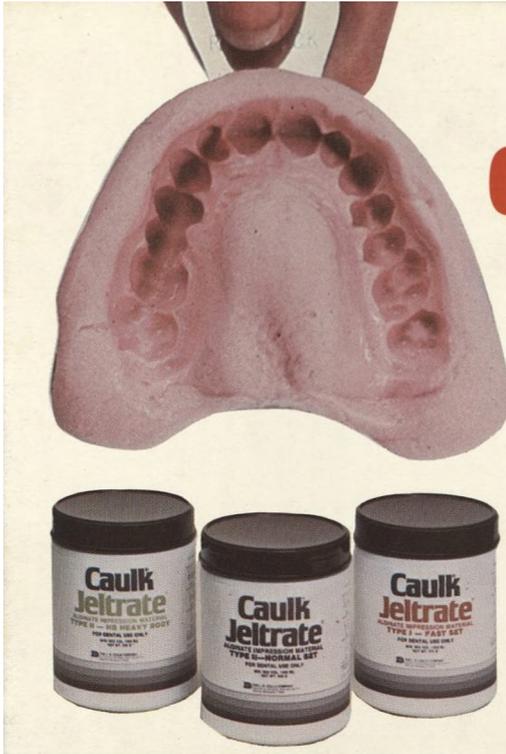
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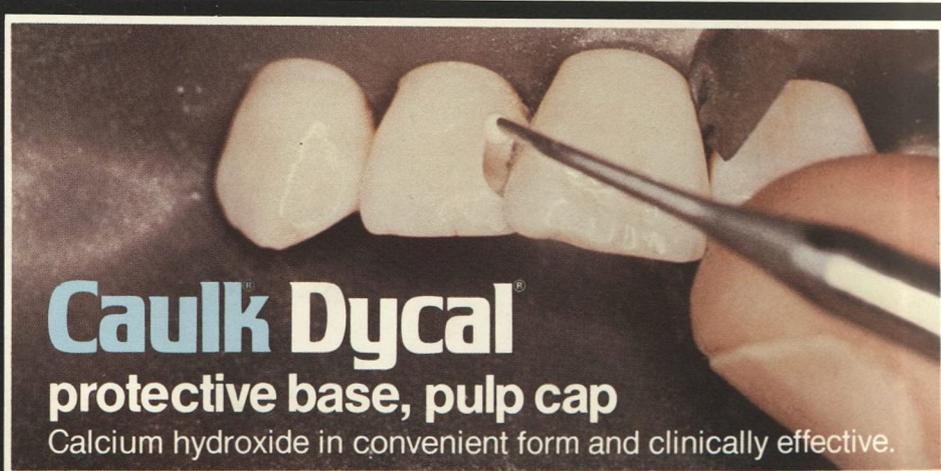
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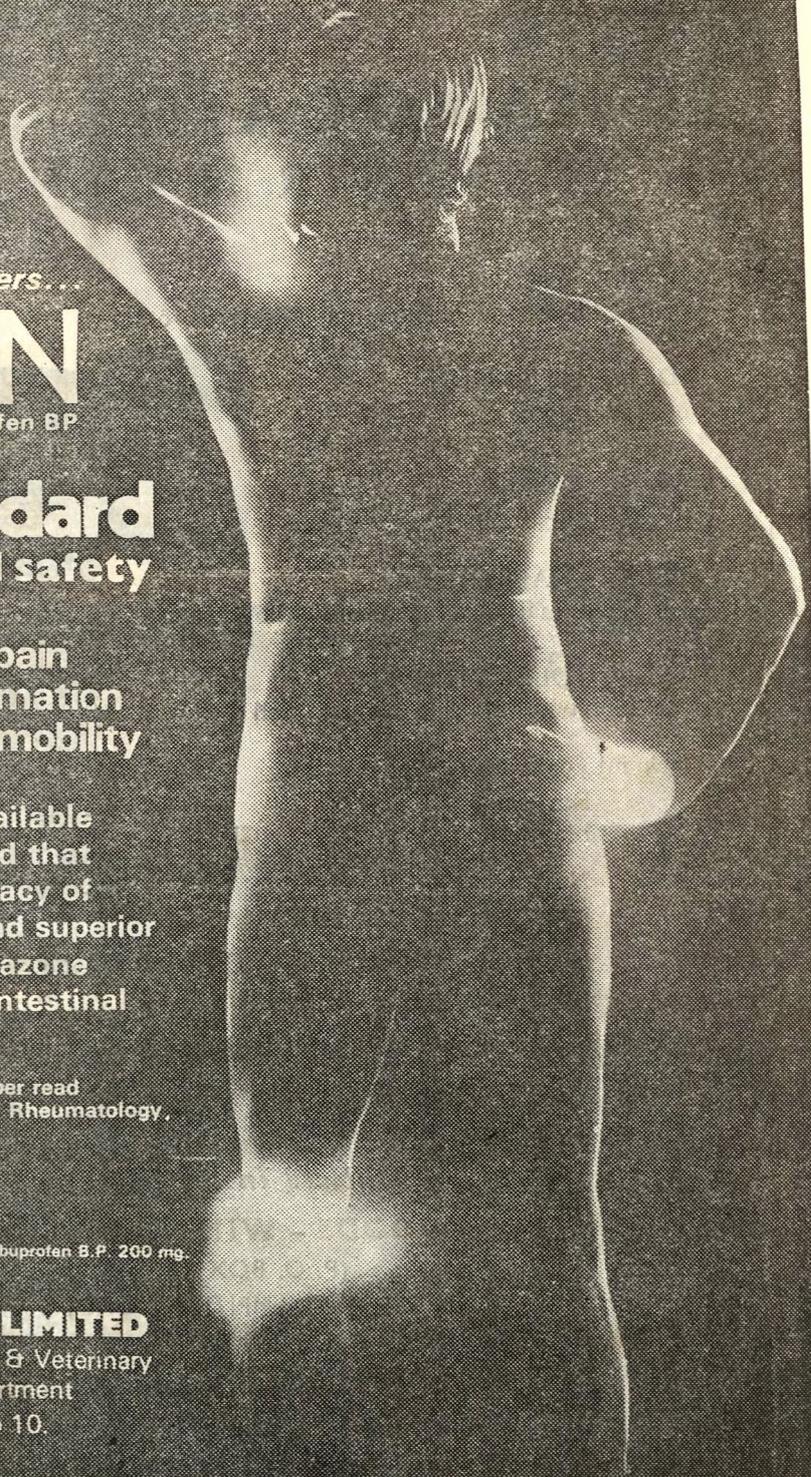


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An Oral Health Survey of the Children Attending the Dental Nurses' Training School in Maharagama, Sri Lanka. (Part I).

by SIROMANI ABAYARATNA¹ B. D. S. (Cey.),
H. D. D. (Cey.), D. P. H. D. (Sydney)

An Oral Health survey carried out 25 years after the opening of the Dental Nurses Training School at Maharagama, shows that there is a significant reduction in caries in the 4-7 years age groups. The percentage of children having relatively good teeth (0-3 dmf), at all ages, had increased, in spite of the increased sugar consumption over the last 25 years. The Oral Health status of these children was also very satisfactory.

A survey was undertaken to assess the dental caries and oral health status of 1005 school children attending the Dental Nurses Training School and Childrens Clinic at Maharagama. Part of the results of that survey are presented in this paper. The last recorded survey at this Institution was carried out 24 years ago, in 1956, by Bruce Rice and Richard Padley, soon after the opening of the training school. (1)

Size of Group and Method of Selection

Every child who attended the clinic for the six monthly examinations, was selected as a subject for this survey. This was done with the specific purpose of assessing their oral health status after a lapse of six months. As such only about 20 patients were available for examination, each day. The entire examination stretched out over a period of 10 weeks, from 25th. May to 10th. August 1980.

TABLE 1. NUMBER OF CHILDREN EXAMINED

AGE in years	MALE	FEMALE	TOTAL
4	13	7	20
5	33	32	65
6	61	64	125
7	60	80	140
8	61	64	125
9	65	55	120
10	67	73	140
11	59	66	125
12	49	51	100
13	27	18	45
All ages	495	510	1005

1. Dental Nurses Training School, Maharagama.

The above table shows the number of children examined by age and sex. Of all the children examined 50.75% were girls. A similar proportion of females (50.56%) exists among the registered total of 3762 patients attending the Childrens Clinic at this Institution.

Method of Examination and Type of Information Recorded

The survey methods and diagnostic criteria set out in the Basic Oral Health Survey Methods 1977 (2), were closely complied with. All the children were examined by the author (S. A.). The subject was made to sit on a wooden dental chair (New Zealand Type) and the examinations were done under natural light, supplemented by an overhead fluorescent lamp. Standard mouth mirrors and sickle probes were used for the examination. A student dental nurse recorded the observations directly onto a summary sheet. The following conditions from the WHO combined Oral Health and Treatment assessment form, were observed and recorded.

- (1) Age and sex
- (2) Disorders of mucosa, teeth and bone.
- (3) Periodontal status and treatment requirements.
- (4) Dentofacial anomalies.

(5) Dental caries status and treatment requirements.

The age of each patient was calculated and checked with the registered date of birth, as recorded on the treatment chart. The different age groups were recorded on separate summary sheets. After the initial recording of the demographic data, the mouth was examined for disorders of the mucosa, teeth and bone. Then a full mouth examination with the probe, to estimate the amount of soft deposits, calculus, intense gingivitis and advanced preiodontal disease was done. This was given special attention in order to evaluate the oral hygiene status of the child after six months. The presence and treatment requirements of dento-facial anomalies were then noted and finally each tooth was examined for caries past and present. The missing teeth were individually checked from the records, to ascertain whether the loss was due to caries or natural exfoliation. Records show the stages of each tooth, the extractions done and the presence of mobile teeth prior to exfoliation. Descriptions of filling done and to be done were also recorded. This was done with a view to finding out the type of surface affected by caries.

Dental Caries Status of Deciduous Teeth

As this survey was specifically carried out to evaluate the School Dental Service, in this region the results will be compared with that of 1956 (1), when this service was inaugurated.

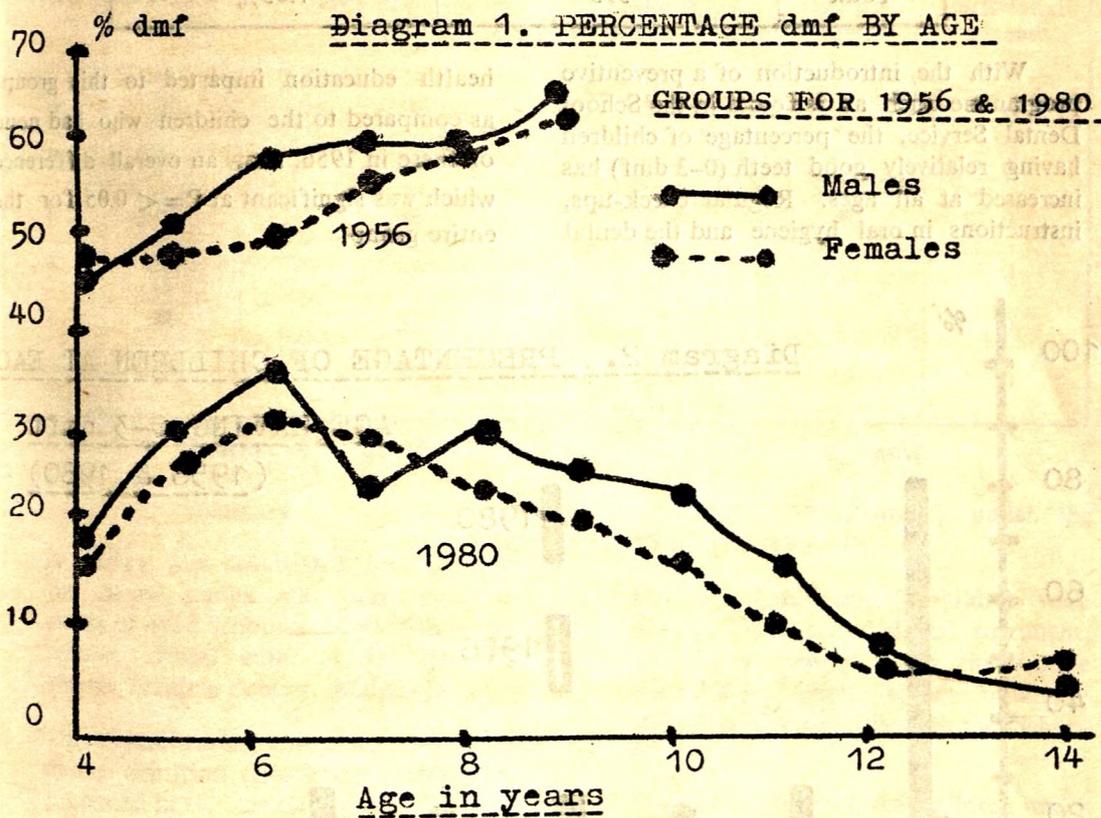
TABLE 2. DENTAL CARIES EXPERIENCE (dmft) IN DECIDUOUS TEETH. (Results compared to 1956 study)

AGE	MALE			FEMALE		
	1956	1980	P	1956	1980	P
4	9.4	3.2	0.002	9.8	3.4	0.001
5	10.3	6.5	0.02	9.6	5.7	0.001
6	10.5	8.1	0.02	8.9	7.2	0.075
7	8.9	5.7	0.02	7.9	7.0	0.10
8	7.6	7.0	0.75	7.1	5.5	0.65
9	7.4	6.1	0.40	6.0	5.2	0.65

The dental caries experience of the deciduous teeth was analysed for the number of dmf teeth per individual, by male and female within the age groups. The results of the two studies were then compared using the Chi-squared test. The reduction in the dmf among the boys was significant for the age groups 4, 5, 6, & 7. A similar observation was noted among the girls at 4 & 5 years of age. Over the last 25 years there has been an increase in sugar imported to the country, according to

statistics maintained by the Central Bank of Sri Lanka. In 1955 the sugar imports per capita was 32.6 lbs. and it had increased to 40.3 lbs. in 1979. In spite of this increase, the regular dental care given by the School Dental Nurse could probably be attributed to this difference.

The difference in dmf between the two studies, by age and sex, is graphically represented in Diagram 1.



Sound Dentitions

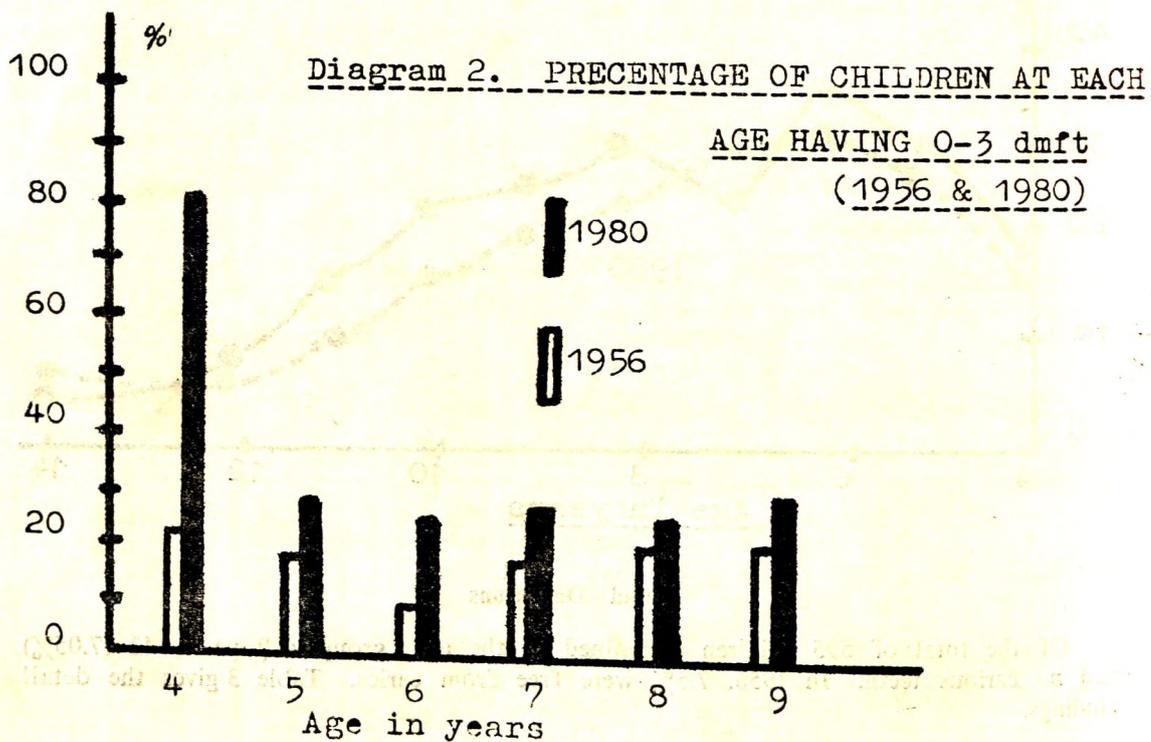
Of the total of 595 children examined in the age group 4-9 years, 42 (7.05%) had no carious teeth. In 1956, 7.5% were free from caries. Table 3 gives the detail findings.

Table 3. THE PERCENTAGE OF CHILDREN WITH SOUND DENTITIONS

AGE	No. examined	% caries free
4	20	30
5	65	4.6
6	125	8.0
7	140	7.9
8	125	4.0
9	120	5.8
Total	595	7.05%

With the introduction of a preventive programme such as is found in the School Dental Service, the percentage of children having relatively good teeth (0-3 dmft) has increased at all ages. Regular check-ups, instructions in oral hygiene and the dental

health education imparted to this group, as compared to the children who had none of these in 1956, show an overall difference which was significant at $P = < 0.05$ for the entire group.



Oral Hygiene Status

The Dental Nurse spends much of her time in giving chairside instructions in oral hygiene to the child and the guardian. Table 4. shows the Oral Hygiene Status of the children after a lapse of six months. The absence of soft deposits (good oral hygiene) decreased with age. The presence of calcified deposits, in one or more

segments increased with age. Most of these deposits were observed to be present in the lower (mandibular) central segment. Intense gingivitis and Periodontal disease was almost negligible for this group. These figures are very encouraging specially because toothbrushes and dentifrices are costly and therefore not within the reach of everyone in this country.

Table 4. ORAL HYGIENE STATUS ACCORDING TO AGE (expressed as a %)

AGE	No soft deposits	Presence of soft deposits*	Presence of Calculus*	Intense Gingivitis	Periodontal disease
4	80	20	0	0	0
5	60	40	5	1.5	0
6	52	48	6	0	0
7	44	56	9	0	0
8	49	51	13	0	0
9	48	52	22	2.5	0

* Presence of soft deposits or calculus in one or more segments.

Summary

1. A survey was conducted to ascertain the dental caries and oral hygiene status of 1005 school children obtaining regular dental care, at the Dental Nurses Training School, Maharagama.
2. The dental caries status of the deciduous dentition (age 4 to 9 years), was presented in this article.
3. The results of this survey were compared to a similar investigation carried out in 1956 by Bruce Rice and Padley soon after the opening of this training school, from aid given by the government of New Zealand, under the Colombo Plan.
4. In the previous study the children were not exposed to any dental treatment, but in the present study the sample was drawn from those obtaining regular dental care through the School Dental Service.
5. The mean dmf of the children under the care of the School Dental Nurse, was lower at all ages than those who had not obtained any dental care. The difference was significant for both sexes in the 4 & 5 year age group, & the 6 & 7 year old boys.

6. The number of children with no decayed teeth at all (7.05%) was similar to that in 1956 (7.5%).
7. But however, the percentage of children having relatively good teeth (0-3 d. m. f.) had increased significantly.
8. The dental caries and oral hygiene status of the children obtaining regular dental care, at the training school, Maharagama, has improved significantly over the past 25 years.

Acknowledgements

My sincere thanks, are due to Capt. W. D. N. Premasiri of the Sri Lanka Signal Corps for the statistical analysis of the data.

References:

1. Bruce Rice, F., and Padley Richard - Dental Caries experience of children at Maharagama, Ceylon. N. Z. Dent. J., 55, 5-14, (Jan) 1959.
2. Oral health Surveys - Basic Methods W. H. O. Geneva 1977.

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CEMENTIFYING FIBROMA – A CASE REPORT

N. A. de S. AMARATUNGA¹, F. D. S. R. C. S.

Cementifying fibroma, a rare odontogenic tumour, was at one time confused with certain fibro-osseous lesions. Its characteristic developmental pattern and clinical and histological features have now been recognised.

A young man presenting with a lump at the angle of the mandible was found to have a well demarcated radio-opaque mass. This proved to be an infected, mature cementifying fibroma.

Primary tumours arising in the jaws are either odontogenic or nonodontogenic. The odontogenic family of tumours have generated immense interest among oral pathologists and clinicians. The early confusion that surrounded these lesions have been cleared up to a great extent, and firm criteria for diagnosis have been agreed upon.

Cementifying fibroma is a rare odontogenic tumour. At one time it was confused with fibrous dysplasia and some other fibro-osseous lesions. Now it is considered to be a definite pathological entity, a neoplasm, with a characteristic developmental pattern and clinical and histological features.

Cementifying fibroma has its origin in the mesodermal component of odontogenic tissue and as the name implies has a fibrous component and a cementum component.

W. F. P. a twenty seven year old male presented with a lump in the right side of the lower jaw. He complained of a mild ache in the region and also of a slight discharge of pus into the mouth. These two symptoms had developed two weeks ago while the lump had been present for two years, increasing very slowly in size.

On examination a bony hard lump, round and smooth, measuring 3cm. X 2cm. was detected about 3cm. in front of the angle of the mandible in the right side. Overlying skin was normal and not attached to the lump. Sub-mandibular lymph nodes were tender and palpable. There was no paraesthesia of the lower lip in the affected side.

Intra orally the lingual sulcus was obliterated in the $\overline{765}$ region and the hard lump could be palpated. There was very little lingual expansion. $\overline{8765}$ were absent and the patient could account for two of these teeth which had been extracted six months ago when they became loose. On the alveolar ridge in $\overline{76}$ region a break in the mucosal covering was seen, through which sprouted reddish unhealthy granulations. On probing this area a cavity was discovered and the probe was felt to grate on something hard and rough.

The patient was admitted to the ward and was placed on an antibiotic. Radiographs were taken and routine blood and urine tests were carried out.

1. Senior Lecturer in Oral Surgery Dental School.



LATERAL OBLIQUE VIEW OF R/S OF MANDIBLE

X-ray revealed a large, extremely radiopaque mass occupying the area from 4/ to 8/ and almost the full depth of the mandible. Superiorly there was no bone covering the mass. Inferiorly it had a curved border and below it there was an unerupted molar tooth. Evidence of bone resorption, probably due to the infection, was seen around the mass. The texture of the radiodensity was similar to that of dentine or cementum.

Going purely by the x-ray appearance the lesion was thought to be either a composite odontome, or an odontogenic tumour with formation of cementum or dentine. The remote possibility of a central osteoma was also considered.

As the treatment of any of the above lesions is conservative excision, it was decided to remove the lesion when the infection was under control. After five days of antibiotic therapy the infection was brought under control and the lesion was removed under general anaesthesia. As the infection had caused resorption of bone, the mass could be elevated out without much difficulty. Primary closure was not possible due to lack of mucosa on top and also beca-

use it had been infected. The cavity was packed with bismuth iodide on gauze. Packs were changed every fifth day and the cavity filled up in about six weeks without complications.

Histology

Microscopic examination of the tumour revealed many interlacing collagen fibres with proliferating fibroblasts and irregularly round islands of cementum.

The clinical features and the histology were in conformity with the criteria laid down for diagnosis of cementifying fibroma.

Recurrence is very rare with conservative excision and radiographs taken six months after removal showed satisfactory regeneration of bone and no evidence of recurrence.

References:

1. Pindborg J. J. and Clausen F. - Classification of odontogenic tumours - Acta Odontol Scand. 16:293, 1958
2. Reyez J. A. et al - Odontogenic tumours - analysis of 706 cases. J. Oral. Surg. 36 (10) : 771 - 8 Oct. 1978

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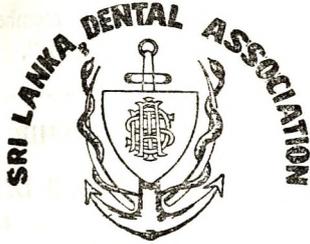
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ASSOCIATION NEWS 1980/81

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PRESIDENTIAL ADDRESS

The induction of the forty eighth year President of the Sri Lanka Dental Association, took place at the New Anatomy Lecture Theatre, Medical College, Colombo in September 1980. In his inaugural address Dr. M. P. P. de Silva emphasised the need for more endodontia in this country. He went on to say how the public as well as the profession, did not lay much emphasis on this aspect of dentistry. The patients disliked endodontia because of the repeated sittings associated with this type of treatment. The dentists were to be blamed for this he said. They did not make the patients sufficiently aware of the importance of conserving teeth, at the primary, secondary and tertiary levels.

He then mentioned some of the recent advances in Endodontia. One such was the Micro Mega Giromatic handpiece which has a rotational amplitude of 45°. This is a patented handpiece where special broaches and reamers could be attached for convenience, quickness and easy manoeuvring during root canal therapy.

The medicaments used in Endodontia were then touched upon. He said that every general dental practitioner should try to standardise his methods and medicaments to reduce the outlay on instruments and drugs. He appealed to the dentists to practise more endodontics and attempt perfection in the process.

Dr. de Silva advised the dentists not to limit their scopes to English and American

techniques, but to take note of the continental methods too. One such was the use of a drug called Nevvicid which devitalised the pulp and eliminated the need for local anaesthesia at every sitting. He then described treatment by mortal amputation, where pulpitis had not progressed to the radicular part.

Finally he advised the profession to practise endodontia in its varying forms, not confining treatment only to anterior teeth. His talk he hoped would be of some benefit to the profession and through them to the public.

CENTENARY CELEBRATIONS OF THE BRITISH DENTAL ASSOCIATION

Dr. W. G. Wimaladharmasiri and Dr. L. S. W. Dassanayake represented the Sri Lanka Dental Association at the centenary celebrations of the British Dental Association, held at the Royal Festival Hall, London in July 1980.

CIBA SYMPOSIUM

During the same visit Dr. L. S. W. Dassanayake was invited to read a paper at a guest symposium of the CIBA foundation. His paper related to Primary Health Care was on "Identifying appropriate techniques from case studies in developing countries and experiences learnt from Primary Dental Care in Sri Lanka".

APICAL DISEASE

At a lecture meeting held on 20th December 1980 Dr. Donald Winstock M. B. B. S., B. D. S., F. D. S. R. C. S., M. R. C. S., L. R. C. P., Consultant Oral Surgeon, Middlesex Hospital, Barts and Edgeware General Hospitals, Senior Lecturer and

Consultant Oral Surgeon, Royal Dental Hospital, London, spoke to the members of the Association on "Apical Disease".

BRITISH COUNCIL SPONSORSHIP

Prof. C. P. Adams M. D. S., B. D. S., F. D. S. D. Orth. R. C. S. Professor and Head of the Department of Orthodontics, Queens University of Belfast, Northern Ireland, visited Sri Lanka in February 1981, on a three week lecture demonstration programme. His visit was sponsored by the British Council. During his stay he gave a number of talks on the aetiology, diagnosis and treatment planning of Oral conditions requiring Orthodontic treatment and the design construction and relative merits of removable and fixed appliances. He also held many clinical sessions with the Hospital Staff and General Dental Practitioners, at the Colombo and Jaffna General Hospitals. His tour ended with a one day Post Graduate Course in Orthodontics, which terminated with a grand farewell lunch, sponsored by Chemical Industries Ceylon Ltd., at the Hotel Sapphire.

CEYLON BUREAU OF STANDARDS

The council nominated the names of Dr. L. S. W. Dassanayake to serve on the "Toothpaste Drafting Committee" and Dr. (Mrs.) Siromani Abayaratna to serve on the "Toothpowder Drafting Committee", of the Ceylon Bureau of Standards.

COMMONWEALTH GRANT OF £ 500

A commonwealth grant of £ 500 was made available to the Sri Lanka Dental Association, for purchase of books from Blackwells, United Kingdom. The more recent editions of the well known Dental Text Books, can now be obtained from this library. Members are invited to make use of this facility.

EDITORIAL NOTICES

The Sri Lanka Dental Journal is the official annual publication of the Sri Lanka Dental Association. The Editor invites original articles, research papers, clinical reports and review papers for publication in the Sri Lanka Dental Journal. All manuscripts are subject to editorial modification and when accepted become the property of the Journal. All papers will be referred to a panel appointed by the council of the Sri Lanka Dental Association. Manuscripts not conforming to the standard requirements will be rejected. Once published, the article should not be reprinted without permission from the Editor.

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Illustrations: Illustrations accompanying the manuscript should carry the word "top" and a number corresponding to the figure number in the text.

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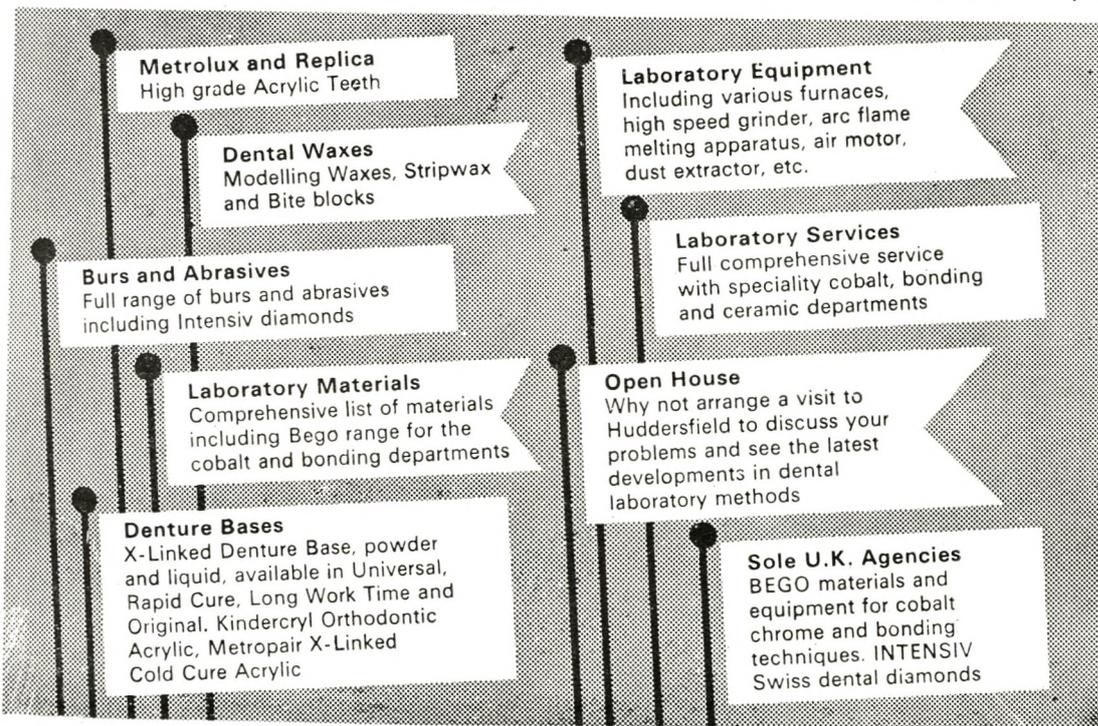
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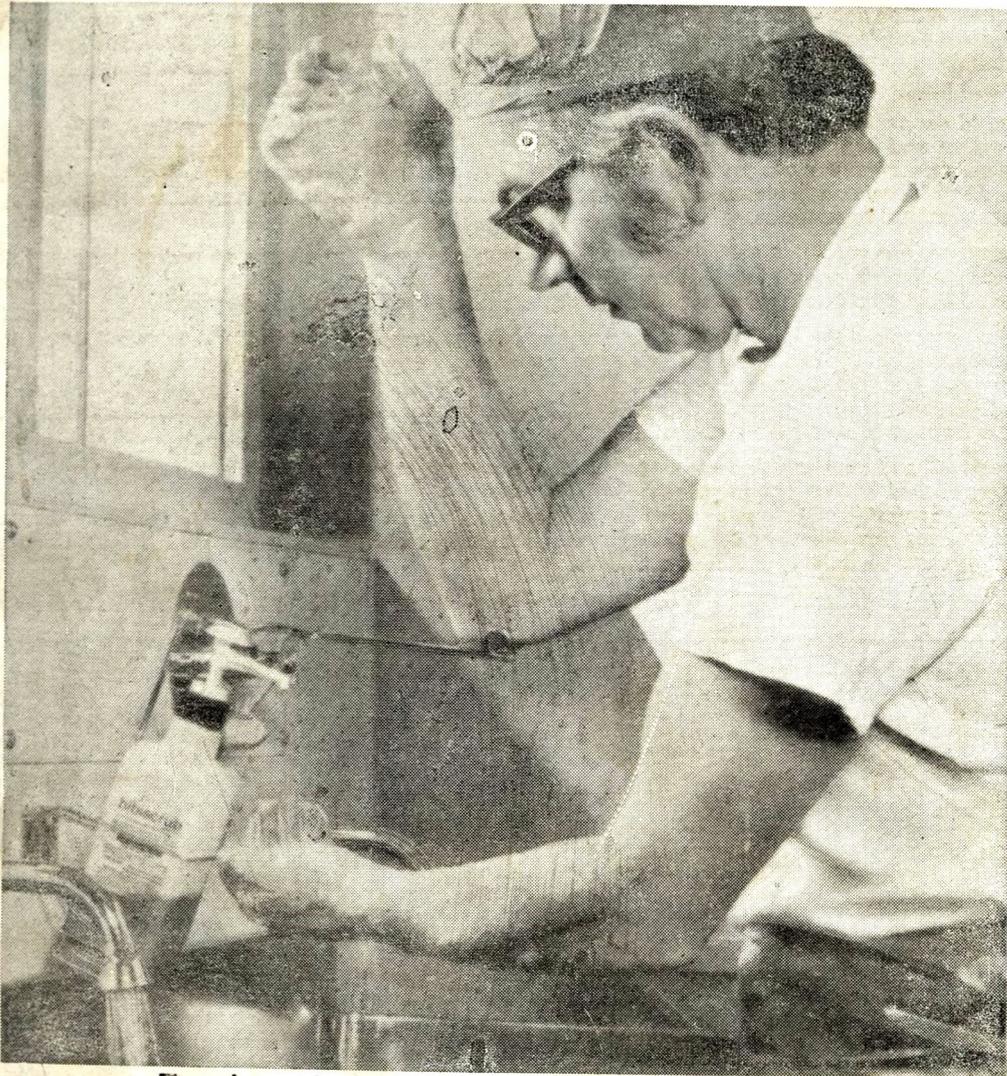
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