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A review of the dental state of people of Geriatric age and the need for organised training in Gerodontic care.

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The steadily improving standards of nutrition, housing and medical care have resulted in people living to a greater age, and in recent time both medical and welfare workers have concentrated their efforts to improve the quality of life for the elderly.

In the United Kingdom over 12 % of the total population are of geriatric age, that is over 60 years for women and 65 years in the case of men. This percentage is steadily increasing, in part due to a declining birth rate, but mostly due to the improving quality of care of the elderly. As a result of technical developments and social changes in the more advanced Western countries there has been an ever increasing dispursement of families, which have tented to become smaller. Accordingly, the living accommodation provided in modern housing is also smaller and the standards of society have become more materialistically orientated. This has resulted in many elderly people, especially those who are sick or

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handicapped, being dismissed by their relatives and regarded as a «state» responsibility.

Medical care is now directed to maintaining the independence of the individual for as long as possible and for this purpose Recreational Centres and Day Hospitals have been set up in many areas to care for the health and welfare of the elderly and to monitor their general condition. Those whose general condition appears to be deteriorating are referred to hospital for specialist care.

The concept of modern geriatric care is that whenever possible hospitalization should be made on a short term basis, the patient being returned home to the care of the general medical practitioner, the social services workers and where available, the Day Hospital.

This team approach to geriatric care is very important in maintaining an optimum standard of health.

It must be conceded that dentistry has an important role to play in the care of the elderly which, a present, it is not fulfilling. Planning authorities and dental organizations have failed to take account of the need to supply dental services to this large and relatively neglected section of the community and to integrate it in the developing Geriatric Care Programmes.

Surveys in the U. K. and elsewhere have clearly shown the extensive need for dental treatment in elderly people and the peculiar difficulties so often present that make the study and care of these folk a specialised subject.

Surveys in Britain

Between 80-90 % of people in the Geriatric stage of life are believed to be edentulous, Heath (1972), and it has been shown that there are both Regional differences, Hobdell et al (1969) and Socio-economic differences, Buhlman et al (1968), Sheiham et al (1969), in relation to the numbers of people who are edentulous, the state of their oral and dental care and their attitudes towards dentistry and oral hygiene.

Man elderly people have no dentures or prefer not to wear them for mastication. Surveys in London by Ritchie (1966) and in

Edinburgh by Ettinger & Manderson (1973) have produced similar findings. Between 30-32 % of subjects had neither teeth nor dentures and yet inspite of this extensive need for treatment very few people had complained about their lack of appliances or inability to masticate. Most of the dentures worn were old, nearly 40 % were over 10 years old and approximately 70 % were over 5 years old. Many were no longer asatisfactory fit and others were badly worn or damaged. Patients were often proud of the antiquity of their dentures irrespective of the cleanliness, comfort or ability to utilize them. (Tables 1 & II)

A survey of elderly housebound people in Cardiff, Bates et al (1975), showed that although complaints had been made about 20 % of the dentures worn, on examination over 50 % of the complete dentures were found to be deficient.

Heath (1972) estimated that although about 25 % of elderly non-ambulant and largely housebound people who have dentures are not satisfied with them, a dental surgeons evaluation would raise this figure of unsatisfactory dentures to between 40-76 %.

Without doubt there are a large number of people that are continuing to wear badly fitting, worn out appliances which are the cause of pain, discomfort, embarrassment and damage to the oral tissues.

Many elderly people are difficult prosthodontically for a variety of reasons, one of which is the poor mandibular denture foundation area that has resulted from gross resorption of the bone. Heath (1973) has demonstrated that women have smaller mean mandibular ridge heighs than men and it is probable that this finding is related to the higher incidence of osteoporosis in elderly women than in men of comparable age, Exton-Smith & Stewart (1972). A London survey by Ritchie (1969) recorded negative mandibular ridge heights or «gutters» in 13 % of geriatric subjects a figure considerably lower than the 19 % reported by Ettinger (1969) in Australia; both of these figures were composed mostly of women.

The number of people who retain teeth into old age shows both Regional and Socio-economic variability as has been previcusly mentioned. The statistics can be misleading since remaining teeth may be little more than broken decayed stumps of teeth reflecting not only neglect by the patient but failure of medical services to adequately care for the whole patient.

Most people who still retain some natural teeth require extensive treatment since the periodontal state is frequently poor and there are often numerous carious lesions present at the cervical regions of the teeth. Neglect or an inability to maintain a reasonable standard of oral hygiene is the main reason for the decline in the state of the mouth. Accumulation of plaque and food debris, a higner intake of highly refined carbohydrates dictated by financial and masticatory necessity coupled with reduced salivary clearance in old age combine to devastating effect.

The Regional differencies in retention of natural teeth can be; clearly seen by comparing the survey figures for London, Edinburgh and Cardiff. In London (1969) the total in and out patient sample showed 31 % of subjects had some teeth remaining compared with 10 % in the Edinburgh (1973) sample and 12.5 % in the Cardiff housebound survey(1975).

Gould (1965) and Jackson (1965) predicted the teeth most likely to survive to old age are the lower canines and incisors, a prediction confirmed by Ritchie (1973).

There was no significant sex difference detected in the London survey in either the number of teeth retained or the DMF indices. Periodontal disease was rife and both oral and denture hygiene was poor. This was especially marked in the hospitalized patient group whose greater age, debility and dependence for help from others was a contributary factor.

Nearly half the teeth retained required restoring and 70 % of the patients needed the extraction of 2 or 3 teeth. Between half and three quarters of the dentures were unsatisfactory, due to the fact that 30 % were more han 10 years old and at least half were damaged or in poor condition. Only 60 of the 442 persons surveyed in Edinburgh had any natural teeth present, 15 of these required periodontal treatment and five needed restorations.

In the London survey (1969) it was seen that subjects from the higher socio-economic groups based on the Registrar Generals' Classification of Occupations (1961) had a better standard of oral and denture hygiene also had retained more of their natural teeth. In addition a greater number wore dentures and these were generally functionally superior.

Oral Lesions

It is most important that all elderly people are carefully examined for the presence of pathological intra oral lesions and especially for malignant disease.

Unfortunately the majority of elderly population surveys that have been published do not record the incidence of oral lesions.

Most people in the geriatric stage of life have not had a thorough oral examination for many years and when this has been carried out by a medical practitioner it is often cursory and under poor lighting conditions.

Although oral cancer is not a common disease the incidence of malignancy is greater in the elderly patient. Pogrel (1974) in a recent survey of cases of oral cancer pointed out that a number of these patients had been recently examined by their dentist who had failed to either detect or recognise the lesion, which emphasises the need for exercising great care when examining the mouth particularly of the ageing patient.

Attention was directed by Storer (1957) in the U. K. to the considerable amount of hidden pathology of the edentulous jaws that was detected by routine radiography. A subsequent pilot survey by Ritchie (1973) of elderly people using an orthopantomographic technique showed that over 20 % of those investigated had radiographically disclosed lesions. A further study by Ritchie & Fletcher (to be published) of 200 elderly patients indicated that although the majority of lesions detected were not serious and were comprised mainly of retained tooth roots the total incidence of pathology might be as great as 40 %.

The numbers and types of lesions reported in surveys of geriatric patients in Britain by Ritchie (1969) in London and by Ettinger & Manderson (1973) in Edinburgh are remarkably similar. These figures are closely comparable to those reported by Bhaskar (1968) in the USA taking into account that in his survey some of the lesions recorded such as tori were considered non pathologic by the British investigators.
(Table III)

Clearly most of the lesions detected were not serious and could be treated without difficulty. One of the most common con-

ditions seen was denture stomatitis which often presented in conjunction with angular inflammation, Ritchie & Fletcher (1973). This form of stomatitis was commonly associated with the continual wearing day and night of traumatic ill fitting, often unhygienic dentures. Candida albicans was almost invariably cultured from swabs of the stomatitis lesions and was considered an important aetiological factor in both denture stomatitis and when present, the chronic angular inflammation. The angular lesions were often due to an extension of the intra oral candidosis into the saliva sodden inadequately supported tissues at the commisures of the mouth.

It has been suggested by Turrell (1966) that one of the most effective treatments for denture stomatitis is to not wear dentures for two weeks, and it is interesting to note that in a recent survey of elderly people (Ritchie et al) no cases of angular inflammation were detected in edentulous patients who did not wear dentures.

Treatment Policy

In this country, and probably in many other parts of the world most people reach an elderly stage of life in a poor state of dental health. It is clear that the problem must be tackled in two ways. Firstly, to do as much as possible to make the elderly person comfortable and, secondly, the long term policy to produce an awareness of the importance of dental care so that people enter this stage of their life in an optimum state of dental health with comfortable, efficient and appropriately designed dentures.

The first priorities must be to render the mouth comfortable, clean and healthy, to provide an efficient masticatory surface so that the patient can enjoy a varied and nutritious diet. Provision of dentures which restore appearance and speech thus making the patient socially more acceptable are of tremendous psychological value.

A large number of elderly people have difficulty in keeping their dentures clean and the need to do so must be clearly emphasised. Dentures should be designed and shaped to avoid adherence of debris and facilitate easy cleaning. The strength of dentures is also important since with advancing years people are more prone to drop and damage their appliances tham younger pe-

ople, especially when cleaning them. Acrylic teeth are less likely to chip than porcelain ones and a good quality cross-linked co-polymer resin is advised for the denture base.

Some form of identification marking should be incorporated in the dentures, indeed it is unfortunate that marking of dentures is not mandatory and that no international coding system has been adopted universally. There are a number of methods that may be easily and cheaply employed which would make the identification of dentures in hospitals and institutions easier also the recognition of a fatality or a wanderer with loss of memory more swift and certain (Turner et al 1976).

It is important to differentiate between the statistical needs for treatment in a section of the community and the real needs, which may be defined as those conditions or deficiencies it is possible to treat or remedy and which will in a positive way directly benefit the recipient.

Surveys have disclosed the extensive need for dental treatment in elderly people and the need to develop screening techniques to identify the needy, the nature of teatment required and the ability of the patient to co-operate in and benefit from treatment.

The patients'motivation in seeking or accepting dental care, their medical state and life expectancy will influence the prognosis for dental treatment. Thus the patients' physical condition and mobility as well as the psychological state are as important as the local intra oral factors.

Mention has been made previously of Regional and Socio-economic differences related to the retention of natural teeth and in part these differences are associated with peoples attitudes to dentistry, oral hygiene, nutrition and, in the past, their ability to pay for treatment.

Often the dentition is in a poor state due to neglect or from the physical inability to maintain a reasonable standard of mouth hygiene. The effects of this in a mouth with reduced salivary clearance when coupled with a diet of highly refined carbohydrates are rapid periodontal breakdown and ring cervical caries.

Extractions should be avoided when-ever possible because of the traumatic psychological effect this may have, however, should

the retention of these teeth prove disadvantages to the retention and stability of an appliance it is better for them to be extracted provided the patient is in a reasonbly state of health. Consultation with the patients physician is always a wise precaution and extractions of roots is contra indicated for the patient with only a short life expectancy unless of course pain is being suffered.

The extensive cervical carious lesions can often be restored although the cavity outline is likely to be extensive and unorthodox. The resin bonded ceramic materials are the easiest materials to employ for these restorations, but have the disadvantage that in time the surface roughens and increases the adherence of plaque. Patient education to reduce the carbohydrate intake and improve oral hygiene by the use of mouth washes after meals and the special adaptations of toothbrushes for the handicapped should all be tried but success will depend on the patients will and ability of co-operation. For those handicapped patients who find rinsing the mouth difficult non-foaming ingestible toothpastes are usefulas are the topical applications of fluoride gel to decrease the incidence of caries and hypersensitivity of the teeth.

Gerodontic Training and Care Teams

Newton (1975) pointed out that peoples' powers of learning are not diminshed by age in the healthy individual although the learning period is often lengthened. However, this inability to learn quickly may result in disillusionment and lack of perseverence so that the provision of new dentures, although satisfactory carried out, may not be accepted by the paient. Because of this problem and the fact that many elderly people are sick, senile or senescent, special techniques need to be employed if success is to be achieved.

There is a need for more research into the oral and dental manifestations of ageing and the provision of dental care for this special category of patient.

Gerodontics should be encouraged to develop into a separate

entity much in the same way as paedodontics, since the field of study is extensive and specialised. It encompasses not only special clinical techniques and thus adaptation for the handicapped bed bound patient, but an understanding of tissue changes in response to disease processes and metabolic changes frequently met in the ageing patient. The detection of oral disease, the importance of correct nutrition, psychiatric conditions commonly affecting the elderly and the problems associated with loniliness in addition to the rehabilition of the cerebro-vascular accident patient and their speech problems, carrying out epidemiological studies and so on.

Success in the treatment of the elderly can only be regularly achieved with an understanding of the patient as a whole rather than as a dental problem.

At the present time little of this is covered in undergraduate study neither have specialist posts been created in this field of specialisation.

With increasing resources being devoted to care of the elderly it is opportune for gerodontics to be established in undergraduate studies and for postgraduate programmes leading to specialist diplomas or higher degrees to be instituted together with the training of ancillary supporting staff.

Since the care of the elderly is a community responsibility training should be primarily based on the Day Hospitals and Health Centres and the development of the care service an Area Health Authority responsibility. The service should be planned in co-operation with the District Hospital Geriatric Medical and Dental specialists. The medical care teams and the lines of communication for these, considered in the context of community care, consist of professional and ancillary staff forming two related teams. The first is the primary care team composed of the general medical practitioners working in conjunction with the social services staff such as the geriatic health visitor, home helps and so on, which are based on the Area Health Authority Health Centres and Clinics and these are augmented by various voluntary organizations.

This team also provides the supporting care of patients dis-

charged from the District or Geriatric Day Hospital.

The second is the specialist team led by the Consultant Geriatrician and the junior medical staff of the Geriatric unit of the District Hospital supported by para medical staff such as the Physiotherapists, Speech and Occupational therapists. This team supplies the expert inpatient treatment and continuing care provided in the Day Hospitals.

These teams work in close harmony with the lines of communication being largely established and maintained by the social services staff.

It is recommended that a third team sholud be instituted to cater for the denal care of the elderly, utilizing similar lines of communication with the care programmes administered by the staff of the Health Centres.

The dental team would consist of an Area based hospital gerodontist operating in a consultant advisory capacity; specialist community dentists who have received special training in gerodontics, located in the Health Centres and general dental practitioners trained in this specialty by a continuing education programme.

Ancillary support would be provided by dental hygienists and dental surgery assistants both being trained to give hygiene instruction, advice in dental care and able to carry out simple investigations for survey and screening purposes. In addition the dental technicians must be trained to carry out the special techniques necessary for the provision of the modificd prostheses that may be required for the elderyl.

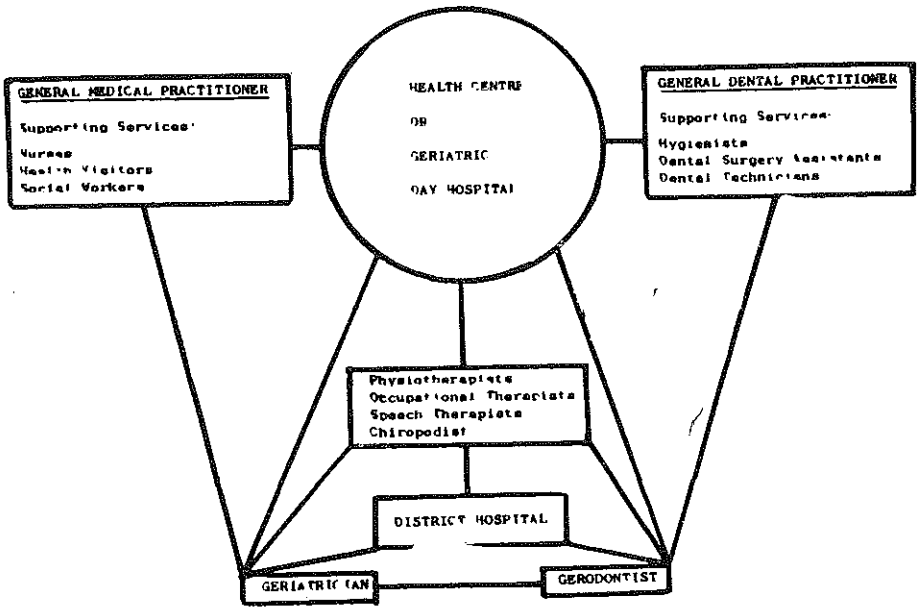
GENERAL MEDICAL PRACTITIONER
Supporting Services
Nurses
Health Visitors
Social Workers
HEALTH CENTRE
OR
GERIATRIC
DAY HOSPITAL
GENERAL DENTAL PRACTITIONER
Supporting Services
Hygienists
Dental Surgery Assistants
Dental Technicians
Physiotherapists
Occupational Therapists
Speech Therapists
Chiropodist
DISTRICT HOSPITAL
GERIATRICIAN
GERODONTIST

Figure 1

TABLE I — DISTRIBUTION OF SAMPLES

London — average age 74 years			Edinburg — average age 79 years				
				Persons resident in Homes			
Out-patients	In-patients	Total	In-patients	Private	Local Autohrity	Day Hosp	Total
200	100	300	98	97	134	115	442

REGISTRAR GENERALS CLASSIFICATION OF SOCIAL CLASS

I & II	III	IV & V	I & II	III	IV & V
28	42	30	18	42	40

MALE	FEMALE	MALE	FEMALE
30	70	38	62

TABLE II — DENTAL STATE & TREATMENT NEEDS

EDENTULOUS PATIENTS

% Edentulous		% with dentures 10 yrs. old		% with unsatisfactory dentures		% without dentures	
London	Edinburg	London	Edinburg	London	Edinburg	London	Edinburg
71	90	37	65	45	73	11	8

PARTIALLY EDENTULOUS PATIENTS

		Percentage of patients requiring :					
Average number of teeth		Fillings		Perio. Treatment		Extractions	
London	Edinburg	London	Edinburg	London	Edinburg	London	Edinburg
10.6	12.0	45	70	46	39	69	58

TABLE III — ORAL LESIONS

Lesions	Percentage of Sample Population		
	London G. M. Ritchie	Edinburgh Ettinger & Manderson	U.S.A. Bhaskar.
Chronic Fibrous Hyperplasia (Epulus Fissuratum)	3	11	3.1
Chronic Imflammatory Papillary Hyperplasia	1	1.8	2.9
Denture Stomatitis	17	12.4	—
Angular Cheilosis	9	5	—
White Lesions	2	12.0	21.9
Ulceration	2	1.4	4.8
Benign Growths	2.7	3.0	7.3
Malignant Tumours	0.3	0.0	0.3
Tongue Lesions	41.7	31.7	22.3*
Varicosities	—	67.6	49.0

* This does not include Atrophic Tongues.

ÖZET

Birleşik İngiltere krallığında, 6 milyondan fazla yaşlı insan yaşamını sürdürmekte, bunların 2 milyonunu sakatlar meydana getirmektedir. 2 milyon sakat insanın 3/4 ünü çok şiddetli sakatlar meydana getirmektedir.

Araştırmalar bu kişilerin çoğunluğunun dişhekimliği açısından tedaviye ihtiyaç gösterdiklerini ancak, bunların % 10 un tedavi için başvurduklarını ortaya koymuştur. Tüm sakatların en azından yarısının dişhekimliği açısından tedavi edilebileceği ve bu kişilerin tedaviden yarar sağlıyabileceği bir gerçektir.

Bu kişiler için uygun ulaşım araçları sağlanabilirse, muhtemelen 5 milyon hasta, sınırlıda olsa tedavi elde edebilecek ve bunların yarıdan fazlası hekimle aktif olarak işbirliği yapıp, tedaviden yarar sağlayabileceklerdir.

Bu yazıda bu problemleri yanıtlayabilecek kuruluşlar, personel eğitimi ve geriatrik kişinin sağlığında toplumun payı anlatılmış ve bunların ortaya çıkarılabilmesi için önerilerde bulunulmuştur.

Bu önerilerin yapılabilmesi için gerekli olan para çok olmakla beraber, bu problemin toplumda çok iyi anlatılmasıyla halkın dişhekimliği açısından sağlıklı şekilde yaşlanması sağlanabilir. Buna ilâve olarak, gerekli kolaylıkları sağlamak için sağlık merkezlerinin ve kliniklerinin kullanılması, halk sağlığı dişhekimleri ile, dişhekimlerinin devamlı eğitilmesi bu güncel problemin çözümünde büyük katkıda bulunacaktır.

SUMMARY

There are over 6 million elderly people in the United Kngdom of whom 2 3/4 million are handicapped, about 3/4 million of them severely.

Surveys have shown that the majority of these people neeh dental treatment although less han 10% seek it each yer. At least half of this total number are treatable and would actively benefit from treatment. Probably about 5 million patients could with suitable transport or with the availability of mobile equipment receive limited dental care and more than half this number could actively co-operate and benefit from treatment ifthis were available.

The need for the training of personnel and organization of resources to meet this promlem and to participate in the community care of the geriatric person is presented together with outline suggestions on how this might be achieved.

Although the financial implications of establishing care on this scale are consierable much could be done by publicity so that people reach old age in a good state of dental repair. In addition utilization of health contres and clinics to provide the necessary physical facilities and continuing education programmes for community health dentists and general dental practitioners could do much to alleviate the present problem.

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