



CEYLON DENTAL JOURNAL

VOLUME 7

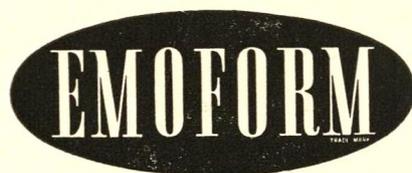
DECEMBER 1976

THE JOURNAL OF THE CEYLON DENTAL ASSOCIATION
SRI LANKA

S.L.D.A.
LIBRARY
SRI LANKA DENTAL ASSOCIATION
Professional Centre,
275/5, Baudhaloka Mawatha,
Colombo 7,
SRI-LANKA.

For **Sensitive Teeth**

*If your teeth are hurt by hot or cold
food and drink or by brushing —
you need Emoform*



Medicated Toothpaste

Manufactured by :-

**Pharmaceutical Manufacturing Co.,
Westhoughton, Bolton,
England.**

Sole Agents :-

SCIENCE HOUSE (CEYLON) LTD.

MUNSOOR BUILDING,
53 1/5, MAIN STREET,
P. O. BOX 1391,
COLOMBO.

T'Phone } 27106
 } 24017

CEYLON DENTAL JOURNAL

THE JOURNAL OF
THE CEYLON DENTAL
ASSOCIATION



127, GALLE ROAD,
COLOMBO 6.

VOLUME 7 DECEMBER, 1976.

CEYLON DENTAL JOURNAL

Editor

SIRILAL A. SILVA
L.D.S. (Cey.)

Honorary Scientific Adviser

K. H. T. DE SILVA
L.D.S. (Cey.), F.D.S.R.C.S. (Glas.)

Published annually for the Ceylon Dental Association. All opinions and statements are published on the authority of the author under whose name they appear and are not the views of the Association.

CEYLON DENTAL ASSOCIATION

Honorary Office Bearers for 1976/77

President

K. H. T. DE SILVA
L.D.S. (Cey.), F.D.S.R.C.S. (Glas.)

Vice-President

M. W. KARUNAJEWA
L.D.S. (Cey.)

Hony. Secretary

L. S. W. DASSANAYAKE
L.D.S. (Cey.)

Hony. Treasurer

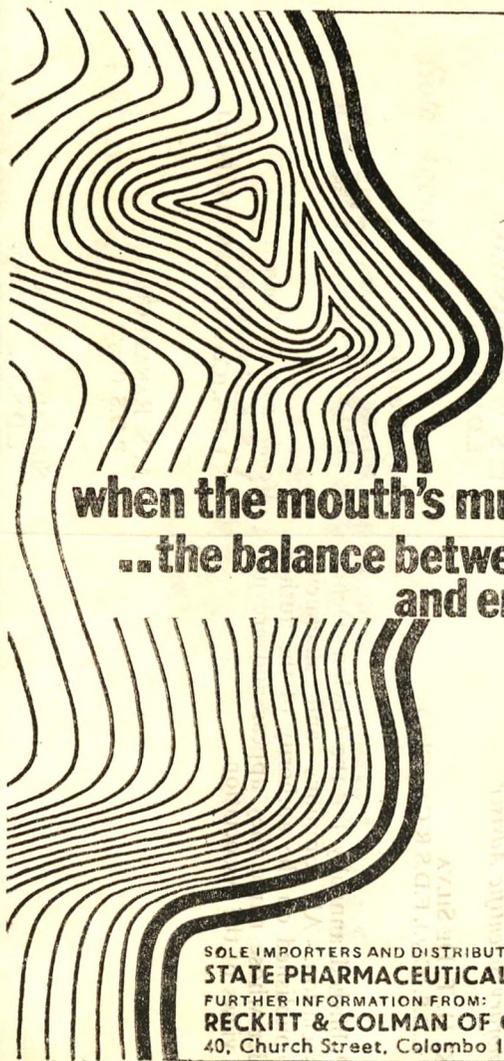
HILARION COORAY
B.D.S. (Cey.)

Members of the Council

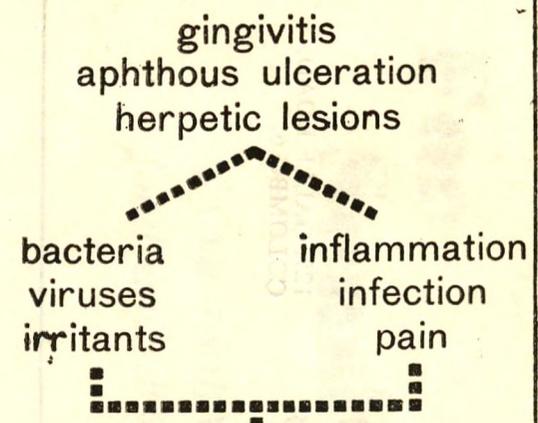
V. S. KARUNAGARAN
L.D.S. (Cey.), F.D.S.R.C.S. (Edin.)

A. S. RANASINGHE
B.D.S. (Cey.)

SIRILAL A. SILVA
L.D.S. (Cey.), Editor



**when the mouth's mucosal barrier is breached
..the balance between oral tissues
and environment is disturbed....**



bonjela's

anti-inflammatory anti-infective
analgesic astringent
actions

help to restore the balance

SOLE IMPORTERS AND DISTRIBUTORS:
STATE PHARMACEUTICALS CORPORATION OF SRI LANKA
FURTHER INFORMATION FROM:
RECKITT & COLMAN OF CEYLON LTD.
40, Church Street, Colombo 1.

TAL - 3643

Contents

	PAGE
Editorial	
The Oral Health of the Nation	1
Root Canal Treatment of Molar Teeth Deepthi Abeyseriya, B.D.S. (Cey.) D. Y. D. Samarawickrema, B.D.S. (Cey.), Ph.D.	3
The Mandibular Third Molar — Pre-surgical Radiographic Assessment I. G. Premadasa, B.D.S. (Cey.)	9
Acupuncture in Oral Disorders Sirilal A. Silva, L.D.S. (Cey.), M.Ac. A. (Sri Lanka)	17
Dental Care of Physically and Mentally Handicapped Children R. Goonetilleke, B.D.S. (Cey.), F.D.S.R.C.S. (Edin.) F.D.S.R.C.S. (Eng.)	23
New Members	27
Deaths	27
Future Meetings	28

3M DENTAL PRODUCTS

used with confidence

WORLD WIDE

- CONCISE BRAND COMPOSITE MIX SYSTEM
- CONCISE BRAND ENAMEL BOND SYSTEM
- CONCISE BRAND COMPOSITE AND ENAMEL BOND SYSTEM
- CONCISE BRAND COMPOSITE ACCESSORY KIT
- CONCISE BRAND COMPOSITE CAP-C-RYNGE SYSTEM
- 3M BRAND MATRIX TAPE *and* DISPENSER
- 3M BRAND DENTAL FINISHING *and* POLISHING SYSTEM
- 3M BRAND DENTAL FINISHING *and* POLISHING DISCS
- 3M BRAND DENTAL FINISHING *and* POLISHING STRIPS
- 3M BRAND HYGIENIST CLEANING *and* POLISHING STRIPS
- 3M BRAND COMPOSITE FINISHING *and* POLISHING PASTE
- 3M BRAND COMPOSITE PLACEMENT INSTRUMENTS

**literature and further particulars please apply
to sole agents.**

THE CENTRAL MEDICAL STORES LTD.

73, MAIN STREET, COLOMBO II.

CEYLON DENTAL JOURNAL

VOLUME 7

THE ORAL HEALTH OF THE NATION

A little more than a decade ago, the qualified dental surgeons were only a handful and extraction of teeth was the order of the day specially in the public sector. This was primarily because most people lacked a dental consciousness and presented themselves at the clinics far too late for any conservative treatment, and secondly because the overcrowded clinics left the dental surgeon with hardly anytime for conservative treatment. It is a different story today, though we are still far short of personnel by any reasonable standard. Today the average town patient is far more dental conscious and there is a greater demand for more sophisticated treatment. Moreover we have a large trained ancillary staff to cater to the needs of the school children. The rural population is still a neglected lot.

We must organise an effective health education campaign. Not only should the masses be taught how to maintain good oral hygiene but they should also be educated on the damage caused to the tissues by the use of certain dentrifices.

We are woefully short of manpower in the rural areas, specially in the private sector. We should agitate to obtain better working facilities and living conditions for the government dental surgeons working in these areas. The paucity of available foreign exchange and additional FEECS has resulted in the prohibitive cost of new equipment preventing many a young dental surgeon starting a new practice. The nett result is that the unqualified and unregistered quack is having a flourishing practice mostly in the rural areas. The available machinery to eliminate quackery is totally inadequate. The profession has to join hands with the other professions and show the government of the day the necessity to eradicate this menace. But it must be realised that as long as we are short of personnel and unless we strive to maintain

a very high standard of work and avoid any malpractice no amount of legislation will help.

The profession should mobilise the qualified ancillaries and other public health personnel to promote oral health education. Periodic examination is a must. The public health personnel in rural areas should be trained to detect caries and early precancerous lesions. The large extent of the lesion when the patient is first seen is the main cause for the poor prognosis of oral cancer. The school dental service at present is completely isolated from the dental personnel in the government hospitals. Unless a liaison is established and a proper follow-up is maintained after the age of twelve, the school dental service will not achieve its purpose.

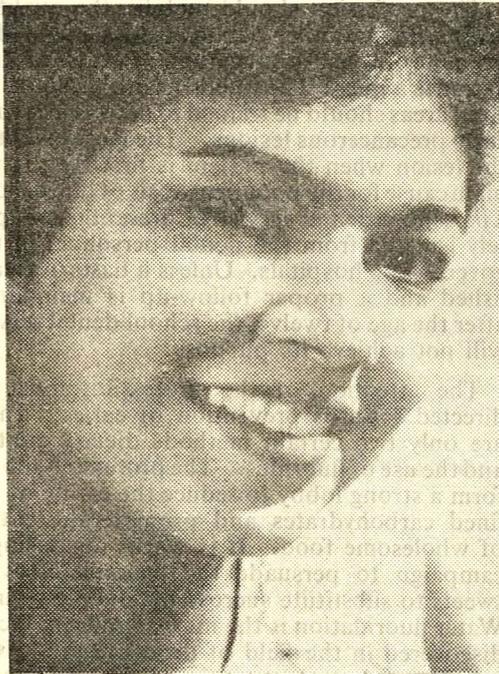
The attention of the profession must be directed towards prevention of caries. There are only two certain methods dietary control and the use of fluorides. The profession should form a strong lobby to reduce the eating of refined carbohydrates and promote the eating of wholesome food. It is worth organising a campaign to persuade the manufacturers of sweets to substitute sucrose by glucose syrups. Water fluoridation is the most significant factor discovered in the field of dental health. It is our duty to draw the attention of the government to the fact that though the initial cost is higher, the fluoridation of water is much cheaper and far more effective than the topical application of fluorides.

Another matter of grave concern to the profession is the flourishing trade in injurious and abrasive dentrifices and toxic medicaments which are even advertised over the state owned media. Public opinion must be created to demand a proper system of standards.

The profession must rise above petty differences and unitedly strive to give a better service to the nation. No doubt it will take many years to effect an overall improvement through organised oral health education.

**Take good care of your teeth
Your teeth will take good care of your health**

TEK takes good care of your teeth



Neglect of teeth not only brings pain and discomfort, but is also detrimental to your health.

Take good care of your teeth with a good toothbrush - TEK.

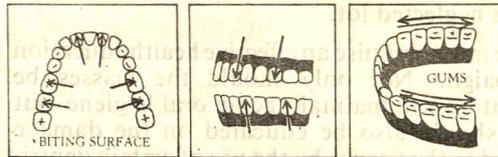
Brushing with TEK protects your teeth. Keeps them white and sparkling.

TEK cleans your teeth by brushing away food particles effectively.

TEK toothbrushes are made from the finest nylon bristles and come in a variety of pleasing colours.

TEK toothbrushes are available in Soft, Medium and Hard grades.

For children, there is the TEK junior.



Brush your teeth from the gums to the edge.
Do not brush upwards as this tends to damage the gums.



Johnson & Johnson

Sole Distributors: **CHEMICAL INDUSTRIES (COLOMBO) LTD.**
Hemas Building, Colombo 1.

GRANT K & E

ROOT CANAL TREATMENT OF MOLAR TEETH

Deepthi Abeysuriya, B.D.S. (Cey.), D. Y. D. Samarawickrema, B.D.S. (Cey.), Ph.D.

Dept. of Conservative Orthodontics and Children's Dentistry, Dental School, University of Sri Lanka.

Root canal treatment of Molar teeth present difficulties not encountered in anterior teeth and therefore not much treatment of such teeth is done in Sri Lanka. Contrary to popular belief the success rate of molar endodontics is as high as that of anteriors in our experience. It is hoped that this article will give a brief summary of the stages in root canal treatment of molar teeth and will give an idea of the handling of difficulties commonly encountered.

Case Selection

In selecting a tooth for treatment certain conditions should be met. The general health of the patient is an important factor in this decision between endodontics and extraction. If the patient has for instance haemorrhagic disease, to do endodontic treatment and save the tooth is a good reason. Then again the oral hygiene of the patient should be good. Also if the tooth concerned is of strategic importance in maintaining the arch it should be spared.

The periapical condition of the tooth is of vital importance in case selection. If the patient presents with acute inflammation the success of treatment is in doubt due to the fact that it is difficult to obtain drainage through the narrow bore of the root canals of the molars. If the abscess can be drained by incision of the soft tissues overlying the apex it is alright. Otherwise systemic administration of antibiotics will have to be resorted to, to reduce the acute condition sufficiently to permit root canal therapy.

The amount of working room available is another factor which plays in case selection. The extent to which the patient can open his mouth is important and the patient should be able to keep his mouth open for the major part of each session of treatment. The patient should be able to open his mouth wide enough to introduce reamers and files into the root canals. But a forward tilt of the tooth will compensate for this as it brings the inaccessible canals such as the mesiobuccal in an upper

molar or the mesial in a lower molar to a more favourable position. Also the loss of the opposing tooth gives more working room. A preoperative radiograph will give a good idea as to how much difficulty these canals will present.

The other factor that has to be considered is the angle of the coronal part of the canal. The palatal and distobuccal canals in the maxillary molars present little difficulty since their coronal ends incline forwards. Therefore instruments can be inserted into them from mesial aspect. The mesiobuccal canal often inclines backwards therefore instruments have to be inserted from the distal forwards. Also due to the narrowness and curvature it is a problem.

A preoperative radiograph is very essential in assessing whether a tooth can be taken on for treatment. Not only does this help in assessing the canal lengths but it helps in seeing whether the canals are negotiable, if there is a curvature in the canal, or whether there are two canals. This can be verified by taking two x-rays, one being taken with the x-ray tube angulated more distally. The feasibility of treatment will be decided mostly from x-rays. Another factor which is important is whether the tooth in question could be sufficiently restored to its anatomical form after endodontic treatment.

Anaesthesia of the Tooth

The tooth that is being treated should be isolated by a rubber dam. This is absolutely essential. This enables work to be done soon and prevents salivary contamination. If the tooth concerned is badly broken an unannealed copper band is cemented onto the tooth. This ensures sufficient rigidity. The Band should extend into the gingival crevice. If the band is not stable the tooth posterior to this should be clamped and the banded tooth ligated. If extra working space is needed on putting the rubber dam to a tooth again the posterior tooth to that being treated is clamped and the tooth in question ligated.

Local anaesthesia should be employed at each visit until all the remnants of the pulp are removed. Even if the tooth seems non-vital sometimes one canal may be non-vital while the other remains vital. Even when most of the pulp has been removed, at subsequent visits there may be pain if no anaesthesia is used due to the fact that remnants of pulp are present.

A Deep anaesthesia is necessary, therefore a nerve block in the case of lower molars and local infiltrations of subperiosteal variety in upper molars should be used. Where infiltrations are used anaesthetic solution should be deposited over the apex and a few mms. on either side of the apices. Still sometimes some sensitivity is present on removing the roof of the pulp chamber. In these cases a small quantity of anaesthetic solution is injected into the pulp chamber, the risk of driving peripherally any organisms have to be accepted as otherwise the patient will be uncomfortable.

Access

On opening into the pulp chamber of a molar tooth the bur should be directed to the largest canal — the palatal in a maxillary molar and the distal in a mandibular molar. This prevents the bur from going too deep and damaging the floor of the pulp chamber. The location of the pulp chamber for instance in the crown of a molar tooth is sometimes not clearly visualised. It is placed much deeper than is commonly imagined and a transverse section through the middle of the crown will usually just expose the pulp horns.

The roof of the pulp chamber should be removed and the aim is to open the pulp chamber to its fullest extent but to leave the walls and the floor of the chamber undisturbed. The depth of penetration is very important. A round bur in a standard, contra-angle handpiece measures 10 mms. from the cutting tip to its point of emergence from the hand piece; while the average level of the roof of the pulp chamber in posterior teeth is 7mm from the peak of a cusp. This is a useful guide which reduces the risk of damaging the floor of the pulp.

The form of the opening cut on the occlusal surface depends on the anatomy of the pulp chamber and this is related to the position of the opening of the root canals into the chamber.

In a premolar it has to be opened in the central pit and then widened buccally and palatally. In the case of an upper 1st premolar both canals are found close together leading in from the floor of the pulp chamber. The palatal canal can be easily seen and sometimes when the buccal canal is not to be seen, when the canal that is obtained first is widened the buccal canal is also found.

The mesio-distal width in the occlusal opening of a maxillary molar is generally greater buccally than palatally and in a mandibular molar the buccolingual width mesially is greater than distally.

Before preparing the occlusal cavity on the tooth an antiseptic should be applied. Then an occlusal cavity is prepared first directing the bur to the widest canal. One the pulp chamber

Anaesthesia of the Tooth

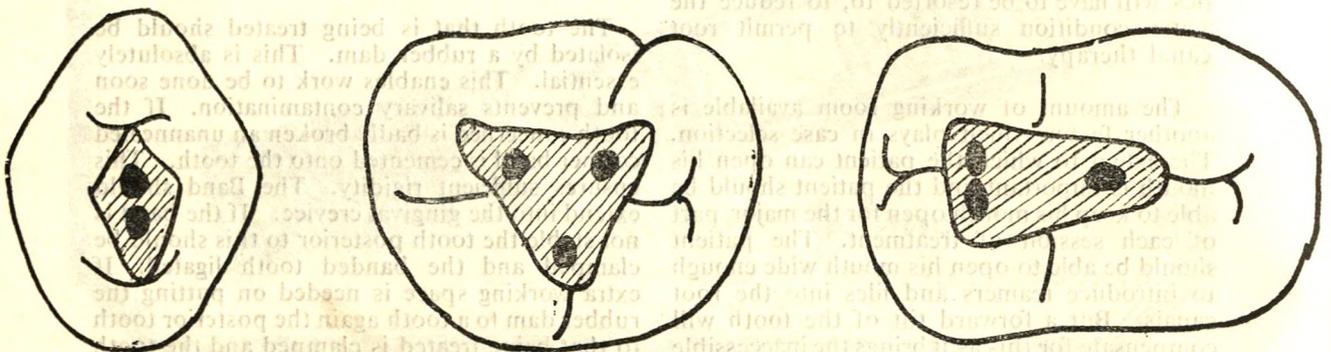


FIG. 1

is reached the rest of the roof of the pulp chamber is removed with a bur which is placed below the ledge of dentine forming the roof. From this place the bur is dragged up, thus cutting the dentine ridge. This prevents unwittingly going through the bifurcation of the tooth in trying to open the pulp chamber.

The base of the pulp chamber has a dull grey colour. The entire coronal pulp is removed with excavators once the roof of the chamber is opened. Then only the characteristic dull grey floor can be seen. At the orifices of the root canals the floor dips into them.

If access to the mesial canal in a mandibular molar is not adequate the opening will have to be extended more mesially.

When the coronal pulp has been removed and the pulp chamber cleaned with pledgets of cottonwool dipped in saline, the opening into the root canals are clearly seen. Before going into the canals the floor of the pulp chamber is cleansed with sodium hypochlorite. In the wider canals the pulp can be extirpated with a Barbed Broach. The length of the canals at this stage is obtained roughly from preoperative radiographs. The instruments are not allowed to pass beyond a level 2 — 3 mms. short of the root apex. This prevents forcing in of necrotic material into the periapical areas. Into the mesial canals a fine reamer or file no. 1 can be introduced to remove the pulp. If at this stage the patient feels pain a few drops of anaesthetic solution are put into the canals.

Measuring the canal lengths

First the canal length is measured roughly by preoperative radiographs. A reamer is then introduced into the canals of the tooth about 2 mms. short of the apex. Then a radiograph is taken and the known length of the reamer is added to the length that is short from the apex. If the tooth is an upper premolar where there are two canals the tube has to be shifted slightly mesially or distally to obtain the apex of both canals. When the film has been exposed the position of the reamers are checked to see whether they have moved.

Kuttler (1955) demonstrated that in the mature teeth continual deposition of cementum inlined the apical foramen, usually distally, and caused a slight increase in its diameter. Thus there is in mature teeth a constriction of the

dentino enamel junction which is just short of the apex and dividing the pulp tissue from the surrounding supporting tissue. Also the knowledge that the principal foramen of the canal may not open directly at the apex of the root tip is important.

For this reason, an instrument or filling point which appeared in x-ray at the apex of the tooth would in fact be in the periodontal membrane. Thus the tooth has to be reamed and subsequently filled upto the constriction — the apical stop — and this is most likely to be achieved when the filling appears just short of the apex.

The first visit of the patient should not take very long. Only the cleansing of the pulp chamber, removal of part of the radicular pulp and assessment of the lengths of the canals is done. Then a pledget of cotton wool dipped in camphorated Mono Chlorophenol is placed in the cavity and a zinc oxide Eugenol dressing placed to seal the cavity.

Cleaning the Canals

During cleansing it is of advantage to put a drop of sodium hypochlorite solution ; also some advise dipping reamers in this solution. This enhances the cutting action of the reamers and also reduces the risk of organisms reaching the apex.

If a canal is difficult to be negotiated a chelating agent such as Ethylene Diamine Tetra Acetic acid (EDTA) may prove useful. This decalcifies dentine by combining with the Ca ions thus helping instrumentation.

The wider canals can generally be reamed upto no : 5 reamers while the mesial canals can be reamed only upto about no : 3.

Average Length of Canals.

	Upper teeth	Lower teeth
1st premolar	20.5	21.5
2nd premolar	21.5	22.0
1st molar	20.5	21.0
2nd molar	20.0	20.0
3rd molar	17.0	18.5

Adapted from G. V. Black

Care should be taken not to insert instruments beyond the root apex. This is prevented by passing the instrument through a small rubber disc which is adjusted to the required level and reaming only upto that.

A sharp curve in a root canal is negotiated by bending the reamer slightly a few mms. from the cutting edge prior to putting it into the canal. Always reamers should be used in a strict numerological order.

Reaming is sufficient when fresh white dentinal fillings are obtained. Cleansing is completed by irrigating each canal to eliminate dentinal shavings. This is done with Sodium Hypochlorite solution and then again with Hydrogen Peroxide. The effervescence due to the liberation of nascent oxygen and chlorine helps in elimination of debris. The final irrigation should be with saline.

After completion of irrigation the pulp cavity is dried and then a dressing is placed. The drug that is generally used here is Camphorated Mono Chlorophenol and as it is in liquid form it is applied by moistening paper points already placed in the canal. Some canals are too narrow to allow the insertion of paper points and then a pledget of cotton wool dipped in this is placed over the floor of the pulp chamber. Now the entrance to the pulp chamber is sealed with Zinc oxide Eugenol. Dressings have to be changed every three days. In the absence of facilities for bacteriological evidence three clear dressings have to be obtained prior to filling the root canal. If Poly antibiotic paste of Grossman (1951) is used dressings need to be changed only once a week and it is thought that only two dressings are required. Grossman's paste contains Penicillin, Bacitracin, Streptomycin.

Filling the Root Canals

Before filling the root canals it should be properly cleaned of dressing etc. Then it is dried and first the canal which is least accessible is filled. Prior to this the other canals are blocked with paper points. A Silver point is used for the finer canals as Gutta percha tends to kink when used for finer canals and those with a curvature. When a correct silver point has been obtained which goes to the estimated length, an x-ray with the trial cone should be taken first. The silver point is cut at the level

of the crown. Then it is coated with cement and it is inserted into the canal slowly to ensure that excess cement is not thrust into the periapical region.

Mesial canals of molars are sometimes different to this as they are wider bucco-lingually at the coronal end. In these cases a silver point is used and then short gutta percha points are used to provide adequate lateral condensation to the filling.

Other wider canals are also filled in this way or else a sectional root filling method is used. In this, a silver point that is of the correct length is chosen. On this a groove is cut deep at a suitable distance from the tip, usually 4—5mms. Then the terminal portion of the silver point is lightly covered with oxyphosphate cement. The point is now inserted to the apex. After 2—3 minutes have elapsed for the cement to set the end of the silver point protruding out occlusally is given two or three complete rotations and removed leaving the apical part in the root canal. The remainder of the canal is then filled with Gutta percha. This method is used also when a post crown is needed for the tooth. Gutta percha points are cut close to the floor of the pulp. Silver points if used with oxyphosphate cement may be bent over onto the base of the pulp chamber or else it can be cut with a large bur level with the root canal.

The success rate of molars is high like in anterior teeth in endodontic treatment. Even when there is a periapical lesion of long standing, repair can occur. As a general rule, a two year period of observation of treated pulpless teeth is adequate. A series of radiographs taken every six months is useful in assessing the post operative course. For a periapex to be classed as radiographically normal, the presence of an obvious lamina dura is not necessary provided that a distinct periodontal space of even width may be traced around the root end.

References

Ivan Curson. — BDJ. (1966) Vol. 121

E. Nicholls — Dental Practitioner (1963) Vol. XIII
Molar Endodontics - Anglo Continental Dental Society (1969)

1958 Dental Practitioner, 8, 241

Kuttler Y. — 1955 J. American Dental Assn.
50,544

Our Answer

to tooth decay, bad breath, bleeding gums.

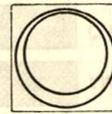
For the first time the proven efficacy of centuries-old ayurvedic herbal formulae has been combined with modern scientific technology to produce an outstanding

dentifrice — Dimuthu, the only pure herbal tooth-powder which foams, is pleasantly-flavoured cleans teeth pearly-white, sweetens the breath and strengthens the gums

Dimuthu

The modern herbal Dentifrice.

A quality Lankem product



No mess, easy-to-use swivel-top dispenser!



මාමඩිය දත්කුඩ
 දත් මපලයි.
 විදර්මය පවිමන් කරයි.
 මුඛ ප්‍රවේද දෙවයි.

Vibramycin* doxycycline

has closed the g-a-p-s
left by other antibiotics

assurance of broad antimicrobial coverage

MORE VALUE FOR YOUR PATIENTS MONEY BECAUSE...

95% **Vibramycin*
doxycycline**

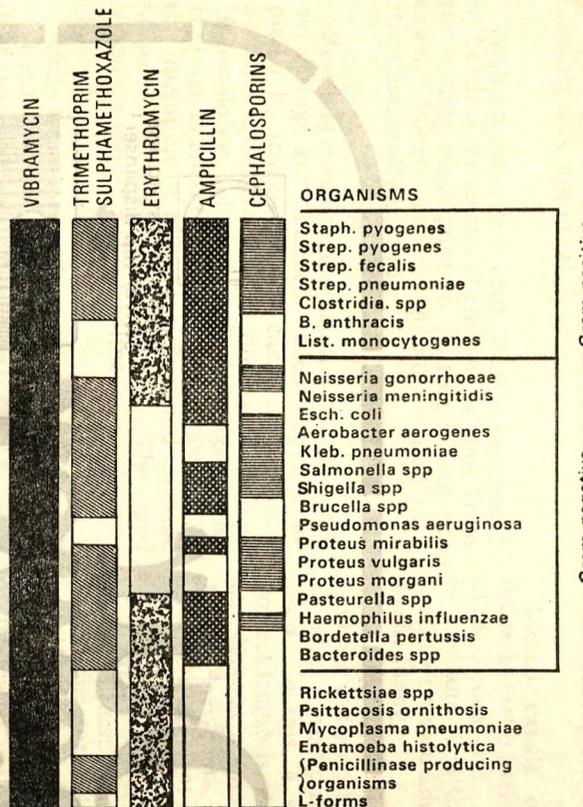
goes into the blood
to DESTROY bacterial
cell metabolism

**Vibramycin*
doxycycline**

- causes abnormality in cell wall
- disrupts binary fission
- deranges new cell wall formation
- disrupts bacterioplasm
and offers these benefits

covers more organisms ● complete and rapid absorption
rapid and high blood levels ● high tissue concentration
once-a-day dosage

*Trademark



Some strains of all
species can be resistant

DOSAGE: Adults: The usual dose of Vibramycin is 200 mg on the first day of treatment (administered 100 mg every 12 hours) followed by a maintenance dose of 100 mg/day. In the management of more severe infections 100 mg every 12 hours is recommended.
Children: The recommended dosage schedule for children is 2 mg/lb of body weight divided into two doses on the first day of treatment, followed by 1 mg/lb. of body weight given as a single dose or divided into two doses, on subsequent days. For more severe infections up to 2 mg/lb. of body weight may be used.

Supply: Available in packs of 25 and 100 capsules and 30 ml syrup.

Pfizer

SCIENCE FOR THE WORLD'S WELL-BEING

THE MANDIBULAR THIRD MOLAR PRE-SURGICAL RADIOGRAPHIC ASSESSMENT

I. G. PREMADASA, B.D.S. (Cey.), *Dept. of Oral Surgery, Dental School, University of Sri Lanka*

The mandibular third molar is the tooth seen to be most commonly impacted^{1,2,3}. Though an impacted tooth need not necessarily give rise to symptoms and signs, it is common to find patients developing symptoms for which extraction of the tooth is required. The pre-operative clinical assessment can be greatly supplemented by the use of the radiograph and it is a sound approach to obtain the necessary films before surgery is contemplated.

For investigation of the mandibular third molar the following radiographs are needed:—

- a. Peri-apical view,
- b. Occlusal view,
- c. Lateral oblique view of the region of the angle of the mandible.

In situations of scarcity of X-ray films and even when the third molar is normally erupted but requires extraction, we may dispense with extra oral and occlusal views. However, when the mandibular third molar is partly erupted or fully buried, at least a peri-apical view is obligatory. An occlusal view is important to show the bucco-lingual positioning of the tooth in the dental arch and any lingual or buccal rotation of the crown in the latter case. For the occlusal view a standard intraoral film is sufficient as only a small area of tissue has to be included. When the tooth occupies an aberrant position, it may not be seen in the intraoral x-ray. A lateral oblique view would show its position but, for a detailed picture of the tooth and surrounding tissue this should be supplemented with a peri-apical film, after the position of the impacted tooth is obtained from the former.

Positioning of the film

In taking an intraoral x-ray of the mandibular third molar it is important to place the film so that the apical region of the tooth with the mandibular canal, the area of bone distal to the tooth and the second molar are included in the x-ray. A common fault that occurs is as a result of a film that had not been placed deep enough in the lingual sulcus and not far back along the angle of the mandible. This leads to an x-ray which does not include the apical region of the root and the bone distal to the

tooth. One of the commonest reasons leading to this error is that the patient starts retching when the film touches the sensitive anterior pillar of the fauces and the lingual sulcus. It may also arise when the patient tenses the floor of the mouth making it difficult for the operator to place the film in the required manner. The latter problem may be overcome by explaining to the patient the necessity of having the floor of the mouth relaxed for positioning the film. The application of a local anaesthetic jelly on the area that comes in contact with the film may help in overcoming the retching reflex. Alternatively, the jelly may be applied on the film packet on the side that comes in contact with the tissues. A lateral oblique view may be considered failing the above measures.

To include the required area in the film, it should be positioned so that the anterior edge of the film does not come in front of the mesial edge of the second molar and the upper edge of the tooth does not lie above the occlusal plane of the molar teeth (Fig. 1). For the occlusal view, the standard intraoral film is positioned as far back as possible on the occlusal surface of the teeth on the side in question and the x-ray beam directed from below at right angles to the film packet. (Fig. 2).

Examination of the radiograph

With a properly positioned x-ray film that has been correctly processed, a great deal of information can be obtained.

1. The angulation and the position of the impacted tooth.

An estimation of the angulation between the long axis of the third molar and that of the second molar enables one to arrive at a classification of impacted third molars. Thus mesioangular, horizontal, vertical and distoangular impactions could be determined. An examination of the occlusal film would show whether the third molar is positioned distolingual or distobuccal to the second molar. The crown of the third molar may face the lingual or the buccal aspect giving rise to a linguo- or bucco-version of the tooth and would be seen end on the peri-apical view (Fig. 3).

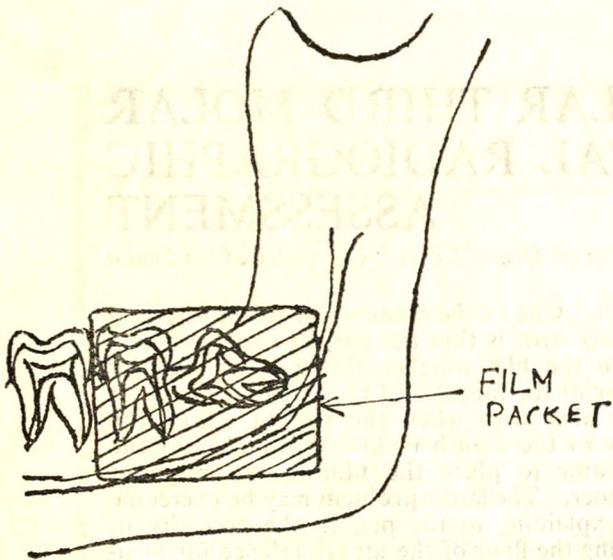


FIG. 1

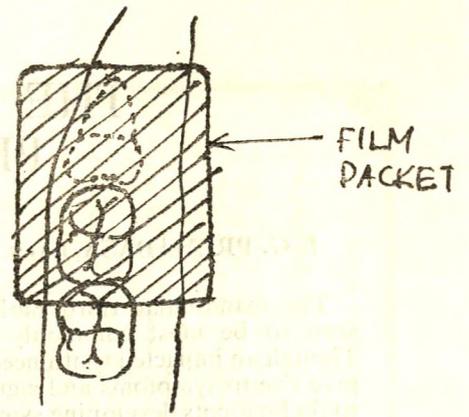


FIG. 2

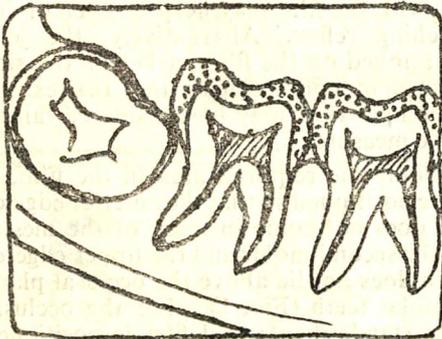


FIG. 3

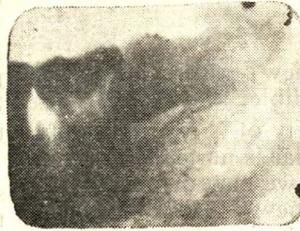


FIG. 4

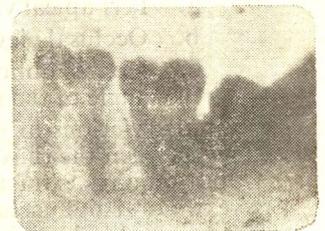


FIG. 5

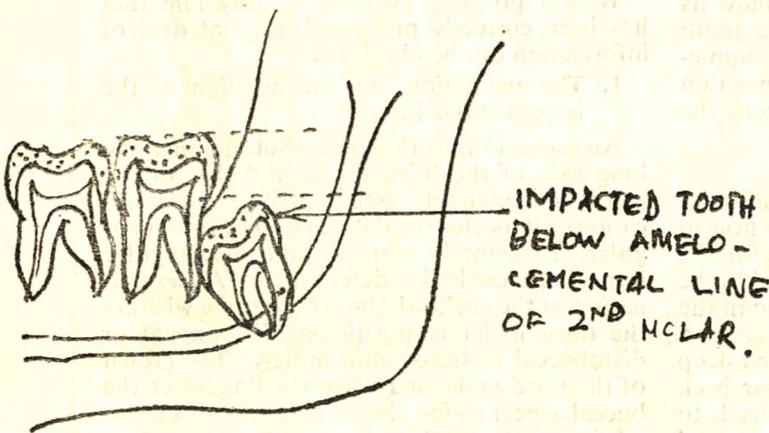


FIG. 6

2. Root pattern

Though the mandibular molars generally have two roots each that have a distal curvature the third molar can have a varied root form 4,5. The number and shape may vary from fused conical roots to three or four divergent root patterns, which lead to difficulties in extraction. The former situation makes extraction simpler since the application of an elevator at the mesial aspect may help in loosening the tooth without fracturing the roots.

3. The level of tooth in vertical axis

A tooth that is deeply buried in the alveolar bone would create more problems for the operator than one that lies superficially. The x-ray should be examined to assess the depth of the third molar in the bone. A comparison is made of the highest level of the third molar with the distal surface of the second molar at different levels⁶.

Three common positions of the third molar in the vertical plane are the highest point of the third molar lying at the level of the occlusal plane of the second molar (Fig. 4), b between the occlusal plane of the second molar and its amelocemental junction, (Fig. 5), or c below the amelocemental junction of the second molar (Fig. 6).

4. Access to the third molar

Depending on the space available between the distal surface of the second molar and the anterior border of the mandibular ramus, the operating technique may have to be varied. As only the minimum permissible amount of bone should be removed, the tooth may have to be sectioned in different ways, to facilitate extraction.

A comparison is made between the distance from the distal surface of the second molar to the anterior border of the ramus of the mandible (AB, Fig. 7a) with the mesiodistal width of the crown of the third molar (XY). When the distance between distal surface of the second molar and the anterior border of the ramus is greater than the mesiodistal width of the crown of the third molar (or equal to it), i.e. $AB > XY$ or $AB = XY$, the impacted tooth is more easily accessible (Fig. 7a). Less bone may need removal, sectioning of the tooth may not be necessary and the extraction may be relatively simple.

When the distance between the anterior border of the ramus of the mandible and the distal surface of the second molar is less than the mesiodistal width of the crown of the third molar, i.e. $AB < XY$ (Fig. 7b), to facilitate removal of the tooth, more bone has to be removed. In some cases the distance between the second molar and the ramus of the mandible may be very small and the distal surface of the second molar may lie against the anterior border of the ramus (Fig. 7c). In this situation, due to the difficult accessibility of the tooth, the operating technique would necessarily be complicated.

5. Root pattern of the second molar

When an elevator is applied to a tooth, an equal amount of force acts on the bone in the opposite direction and this compressing force is transmitted along the bone to the adjacent teeth. In extracting a mandibular third molar, force is commonly applied at the mesiobuccal corner of the tooth with an elevator and this tends to compress the alveolar bone and subluxate the second molar. The presence of the first molar helps to counteract this tendency. In addition, the relatively straighter roots of the second molar would minimise this tendency. However, in situations where the second molar has two fused roots, tapering towards the apex, (Fig. 8), the chances of subluxation would be greatly increased.¹

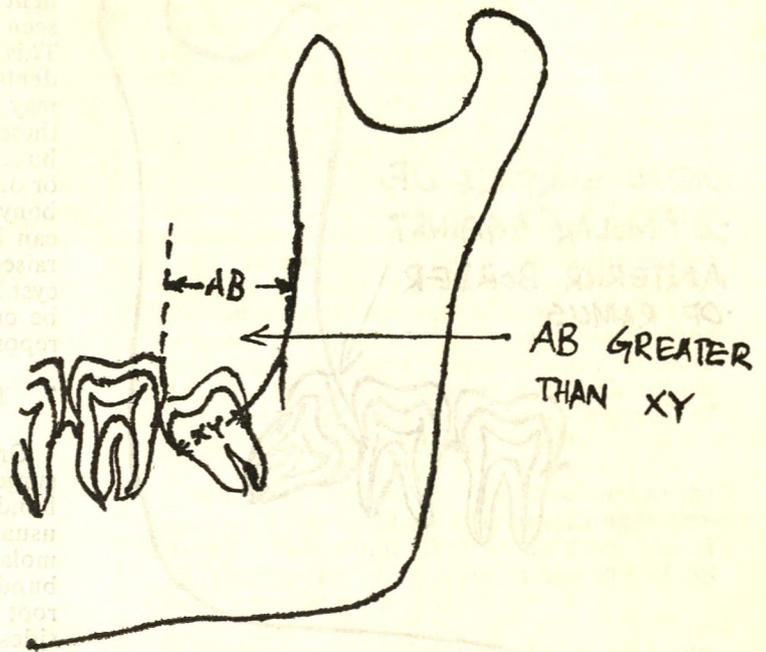


FIG. 7.a.

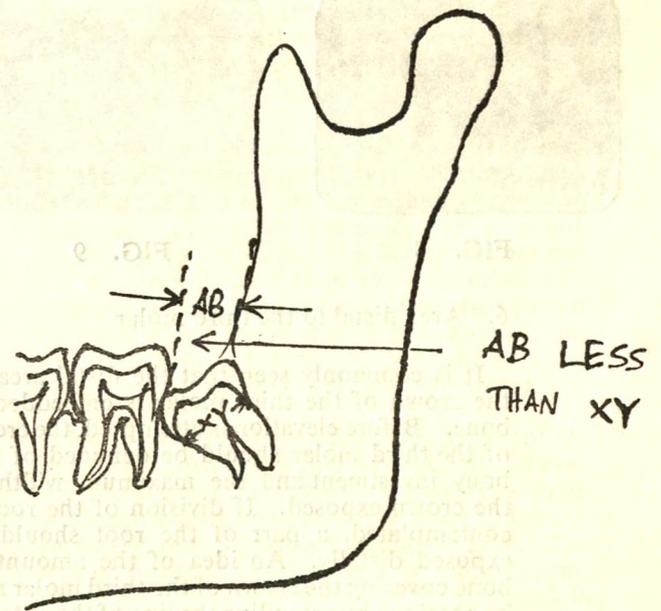


FIG. 7.b.

DISTAL SURFACE OF
2ND MOLAR AGAINST
ANTERIOR BORDER
OF RAMUS

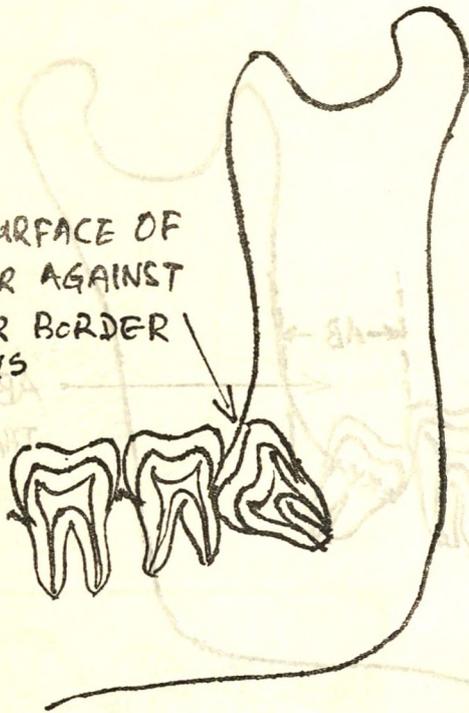


FIG. 7 C.

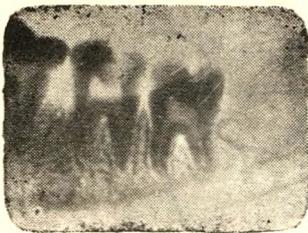


FIG. 8



FIG. 9

6. Area distal to the third molar

It is commonly seen that the distal area of the crown of the third molar is embedded in bone. Before elevation is attempted, the crown of the third molar should be denuded of this bony investment and the maximum width of the crown exposed. If division of the root is contemplated, a part of the root should be exposed distally. An idea of the amount of bone covering the crown of the third molar may be obtained by extending the line of the anterior border of the ramus of the mandible anteriorly along the alveolar crest. The part of the tooth below this line would be encased in bone. A lateral oblique view, if available, would be more useful to the operator in this estimation.

In a number of mesioangular impactions with partial eruption a dark area with a prominent white line at the periphery is commonly seen distal to the third molar (Fig. 9). This appearance is caused by remnants of the dental follicle persisting. In some cases there may be an early cystic change occurring in these tissues. In such a situation, removal of bone distal to the tooth may not be necessary or only a small amount may need removal as a bony defect already exists in this area. This can be seen when the mucoperiosteal flap is raised. To prevent the possibility of a residual cyst from occurring, all this soft tissue should be curetted before the mucoperiosteal flap is repositioned after extraction.

7. The relationship to the neurovascular bundle

Great care should be taken at the time of surgery to prevent damage to the neurovascular bundle traversing the mandibular canal which usually lies apical to the mandibular third molar roots. In some cases, the neurovascular bundle may lie in contact with the apex of the root producing an apical notch or with the sides of the root producing a groove (side relation). Rarely, the roots may be fused below the neurovascular bundle producing a perforation of the root⁷.

In an intraoral x-ray, the mandibular canal appears as a radiolucent band of uniform width bounded by upper and lower white lines. The latter is produced by the cortical bone that lines the mandibular canal. In the majority of patients this radiolucent band is found in the area of bone that lies apical to the roots of the third molar, and a lateral oblique x-ray would show it extending from the mandibular foramen to the mental foramen.

As the radiograph is a 'shadow picture' which gives a two dimensional representation of a three dimensional situation, it is important to realise that if the neurovascular canal lies to one side of the root without being in contact, it may still be superimposed giving an image of contact of the root and the neurovascular bundle. This is termed an 'apparent relation'. In a 'true relation' there is physical contact of the two structures. With close examination of the x-ray film, it is possible to distinguish between a true relation and an apparent relation. When the image of the tooth is examined, an apparent relation produces no change in the radiopacity of the root when it crosses the image of the neurovascular canal. The latter, too, traverses without any interruption of the white lines produced by the cortical bone of the canal.

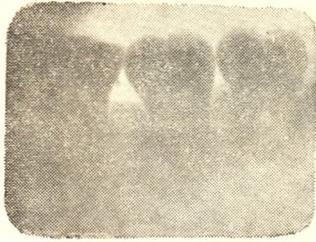


FIG. 10



FIG. 13

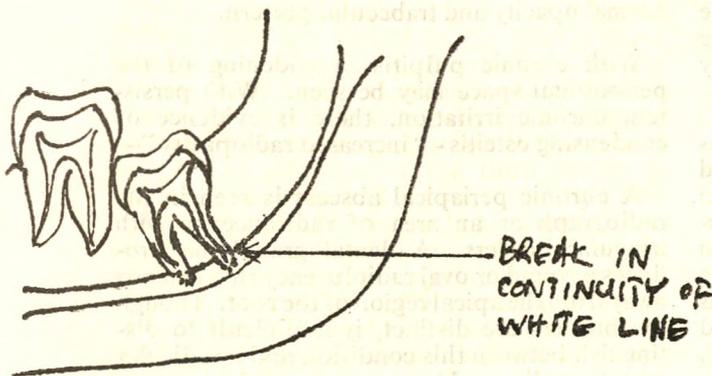


FIG. 11

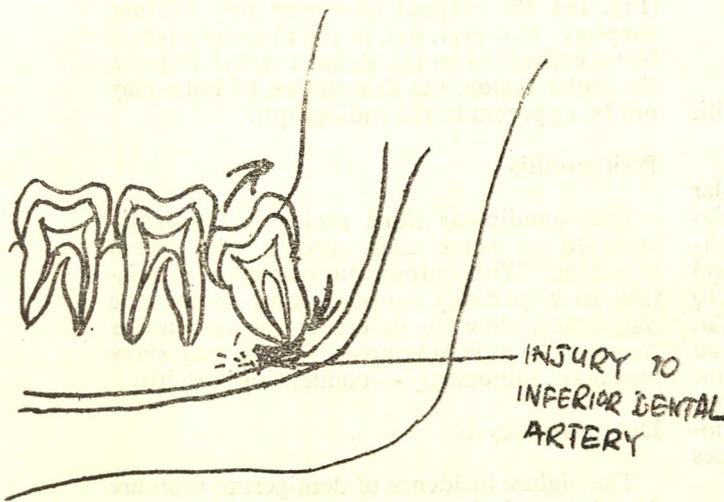


FIG. 12.

If the root is grooved on a side, there is marked change in the radiopacity of the root at the point where the neurovascular canal crosses it. The root becomes more radiolucent due to the reduced thickness of radiopaque matter (tooth) through which the x-rays have to pass before striking the film. The two white lines that demarcate the upper and lower boundaries of the radiolucent band, too, show a break in continuity in this region (Fig. 10). In some cases, in addition to the above features, the radiolucent band may show a marked constriction when it traverses the root region. This is strongly suggestive of a 'perforation' of the root and precautions should be taken to avoid damage to the neurovascular bundle which may otherwise lead to varying degrees of paraesthesia or anaesthesia.

When the apex of the root is related to the neurovascular canal an apical notching is produced. This would show in an x-ray film as an interruption of the upper white line of the neurovascular canal (Fig. 11).

Precautions should be taken to prevent compression of the neurovascular bundle during elevation of the third molar as the apical region of the root tends to swing down with application of the elevator at the mesial aspect of the tooth. This tendency may also lead to profuse haemorrhage from the inferior dental artery due to damage to the wall of the artery by a thin fragment of bone that gets pushed down by the apical area of the root¹. (Fig. 12).

8. Density of bone

With increase in age there is increased deposition of calcium salts in bone reducing its resiliency. Thus an extraction of a simple mesioangular impaction in a young patient may be less complicated than the extraction of a normally erupted lower third molar in a patient of middle age and it would be apparent that the extraction of an impacted tooth in the elderly would be a complicated operation.

The radiograph of cancellous bone of the alveolus shows as a fine interlacing network produced by the arrangement of the trabeculae. With aging the thickness of the bony trabeculae increases, reducing the cancellous spaces. This would produce smaller areas of radio-lucency in the x-ray film and the white lines would be more apparent. In addition, due to the irregular deposition of sclerotic bone, patchy areas of radiopacity may be seen. (Fig. 13).



FIG. 14

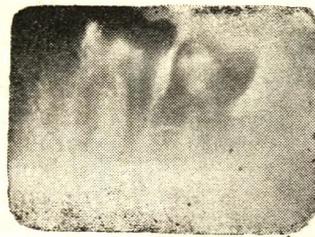


FIG. 15



FIG. 16

A radiopaque line of varied width and density, passing anteriorly across the molar region in continuation with the anterior border of the ramus of the mandible, may be seen in some radiographs. This appearance is produced by the external oblique line.

A radiopaque line varying from one that is very faint and narrow to one that is very broad and dense running forward on a lower level than that of the external oblique ridge is produced by the mylohyoid ridge. With an abnormally deep mandibular fossa related to the submandibular gland, the bone below this ridge may appear markedly radiolucent and should not be mistaken for a cystic condition⁸.

The rare Stafne's bone cyst may give rise to a defect in the body of the mandible near the angle and would be seen in the x-ray as a radiolucent area with definite margins, lying below the mandibular canal.

5. Pathological conditions

Caries, Periodontal disease, Pericoronitis and their sequelae.

A partially erupted mandibular third molar produces an area of stagnation leading to caries of the second and third molars at the interproximal surfaces⁹. A standard intraoral radiograph may show radiolucent areas due to caries that may not be easily detected. An extensive cavity in the impacted tooth may lead to fracture of the crown, if an adequate amount of bone is not removed, with or without sectioning of the root. Proper preoperative radiographic assessment would reduce the chances of this complication occurring. (Fig. 14).

The earliest sign of acute periapical infection is a widening of the periodontal space. With widespread demineralisation of bone, extensive areas of radiolucency with indefinite borders

are seen (Fig. 15). When the acute phase has subsided, the bone at the borders return to normal opacity and trabecular pattern.

With chronic pulpitis, a widening of the periodontal space may be seen. With persistent chronic irritation, there is evidence of condensing osteitis - "increased radiopacity"—

A chronic periapical abscess is seen in the radiograph as an area of radiolucency with irregular borders. A dental granuloma produces a round or oval radiolucency that extends away from the apical region of the root. Though the borders are distinct, it is difficult to distinguish between this condition and a radicular cyst on radiographic appearance alone, especially when the latter is small in size.

In periodontal disease, with destruction of bone occurring at the crest of the alveolus (Fig. 16), the surgical treatment may become simpler. However, due to the alveolar process being embedded in the dense cortical bone in the molar region, the destruction of bone may not be apparent in the radiograph.

Pericoronitis

The mandibular third molar is frequently involved in acute and chronic pericoronal infection. With chronic pericoronitis in relation to a partially erupted third molar, the radiograph shows a defect in the retromolar region. The adjoining area of bone may show increased radiopacity—condensing osteitis.

Dentigerous cysts

The highest incidence of dentigerous cysts are found in relation to the mandibular third molar. In the radiograph the cystic lesion appears as a uniformly radiolucent area with a well defined border. The surrounding bone appears normal.

Ameloblastoma

Ameloblastoma is another pathological condition in the mandibular third molar region and may give rise to a varied radiographic appearance. It may resemble a dental cyst or a dentigerous cyst. When it is multilocular a soap bubble-like appearance showing a radiolucent area with a number of radiopaque septa may be seen. The resorption of the roots of the adjoining teeth may be marked.

Summary

Periapical view, occlusal view and a lateral oblique view are needed in the preoperative radiographic assessment of conditions arising in the region of the mandibular third molar. The usefulness of the data collected from these radiographs in the surgical treatment have been listed. The position of the third molar in relation to the second molar, 'quality' and and 'quantity' of investing bone, proximity to the inferior alveolar bundle or its involvement and pathological lesions in relation to the third molar were discussed. The importance of this data to the oral surgeon for devising rational techniques for extraction and minimising complications has been shown.

References :

1. Killey, H. C. & Kay, L. W., The Impacted Wisdom Tooth. (1969). E. & S. Livingstone Ltd.
2. Gehrig & Freedman (1968). Impacted third molar and dentigerous cyst of the condylar neck of the mandible, J. Oral Surg. 26 : 9.
3. Schwimmer, A. et al. (1972). Subcondylar impaction of a third molar resulting in chronic preauricular sinus. J. Oral Surg. 30 : 1.
4. Kraus, B. E. et al. Dental Anatomy and Occlusion. The Williams & Wilkins Co. Baltimore (1960) Ed. 1.
5. Moore, J. R. Principles of Oral Surgery, (1965). Pergamon Press.
6. Archer, W. Oral Surgery, Saunders Ltd. (1961).
7. Howe, G. L. & Poyton, H. G., Prevention of damage to the inferior dental nerve during the extraction of mandibular third molars. Brit. Dent. J. 109 : 9 (1960).
8. Stafne, Edward C., Oral Roentgenographic Diagnosis. W. B. Saunders Co. (1969) Ed. 3.
9. Howe, G. L. Minor Oral Surgery, John Wright & Sons Ltd., (1966) Ed. 1.



THE PRODENT PROMISE

a dazzling smile.....

breath - fresh confidence

*The only toothpaste with
real mint flavour*

Manufactured by

D. A. ABEYSINGHE & CO.

377, Darley Road,
COLOMBO 10.

Tel : 93673, 93674, 95237

ACUPUNCTURE IN ORAL DISORDERS

SIRILAL A. SILVA,

L. D. S. (Cey.), M. Ac. A. (Sri Lanka)

Introduction :

There has been a wide resurgence of acupuncture in recent years, mainly in the West. The earliest known records of acupuncture in the People's Republic of China are found on bone etchings of 1600 B. C. Hungdi Neiging Suwen written about 200 B. C. is the earliest known book on acupuncture. The great interest of the late Chairman Mao Tse-Tung in acupuncture promoted its development. Interest in acupuncture was awakened in Sri Lanka after a team of doctors visited the People's Republic of China. However acupuncture seems to have been practised here many centuries ago according to ancient ola leaf manuscripts. An increasing awareness of the various side effects of drugs has aroused this new interest in acupuncture.

Effects of Acupuncture :

Stimulation of acupuncture points produces certain physiological effects on the body.

(1) Analgesic

Needling specific points raises the threshold of pain. Post-operative pain is reduced and pain such as toothache, headache etc. is suppressed.

(2) Sedative

Stimulation has a sedative effect on certain acupuncture points.

(3) Regulatory (Homeostatic effect)

Acupuncture tends to restore to normal certain disturbed physiological functions eg. hypertension, diabetes. In acupuncture anaesthesia the physiological functions of the body remain relatively normal although surgical trauma may cause alteration of blood pressure etc. these rapidly return to normal.

(4) Anti-inflammatory and improvement of immune mechanisms.

Acupuncture activates the immune mechanisms of the body. Controlled studies have shown that acupuncture produces a leucocytosis and intensifies phagocytosis, strengthening the body resistance against disease. It must be remembered that during the "Long March" of the late Chairman Mao Tse-Tung, acupuncture was used extensively and effectively to treat

malaria, dysentery, respiratory diseases and a host of other infections.

Theories of Acupuncture :

(1) Traditional Chinese Theory (Jing-Luo Theory)

According to traditional Chinese Medicine, channels and collaterals are certain pathways in the human body through which blood and vital energy circulate. The ancients believed that in a healthy body there is a free flow of vital energy "Qi" through the channels in a certain pattern and this is governed by the interplay of two opposing forces, the Yin (negative) and the Yang (positive). Their imbalance results in disease. Channels run lengthwise in the body and the collaterals are branches. The channels connect internally with the viscera and externally with the four extremities skin and sense organs.

The twelve paired channels are :

1. The Lung Channel of Hand (yin) (Lu.)
2. The Large Intestine Channel of Hand (yang) (L.I.)
3. The Stomach Channel of Foot (yang). (St.)
4. The Spleen Channel of Foot (yin). (Sp.)
5. The Heart Channel of Hand (yin) (H.)
6. The Small Intestine Channel of Hand (yang) (S.I.)
7. The Urinary Bladder Channel of Foot (yang). (U.B.)
8. The Kidney Channel of Foot (yin). (K.)
9. The Pericardium Channel of Hand (yin) (P.)
10. The Sanjiao Channel of Hand (yang). (S.J.)
11. The Gall Bladder Channel of Foot (yang). (G.B.)
12. The Liver Channel of Foot (yin) (Liv.)

The eight extra channels do not pertain to any of the internal viscera. Hence they are termed extraordinary channels. Out of these the Du (Back midline) channel and the Ren (Front midline) channel are the most important as they have their own points.

The Du channel or the back midline channel is the confluence of all the yang channels. The word Du in Chinese means to govern and it is believed that it governs all the yang channels.

The Ren channel or the front midline channel is the confluence of all the yin channels, the word Ren meaning responsible.

(2) Neuro-physiological Theory : (Gate Control Theory).

Melzack and Wall in 1965 proposed the Gate Control Theory according to which impulses generated by painful stimulation and carried to the spinal cord by the small sized (c) nerve fibres are blocked in the substantia gelatinosa of the dorsal horn by the simultaneous stimulation of the large sized (A) fibres preventing pain sensation from reaching the brain. Later Mann and Chen proposed a two gate theory with the second gate located in the thalamus. It is believed that the second gate can be closed by stimulating the peripheral nerves on any part of the body surface stopping all pain impulses coming from any part of the body. Melzack also proposed a two gate theory placing the second gate in the lower brain stem. Chang Hsiang-tung chief of the brain research section of the Shanghai Institute of Physiology proposed a multiple gate theory where the acupuncture effect is mediated through proprioceptive pathways.

Looney suggested that the autonomic nervous system was involved in acupuncture. It has been shown that it is not possible to produce surgical analgesia in animals when the sympathetic chains are interrupted.

(3) Humoral Theories

Humoral factors may also play a part in acupuncture. It has been shown in the People's Republic of China that acupuncture stimulation of a rabbit will cause an increase in the pain threshold of a second (controlled) rabbit receiving blood from the first acupunctured rabbit.

(4) Hypnosis

Kroger, Saltoun and Katz have independently proposed that acupuncture is a form of hypnosis where the ritualistic placement of needles and stimulation distracts the mind of the patient. Others like Veith and Geiger argue that acupuncture is successfully given to children and animals who are not subject to hypnosis.

Advantages of Acupuncture Anaesthesia

(1) Safety

In acupuncture anaesthesia there are no problems such as overdose, hypersensitivity etc.

and the physiological functions continue to remain normal. Acupuncture anaesthesia may be used safely in old patients where pathological conditions of the liver, kidney, lung etc, contraindicates the use of drugs. Acupuncture activates the brain and central nervous system of the patient to maintain the normal physiological functions during surgery.

(2) Minimal Physiological Disturbance and Speedy Recovery.

The blood pressure, pulse and respiration generally remain stable. The regulating effect of acupuncture on a patient in a state of shock raises the blood pressure quickly to a stable level. There is less haemorrhage during surgery and quicker healing of incisions. Peristalsis also returns to normal quickly.

(3) Conscious Patient

The patient is insensitive to pain but the other sensory and motor functions remain normal and the patient can co-operate with the surgeon.

(4) Economy.

Complicated equipment is unnecessary and a small team can manage.

(5) Longer lasting Post-operative analgesia.

Disadvantages of Acupuncture Anaesthesia

(1) Incomplete Analgesia.

Analgesic effect is not complete and adjuvant drugs may be necessary in major surgery.

(2) Lack of Complete Muscle Relaxation (This is particularly a problem in abdominal surgery).

(3) Incomplete Control of Internal Visceral Response.

Patient may experience pain and nausea when traction is applied to viscera.

(4) Long Induction Period.

The long induction period (about 20 minutes) is a disadvantage specially for simple extractions.

Selection of Patients

Acupuncture anaesthesia is not suitable for patients with anxiety tension and apprehension. It is also not suitable for patients in deep shock or with severe loss of blood.

A. Selection of Channels

- (1) The channel passing through the area has to be selected. In dentistry the Stomach (St.) and Large Intestine (Li) channel points are selected.
- (2) Yang and yin channels used in conjunction will improve the effectiveness of anaesthesia.
- (3) According to traditional Chinese Medicine the kidney commands the bone and the spleen controls the muscle.

B. Selection of Points

- (1) Points on the channels may be selected according to clinical experience.
- (2) Selecting Luo connecting points and Xi-cleft points.

In each of the paired channels there is a Luo connecting point (communicating point between the yin and yang channels) and a xi-cleft point where vital energy is believed to be concentrated.

- (3) Points must be selected close to the site of operation causing no interference to surgical and aseptic procedures.

C. Needle Manipulation

It is believed that for maximum effect the patient must feel sore and numb over the site of acupuncture. This known in Chinese as 'deqi'.

(1) Hand Manipulation

The methods used are twirling, withdrawing and reinserting. (Only twirling is used in ear acupuncture — auriculotherapy.)

(2) Electrical Stimulation

Electrical pulsating machines are used. The output should be adjusted to a minimum and gradually increased. The intensity of stimulation depends on the physical condition of the patient, his sensitivity to stimulation and the duration of surgery.

Uses in Dentistry

In dentistry acupuncture can be used as an anaesthetic in the extraction of teeth and other surgical procedures, in the treatment of trigeminal neuralgia and in the treatment of various types of ulcerations of the oral cavity.

- (a) Acupuncture points for extraction
General points Du. 20 — Baihui
L.I. 4 — Hegu

Additional points :

Upper incisors Du. 26 (Renzhong) towards L. I. 20 (Yingxiang) or even finger pressure at Du. 26.

Lower incisors St. 6 (Jiache)

Maxillary canines Du. 26

S.I. 18 (Quanliao)

In People's Republic of China strong finger pressure on S.I. 18 is used for the extraction of the maxillary incisors and canines.

Mandibular canines Du. 24 (Shenting).

St. 5 — (Daying).

St. 6 — (Jiache).

St. 7 — (Xiaguan).

Maxillary premolars S.I. 18 — (Quanliao).

Mandibular premolars Du. 24 — (Shenting).

St. 6 — (Jiache).

Maxillary molars S.I. 18 — (Quanliao).

St. 6 — (Jiache).

Mandibular molars Du. 24 — (Shenting).

St. 6 — (Jiache).

St. 7 — (Xiaguan).

Auricular Points : The tip of the tragus can be used as a general point.

Maxillary teeth — the superior third of the anterior third of the ear lobe. (Area 1)

Mandibular teeth — the middle third of the anterior third of the ear lobe. (Area 4)

The same points can be used for relief of toothache.

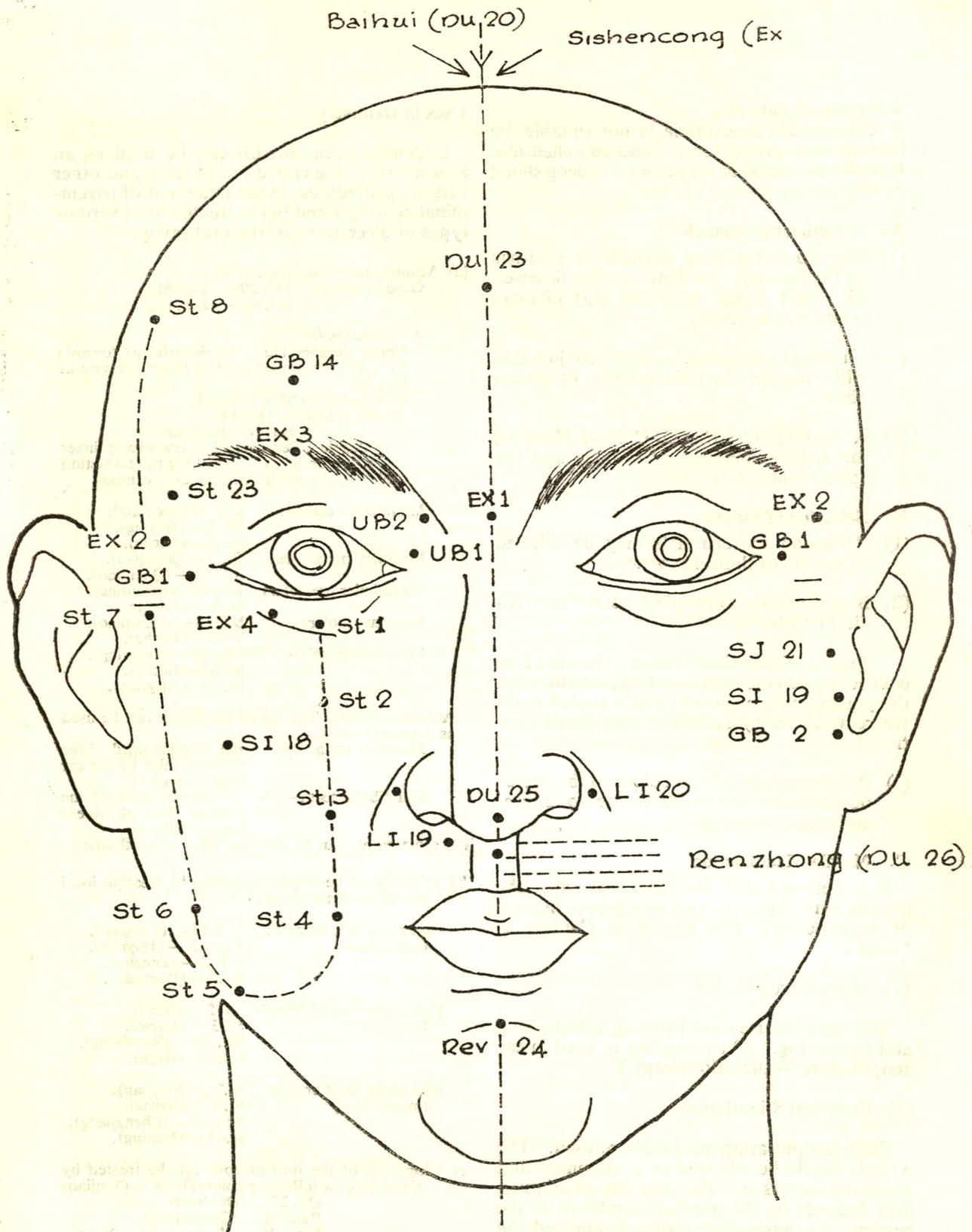
- (b) Trigeminal neuralgia is treated by treating local as well as distal points.

Pain along first branch : G.B.14 — (Yangbai).
(ophthalmic) Extra 2 — (Taiyang).
U.B.2 — (Zanzhu).
S.J.5 — (Waiguan).

Pain along second branch : St. 2 — (Sibai).
(maxillary) St. 3 — (Juliao).
Du. 26 — (Renzhong).
L.I.4 — (Hegu).

Pain along third branch : St.7 — (Xiaguan).
(mandibular) St. 6 — (Jiache).
Ren.24 — (Chengjiang).
St.44 — (Neiting).

- (c) Ulceration of the oral mucosa can be treated by stimulating the following points Du 28 — (Yinjiao)
Du. 27 — (Duiduan).
Ren. 24 — (Chengjiang).
Extra 10 — (Jinjin) (left) — Yuye (right).



IMPORTANT POINTS OF THE FACE

FIG. 1.
 (From Principles and Practice of Scientific Acupuncture)
 Jayasooriya and Fernando.

Acupuncture can also be used for anaesthesia in major oral surgery. The first case on record in Sri Lanka is a maxillary cyst involving all the incisors which was enucleated at the Colombo South Hospital in 1975 using acupuncture. The points used were the ear lobe area and Quanliao (S.I. 18). Electrical stimulation was used. The surgery took forty five minutes. The patient happened to be a medical officer and acupuncture was administered at his request. Careful case selection is necessary for acupuncture anaesthesia to be success. Acupuncture anaesthesia is not successful in apprehensive and nervous patients.

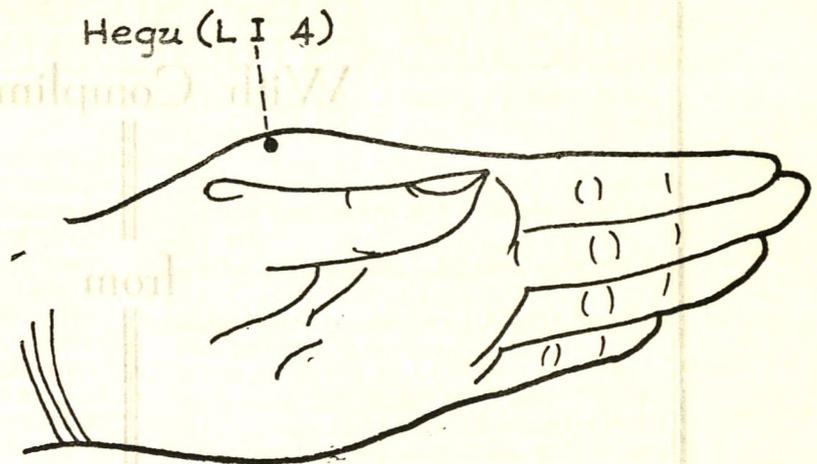


FIG. 2

Location of Points :

- L.I. 4. — highest point of muscle when thumb and index finger are brought together.
- L.I. 20 — between the naso — labial groove and midpoint of outer border of ala nasi.
- St. 2. — in depression of infra-orbital foramen.
- St. 3. — directly below St. 2, at level of lower border of ala nasi.
- St. 5. — anterior to angle of jaw at lower border of masseter muscle.
- St. 6. — at prominence of masseter muscle when mouth is shut.
- St. 7. — depression at lower border of zygomatic arch anterior to the condyloid process of the mandible.
- St. 44. — just proximal to web margin of 2nd and 3rd toes.
- S.I. 18. — directly below outer canthus in depression below lower border of zygomatic bone.
- U.B. 2. — medial end of eyebrow just inside hairline.
- S.J. 5. — two thumb breadths (2 cuns) above transverse crease of wrist between the radius and ulna.
- G.B. 14. — one thumb breadth (1 cun) above midpoint of eyebrow.
- Du. 20. — midway on a line joining apex of both ears.
- Du. 24. — one thumb breadth (1 cun) above midpoint of eyebrow.
- Du. 26. — midline at junction between upper and lower two thirds of the frenulum.
- Du. 27. — median tubercle of upper lip at junction of the philtrum and upper lip.
- Du. 28. — between upper lip and upper gum in the labial frenum.
- Ren. 24. — depression in middle of mental labial groove.
- Extra 2. — junction of line joining lower border of eye and lateral end of eyebrow.
- Extra. 10. — at centre of both sides of sublingual veins. (two points — one on each side).

In the People's Republic of China acupressure and electrical pulse stimulation are widely used in producing analgesia for the majority of dental procedures. It takes experience, manual dexterity, patience and time to acquire the art of administering acupuncture.

Acknowledgement :

I am very grateful to Dr. Anton C. Jayasooriya, Physician in Charge, Acupuncture Clinic, Colombo South Hospital for his constructive criticism and advice, also to the President and the Committee of the Acupuncture Association of Sri Lanka for making these studies possible.

References :

- Academy of Traditional Chinese Medicine — An Outline of Chinese Acupuncture. (1975).
- Chen, J. Y. P. — Acupuncture Anaesthesia in the Peoples Republic of China (1973) U. S. Department of Health, Education and Welfare Publication.
- Geiger, H. J. — How Acupuncture Anaesthetises : The Chinese Explanation. Medical World News (1973).
- Hungdi Neiging Suwen — translated by Professor Ilsa Veith as "The Yellow Emperors' Classic of Internal Disease. (1949).
- Jayasooriya, Anton C. and Fernando, Felix. — Principles and Practice of Scientific Acupuncture. (1977).
- Looney, G. — Acupuncture in Drug Addiction and Possible Role of Autonomic Nervous System. (1973), U.S. Department of Health, Education and Welfare Publication.
- Mann, Felix. — Acupuncture The Ancient Chinese Art of Healing (1971).
- Melzack, R. and Wall, P.D. — Pain Mechanisms A New Theory (1965) Science.

With Compliments

from

UNION TRADERS LTD.

Sales Depot :

**47, Flower Road,
COLOMBO 7.**

Telephone : 94945

Head Office :

**Lady Catherine Estate,
RATMALANA.**

Telephone : Mt. Lavinia 7597

DENTAL CARE OF PHYSICALLY AND MENTALLY HANDICAPPED CHILDREN

R. GOONETILLEKE B.D.S. (Cey.), F.D.S.R.C.S. (Edin.), F.D.S.R.C.S. (Eng.)
Consultant, Dental Institute, Colombo.

This problem received only little or no attention in the past and now it is receiving considerable amount of attention than ever before thus fitting them into the community. The programme of dental care to these patients are based on the fact that "Every child has a right to develop his potentialities to a maximum. This implies that all children irrespective of whether or not they suffer from mental or physical handicap should have ready access to the best medical diagnosis and treatment, allied therapeutic services, nursing and social services, education, vocational preparations and employment. They should be able to satisfy fully the needs of their own personalities and become as far as possible independent useful members of the community." These children present special problems for the dental surgeon and therefore most of them receive only emergency extractions for relief of pain being aware of the fact that a considerable number of these patients will never be capable of wearing dentures. Are we going to make this physically and mentally handicapped child also dentally handicapped as well. In order to deliver an acceptable form of dentistry of better standard one should be aware of the nature and special problems that are associated with these conditions. The essential problem is lack of co-operation because of either physical or mental inability.

Classification :

- i. Physically handicapped — "One who over an appreciable period is prevented by physical condition from full participation in childhood of a social recreational, educational and vocational nature"

W.H.O. Expert Committee 1952.

Majority of these children are domiciled and the others are in institutions. Many of them attend school (ordinary school) depending on the extent of physical inability and sometimes the economic status of the parent.

- ii. Mentally subnormal — "Incomplete or insufficient general development of the mental capacity." This can be subdivided ;
 - (a) Mild subnormality with I. Q. of 50 to 69 and a mental age in adult of 8 to 12 years.
 - (b) Moderate subnormality with I. Q. of 20 to 49 and a mental age in the adult 3 to 7 years.

- (c) Severe subnormality with I. Q. of 0 to 19 and a mental age in the adult of 0 to 2 years.

The other classification of mental subnormalities is :

- i. Educationally subnormal (ESN) whose I.Q. lies between 50 — 80.
- ii. Severely subnormal (SSN) I. Q. 50 — 2 found in subnormality hospitals. Majority of the patients who would come for dental treatment will be those with mild mental subnormality.
- iii. Socially handicapped. Those who do not fall into above two groups but definitely handicapped: e.g. Maladjusted, deprived or emotionally handicapped.

Cerebral Palsy

The predominant feature of the cerebral palsied patient will be neuromotor dysfunction with a certain degree of mental retardation or epilepsy which may or may not be present. There are different types of neuromotor disorders. The different types are spasticity, athetosis, ataxia, rigidity, and tremor. It is important that the dental surgeon is aware of the type of disorder and special problems associated with it.

These patients have a poor oral clearance and the tendency to eat soft food, thus they tend to have a higher rate of caries and significant increase in gingivitis specially in the elder children. Gingival enlargement is a feature of these patients who are on phenytoin sodium to control epilepsy. The patients also have a higher incidence of malocclusion owing to abnormal muscular activity ; the spastics with hypertonicity tend to have a class II division II malocclusion with crowding whereas the athetotic with hypotonic lips tend to have angles class II division I malocclusion with a tongue thrust and anterior open bite.

Special problems these patients may have and require attentions are ;

- i. Apprehension. Many of these children are not used to meet strangers.
- ii. Difficulty of communication if there is any auditory, visual or speech defect, chairside communication must be modified accordingly.

- iii. Low intelligence — This can contribute to difficulty in co-operation.
- iv. Poor concentration — This may be an inherent aspect of the cerebral dysfunction, trivial things distracting attention.
- v. Convulsion — These are not common in the dental surgery as the child will be receiving drugs to control such episodes.
- vi. Posture — An ataxic needs to have the dental chair tipped well back to give stability and support while the spastic and the athetotic may need more manual support and control in the chair.
- vii. Ability to co-operate if the patient can sit in the chair and open his mouth he can be treated as a normal patient.

The Treatment of the Cerebral Palsied Child

The dental surgeons should have the medical history of the child including the type and the degree of physical handicap, the level of intelligence and any other special problems associated with the patient. This will enable the dental surgeon to make necessary adjustments. Only when all this information is gathered should the patient be seen.

First visit of this patient should be for the dental surgeon and the patient to be acquainted with each other and in order to establish mutual confidence. Having assessed the medical and dental condition fully, a complete treatment plan should be worked out and this should be discussed with the parent. In the treatment of these patients certain precautions have to be taken with regard to the chair position, finger guards, mouth props etc. A Water Spray and a suction is a must as the patients cannot rinse properly. As far as the X-rays are concerned bimolar films or bitewing X-rays are more satisfactory. Orthodontic and prosthetic treatment is required where the disability of the patient is minimal.

In the management of patients preventive techniques are of great value in view of the fact that ;

- (a) Higher incidence of caries and periodontal disease.
- (b) To prevent the patient becoming dentally handicapped as well.

Tooth-brushing techniques should be repeated as necessary. Importance of oral hygiene and part played by plaque in caries and periodontal disease should be stressed. At the same time one must advise the use of Fluoride tooth-paste, fluoride mouth rinsing (if possible) or fluoride tablets in order to increase resistance of the teeth to caries.

Mentally Subnormal Children

The patients who are likely to come for dental treatment are those with mild subnormality. These patients do not show any special features except for the fact that they have very poor *oral usage* in addition to the fact that they take soft food and parents and relatives of such patients tend to provide them with excessive amount of sweets in order to make them happy, at the same time affecting their oral health. The primary aim in their treatment must be a functional mouth, but aesthetics must be considered as well. Some of these patients of higher grade will tolerate orthodontic and prosthetic appliances. Therefore dental surgeons should be aware of the mental level before planning any dental treatment for such patients.

The examination and treatment of a mentally subnormal child demands *excess patience* but this becomes useless unless the dentist can obtain the patients' confidence and trust. Without this it is not wise to attempt any dental treatment in the normal routine. If the patient fails to co-operate specially, in cases which require large scale rehabilitation, best approach would be to work under general anaesthesia. Once again preventive aspect is the best approach for such patients.

Epilepsy

Many of the mentally subnormal as well as the cerebral palsied children are subjected to epileptic attacks. Such children should be under treatment for epilepsy prior to dental treatment. The dental surgeon should find out from the parents the frequency of attacks. It is better if the parents be with patients during dental treatment as the parents will be the best persons to know the impending attack thus preventing any injury or damage to the patient in the surgery.

Mongolism

The children with mongolism (Trisomy — 21 or Down's syndrome) are all mentally subnormal to a variable degree and display a characteristic affectionate and happy disposition. Many of these have congenital heart defects, they have under development of the middle 3rd of the face with angles class III type of malocclusion, hypotonicity of lips, macroglossia (relative) congenitally missing teeth, especially maxillary lateral incisors. Teeth smaller, bulbous, fissural patterns vary and shallower. They have a high incidence of periodontal disease.

The dental care of the mentally subnormal group should be directed first of all to the periodontium to prevent further destruction of the tissue. The medical problems should be taken into account prior to any dental treatment.

With the Compliments

of

**J. L. Morison Son & Jones
(Cey.) Ltd.**

P. O. BOX 430,
COLOMBO.

With the Compliments

With the Compliments of

CEYLON NUTRITIONAL FOODS LTD.

Distributors of Nestlé Products

(Cey.) Ltd.

P. O. BOX 430

COLOMBO

NEW MEMBERS

Aiyathurai, M.	B.D.S. (Cey.)	Jayasinghe, R. B.	B.D.S. (Cey.)
Amalakuhan, K.	..	Jayasinghe, A. D. (Miss)	..
Ananthamoorthy, T.	..	Kandasamy, R. (Miss)	..
Ariyawathie, H. P. (Miss)	..	Kugadas, V.	..
Bastianpillai, K. R. F. (Miss)	..	Kumarasamy, V. (Miss)	..
Chandrasiri, K. W. S.	..	Padmakumari, T. W. (Miss)	..
Chang, C. H.	..	Palanivel, V.	..
Chandrasekeram, K.	..	Paramosothy, Y. (Miss)	..
Chandraleela, N. (Miss)	..	Ramanathapillai, A. (Miss)	..
De Alwis, A. C. J.	..	Rasanayagam, K.	..
De Silva, H. C. (Miss)	..	Saravanamuthu, A.	..
Ganapathy, P. J. (Miss)	..	Satyamoorthy, M. (Miss)	..
Ganeshamoorthy, N. (Miss)	..	Selvinayagampillai, N. (Miss)	..
Gankanda, K.	..	Senarathna, N. H. R. H.	..
Goonewardana, L. I. A. (Miss)	..	Senarath, G. B.	..
Gunasekera, K. A. C. R. (Miss)	..	Siriwardhana, M. M. C. (Miss)	..
Hettiarachi, S. (Miss)	..	Sithamparanathan, V.	..
Hettiarachi, M. (Miss)	..	Suthanthiran, R.	..
Hoover, J. N.	..	Thirimanne, B.	..
Jayakoddy, D. P. S. (Miss)	..	Wijesuriya, P. H. M. J. (Miss)	..

DEATHS

Jayathirathna, I. B.

Thiruarul, S.

NEW MEMBERS

B.D.S. (Cos)	Jayasingh, R. B.	B.D.S. (Cos)	Agarwal, M.
..	Jayasingh, A. D. (Miss)	..	Ashokan, K.
..	Kandam, R. (Miss)	..	Ashokan, T.
..	Kandam, V. (Miss)	..	Ashokan, H. P. (Miss)
..	Kandam, V. (Miss)	..	Ashokan, K. R. F. (Miss)
..	Kandam, T. W. (Miss)	..	Chandrasekhar, K. W. S.
..	Palanisami, V.	..	Chandrasekhar, G. H.
..	Palanisami, Y. (Miss)	..	Chandrasekhar, K.
..	Rameshbabu, A. (Miss)	..	Chandrasekhar, N. (Miss)
..	Rameshbabu, K.	..	De Silva, A. C. J.
..	Saranam, A.	..	De Silva, H. C. (Miss)
..	Saranam, M. (Miss)	..	De Silva, P. J. (Miss)
..	Saranam, N. (Miss)	..	De Silva, N. (Miss)
..	Saranam, N. H. R. H.	..	De Silva, K.
..	Saranam, G. B.	..	De Silva, E. J. (Miss)
..	Saranam, M. M. C. (Miss)	..	De Silva, K. A. C. R. (Miss)
..	Saranam, R.	..	De Silva, S. (Miss)
..	Saranam, B.	..	De Silva, M. (Miss)
..	Saranam, P. H. M. (Miss)	..	De Silva, A.
..		..	De Silva, D. P. S. (Miss)

FUTURE MEETINGS

65th Annual World Dental Congress of the International Dental Federation. Toronto, Canada—October 22—28, 1977.

VIII Paulista Convention of Odontology and the X Latin American Seminar of Odontology is being held from the 21st to the 28th of January, 1978.

66th Annual World Dental Congress of the Federation Dentaire Internationale will be held in Madrid in September 1978. For information please contact Professor J. P. Moreno, Secretary to the Congress, University of Madrid.

For all your requirements of

DENTAL

Materials, Instruments, Artificial Teeth

and

Plaster of Paris

Products of:

**AMALGAMATED DENTAL TRADE DISTRIBUTORS LTD.
ENGLAND**

and

“KOLYNOS” Denture Fixative for holding artificial teeth firmly in place.	“DENCLEN” Liquid Denture Cleaner cleans your denture in a minute	“PAREXON” Remedy against diseases of the Paradentium Gingivitis Paradentosis
--	--	--

CHIVKONZER & COMPANY

The Premier Dental People
P. O. Box No. 987,
COLOMBO.

Telephone: 24530
Telegram: “CHIVKON”

206-1/1, Panchikawatte Road,
Colombo - 10.

*The Mouth
threshold of health
and disease*

No. 1 Prophylaxis against Dental Caries

“Although the experimental conditions were not comparable to those in water fluoridation, the observed effect of tablet therapy seems to be as favourable as the effect of fluoride ingested by water.”

(Berner, Fernex and Held - Swiss Dental Journal 77, 528 (1967))

prescribe

Zymafluor

soluble Sodium Fluoride Tablets 1 mgm.

manufactured by **ZYMA S.A.** Nyon Switzerland.

No. 2 Treatment of Dental Hypersensitivity

“In the treatment of Dental hypersensitivity, clinical trials of a new home-use dentifrice containing 10% Strontium Chloride, have produced significant improvement in 93 percent of 86 patients.”

(Harry Skurnik - The Journal of Periodontology Vol. 34 - March 1963)

Sensodyne

contains Strontium Chloride 10%

specially formulated for safe, superior cleansing and polishing effectiveness.

manufactured by **Stafford Miller Ltd.**, Australia.

More information available from:

Sole Agents :



Phone : 31213