The Journal of Laryngology and Otology

(*Founded in* 1887 *by* MORELL MACKENZIE *and* NORRIS WOLFENDEN)

November 1967

The Conference

BY CAROL WENGRAF

THE Second British Academic Conference in Otolaryngology was held under the gracious patronage of His Royal Highness, Prince Philip, Duke of Edinburgh, at Oxford from 30 July to 4 August 1967. About 800 delegates attended, an increase of nearly 300 over the previous Conference in 1963, and it is noted with great satisfaction that this increase was almost wholly due to greater support from our colleagues from overseas. There was an extensive academic programme of formal papers each morning, and during the afternoons there were panel discussions of a more informal nature. These are reported in detail in the following pages. Concurrently there were excellent Instructional Sessions covering many topics, as well as films brought from Otolaryngological Centres spread over the world. There were also scientific exhibits and a trade exhibition arranged by the drug companies and instrument manufacturers, who also provided valuable support in many other respects.

In a city such as Oxford the programme could not be wholly academic and an extensive social programme had been organized. The Master, Sir Terence Cawthorne, held a reception in the Ashmolean Museum on Monday evening at which the champagne flowed freely to the enjoyment of all.

On Tuesday evening a large party saw Coriolanus performed by the Royal Shakespeare Company at Stratford-upon-Avon, and on Wednesday afternoon the sun shone on a Garden Party in Academic dress held in the garden of Trinity College by the courtesy of the President and Fellows, at the most generous invitation of the University and the City Corporation. On Thursday a formal banquet was held at Rhodes House; the toast by

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the Master, Sir Terence Cawthorne, was answered by Senator Joseph Sullivan of Ontario on behalf of the guests. On Friday evening a farewell party and fork supper was given by the Chairman and Governors of the United Oxford Hospitals at Osler House and a large party went to Stratford to see, appropriately, "All's Well that Ends Well".

The numerous letters of congratulation that the officers have received testify to the success of the Conference and there seems little doubt that it will become an established institution indicating the vitality of the specialty in the United Kingdom.

Acknowledgments

I am indebted to Sir Terence Cawthorne for the text of his inaugural address and to Professor I. D. A. Johnston for the abstract of his paper. I should also like to thank Mr. Colin Johnston, the reporter of the first conference, for his help and advice and Mr. L. F. W. Salmon, the indefatigable Secretary, for his support at all times. Finally I should like to thank Miss V. Oastler for her help with the typescript.

OPENING CEREMONY

The Conference was opened on Monday, 31 July at the Examination Schools in Oxford by the Vice-Chancellor of the University, Kenneth Turpin, Esq., M.A., B.Litt., who welcomed the Conference to Oxford on behalf of the University and Medical School.

The Past Master of the Conference, Mr. I. Simson Hall, F.R.C.P., F.R.C.S.(Ed.) welcomed and installed the Master of the Conference, Sir Terence Cawthorne, C.B.E., F.R.C.S., Hon. M.D. (Uppsala) referring to his standing in the profession and his friendship.

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Opening Speech at Second British Academic Conference in Otolaryngology

By Sir Terence Cawthorne

First of all I would like to thank the City and the University of Oxford for allowing us to hold the Second British Academic Conference in Otolaryngology in their beautiful and world famous University City. Of course, we welcome you all here to this Conference and we are delighted that so many of you from overseas have joined us despite the uncertainties of our present times. The Officers have worked hard to provide us with an interesting programme and I am confident that with the help of you all, it will be a great success. But there is one subject which I think must be in the hearts of all who work in our specialty which is not on the programme and about which I would like to talk to you this morning. This is the ever increasing difficulty in encouraging young doctors to enter the field of otolaryngology. There has, in recent years, been such a vast expansion in the need for young doctors in hospitals to participate in the development of new branches of medicine and surgery, for example open heart surgery and the artificial kidney, so that there are not enough doctors to go round, and our specialty is one that is suffering badly from a lack of new recruits.

A first glance at this problem may suggest that our specialty is not of sufficient interest to attract the young doctor but I think the real reason is the lack of exposure to our particular discipline during the young doctor's student days.

For instance, in his pre-clinical studies the structure and function of the ears, nose and throat and of their contained special senses of smell, taste, hearing and balance have been left to the end of the course at a time when the student is much more occupied in revising what he has already learnt than by the study of new and not easily demonstrated details of structure and function of the upper respiratory tract and ear. From time immemorial, the study of both anatomy and physiology has been concentrated upon the larger and more readily demonstrated, and consequently more easily understood, aspects of bodily structure and function. By the time the student has waded through more than two thousand pages of information about the human body and how it works, he may well find it difficult to absorb any more. And yet these final pages

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contain much that is essential to man's well being and happiness for in order to enjoy life man needs his special senses and many of these come within our province as otolaryngologists. The poet Euripides more than two millennia ago wrote ". . . Whom the gods wish to destroy, they first deprive them of their senses . . ." and a mere 400 years ago our own poet Shakespeare wrote of the seventh age of man " . . . sans eyes, sans teeth, sans everything . . ." He might for the sake of completeness have added "sans taste, sans smell, sans hearing and sans balance". So the poets of long ago knew the importance to man's well being of his special senses even though the way in which they work has until recent times been accepted rather than understood.

The effects of sensory deprivation are attracting the attention now of physiologists and psychologists, which may be the reason why in the latest edition of Best and Taylor's Physiology the special senses have been brought forward from the very end of this 1,700 page work, to the front part after the general introduction.

When the medical student reaches the wards of his teaching hospital, he will find that the diseases from which the patients suffer are reflected in the mortality rate rather than morbidity rate, or in other words, the beds in the hospitals are largely filled by patients who may die if they are not treated in hospital rather than patients whose illnesses are not severe enough to demand in-patient hospital treatment. The student during his first year of hospital work will very largely see patients who come within the province of general surgery and general medicine. This is the most impressionable period of his clinical experience and he inevitably comes to believe, and he is not always discouraged by his teachers in this, that what he is seeing is real medicine. After this he will spend some months in the obstetrics and gynaecological wards.

TABLE I.

Discharges From Hospital Per 10,000 Population England and Wales 1959.

Obstetrics & Gynaecology ..	173·4
Digestive	106·9
Orthopaedic and Injuries.. ..	103·5
Neoplasms	66·5
Upper respiratory	65·7
Cardio-vascular	44·2
Lower respiratory	39·5
Neurological	34·1
Allergic Endocrine and Metabolic	19·1
Urinary	13·3

During the last year and a half of his clinical studies, his attention is divided between learning new disciplines in special departments of medicine and surgery and revising what he has already learnt in his first 18 months of clinical work.

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Thus the student's interest which was captured when he came to the wards by what he saw during the first half of his clinical studies makes him feel, not without reason, that what he has already been taught is representative of what he will be questioned about in the final examination. But all this bears little relationship to what he is likely to meet with in general practice as the following table shows.

TABLE II.

NUMBER OF PATIENTS IN CERTAIN DISEASE GROUPS SEEN EACH YEAR BY A GENERAL PRACTITIONER.

Upper respiratory tract	707
Lower respiratory tract	168
Arthritis and rheumatism ..	145
Heart disease	47
Cancer	11
Appendicitis	9
Nephritis and nephrosis	1

In consequence when he is assigned during his last 18 months or so before his final examinations to what since time immemorial have been known as special departments, he finds some difficulty in taking any great interest in diseases which may not always jeopardize life, which appear in such large numbers in the Out-patient Department, and about which he is unlikely to be questioned closely in the final examination. He may have come to believe that the only things worthy of his attention are the diseases which are dangerous to life. Other diseases such as, for the most part, those with which we as well as other doctors deal, do not often threaten life, and are often referred to and thought of as being trivial or minor. But, you know, nothing which takes a patient to a doctor is trivial or minor to the sufferer and sometimes so-called trivial or minor things can lead to the more serious disorders. Again may I show you a list of the causes of rejection from National Service of a series of young men.

TABLE III.

MEDICAL CAUSES OF REJECTION FOR NATIONAL SERVICE (1953) PER 10,000 CASES EXAMINED.

Ear, nose and throat	26
Orthopaedic	25
Mental defect	20
Ophthalmic	19
Digestive	6
Chest	4

From this table you will see that ear, nose and throat disorders were the commonest cause of rejection from National Service which suggests that conditions which may have been regarded in the first instance as trivial, can have far-reaching consequences to the general health of the

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nation. It is interesting also to note that the commonest causes of disability in this table include those which the student and young doctor may not have been given the opportunity of studying too closely.

Once the student has qualified he has to spend a year in pre-registration House Officer appointments. Unfortunately some undergraduate teaching hospitals in Universities have taken the view that Otolaryngology is not suitable for pre-registration House Officer appointments and I may add the same view is sometimes taken about Ophthalmology and Orthopaedics. Thus experience in these branches of surgery that are responsible for the commonest cause of physical defects in young men is denied him. Instead the new House Officer is offered still further experience in branches of medicine to which he has already been well exposed during his student days, and it is natural for him to prefer to continue to work in a field of which he already has some knowledge rather than to be assigned to some new field with which he is unfamiliar. Consequently the newly qualified but not yet registered doctor continues to regard special departments as branches of medicine which hardly merit his serious attention and yet as I have already shown in the first table, if and when he finds himself engaged in general practice, much of his time will have to be spent in the care and attention of patients suffering from ear, nose and throat disorders. You know, I think it is quite possible that a contributory factor to the general dissatisfaction among general practitioners at the present time is this discrepancy between what the student is taught in hospital and what the doctor is called upon to treat in general practice.

Now I have mentioned some of the problems concerning otolaryngology as it is being taught today and I think that one way to capture the interest of the student in our work is to appoint him full-time to an ear, nose and throat firm for a period, even if it is only for a few weeks. Only in this way can he give it his undivided attention.

With regard to pre-registration House Appointments this is a golden opportunity for newly qualified students to gain practical experience in branches of medicine and surgery which they have not had the opportunity to do in their student days. I think you would all agree with me that the care and management of patients suffering from diseases of the ear, nose and throat will teach the newly qualified doctor just as much about the handling of patients as any other branch of medicine and I think that a rotating residency of 3 months in four departments not necessarily general medicine or general surgery to which he has already been adequately exposed, would be of the very greatest value to the newly qualified but not yet registered doctor. The final examination should, I feel, include an otolaryngologist as an examiner. This I know happens in the Universities of Oxford, Bristol, Manchester and London. We as otolaryngologists can help by improving our undergraduate training programme. One way in which we can do this is to make the inspection

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of the ear, nose and throat easier for the beginner. Much practice, as we all remember, is needed to make full use of a head mirror and for some years now I have found that it is much easier to use and to teach students how to use the Stortz headlight. But no matter how interestingly we present our subject, the undergraduate's attention will only be engaged if he knows that he will be liable to be questioned in the final examination by an expert on what he has been taught as a student.

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Sensori-neural Deafness of Peripheral Origin

Monday, 31 July at 10.30 a.m.

Chairman: THE MASTER, SIR TERENCE CAWTHORNE

PROFESSOR H. F. SCHUKNECHT, *Boston, U.S.A.: Pathological Types of Sensori-Neural Deafness*

THE morphological changes occurring in acquired sensori-neural deafness of peripheral origin may be classified into five main patterns, based on the selective involvement of major anatomical structures in the cochlea. These structures are:

1. The Stria Vascularis.
2. The Endolymph.
3. The Organ of Corti.
4. The Spiral Ganglion.
5. The Basilar Membrane (hypothetical).

Pathological alterations may involve these structures individually or in combination. The classification has a clinical significance in that each type is characterized by unique patterns of functional disturbance.

1. *Atrophy of the Stria Vascularis*

This is a distinct disease entity which usually develops in middle age and is slowly progressive. The atrophic changes involve the apical turn of the cochlea and occasionally the middle turn, the patients never become severely deaf and it is bilaterally symmetrical. The audiometric pattern is flat, speech discrimination scores are excellent, and even with a 50 db. loss the speech discrimination is 90 per cent., so amplification is successful. The organ of Corti and the spiral ganglion are normal.

2. *Endolymphatic Hydrops*

Ménière's disease has as its primary pathological change an increase in the volume of endolymph. Hydrops of the membranous labyrinth has been produced in cats and guinea pigs by destroying the endolymphatic sac, but it has not yet been proved that the function of the sac is resorptive. The organ of Corti and the spiral ganglion are normal until late in the disease. The audiogram shows a flat curve, there is complete recruitment and discrimination is moderately affected. Although the deafness is usually progressive it tends to be self-limiting and is rarely lost completely.

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3. *Degeneration of the Organ of Corti*

Acoustic trauma, bacterial invasion, ototoxic drugs and viral labyrinthitis can damage the organ of Corti. The outer hair cells are the most sensitive and the pillars are usually the most resistant to damage. A slide to show complete loss of all hair cells due to Kanamycin ototoxicity was shown. This was bilateral and there was no hearing response in either ear.

4. *Degeneration of the Spiral Ganglion*

This is often seen in the very old and is probably a reflection of senile degeneration in the rest of the central nervous system. Speech discrimination is lost out of all proportion to the loss of pure tone and this has been termed phonemic regression. The organ of Corti is usually normal but there may be complete absence of the spiral ganglion cells.

5. *The Pathology of the Descending Audiometric Curve*

At present there is no known pathological counterpart of this clinical picture. It is a slowly progressive high tone loss occurring late in life and it may be inherited. It could possibly be caused by a stiffening of the basilar membrane, as the organ of Corti and the spiral ganglion are normal.

These five patterns can be distinguished when occurring in pure form, but the morphological changes once incurred are mainly irreversible. The otologist's purpose is to diagnose, to eliminate any causative factors, and to offer prognosis and counsel.

DR. J. TONKIN, *Sydney: The Diagnosis and Assessment of Peripheral Sensori-neural Deafness*

When diagnosing a case of sensori-neural deafness it is important to take a careful history including the family history, whether there is any accompanying vertigo, pain in the ear or tinnitus. The absence of paracusis and indeed a marked decrease in discrimination when the ambient noise level is only moderate is a feature of sensori-neural deafness. Examination of the external meatus and drum is usually normal but, for example, after an attack of Ménière's disease, dilated vessels may be seen running down the handle of the malleus. Partial or complete anaesthesia of the posterior meatal wall is frequently present in cases of acoustic neuroma.

Audiological investigation should include a pure tone threshold audiogram, the shape of which may be characteristic, for example in rifle blast, but there is no typical picture for an acoustic neuroma. In a unilateral sensori-neural loss, recruitment is tested for by the Fowler's alternate binaural loudness balance test (ABLB) at every frequency possible. The presence of recruitment is seen in Ménière's disease, but not

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in conductive deafness. It may occasionally be seen in an acoustic neuroma, and is attributed to ischaemia of the end organ by pressure on the blood vessels in the internal auditory meatus.

The short increment sensitivity index (SISI) shows that in hearing losses due to cochlear lesions the patient is able to discriminate smaller intensity changes than a listener with normal hearing. The finding of a high score in a sensori-neural deafness is against, but does not exclude, an acoustic neuroma. Sometimes a negative response to SISI is found because of rapid tone decay, and again a false positive SISI may be obtained by an unwary observer when continuous tone has decayed and the increments only are heard. Speech discrimination should always be tested in sensori-neural deafness. In acoustic neuroma there is frequently severe loss of speech discrimination out of proportion to the pure tone loss. The tone decay test is very useful to distinguish between retrocochlear and cochlear lesions especially at low frequencies but it is necessary to carry out the whole battery of tests.

The cerebro-spinal fluid is also examined and in general the larger the tumour, the greater the amount of protein. Examination of the perilymph is a promising new field. Radiological examination will diagnose acoustic neuroma in over 80 per cent. of cases and contrast studies of the posterior fossa not only demonstrate the presence or absence of a tumour but delineate its size and relation to neighbouring vital structures. Recent work with only 2 c.c. of Myadil are sufficient for diagnosis and considerably reduce the morbidity. Electronystagmography should be performed in all cases where there is any doubt as to the diagnosis. It is the only method whereby a quantitative estimation may be made of the intensity of the caloric response.

MR. I. ROBIN, *London: Clinical Management of Sensori-neural Deafness*

It is important to make an accurate diagnosis before management can be begun, and the difference between those born deaf, those deaf before the age of 2 and those who have acquired deafness after speech had been learnt, all constitute a different problem. Congenital deafness can be reduced by preventing the taking of certain drugs and treating rhesus incompatibility. Acoustic trauma can be reduced by protecting susceptible people, and ototoxic drugs should not be used. Cures are regrettably few, though the occasional case of serous otitis may mimic a perceptive deafness by impedence of the footplate. Stellate ganglion block has occasionally cured a case of sudden deafness, and withdrawal from noise may be followed by recovery.

Palliation—This is mainly rehabilitation, early training, psychotherapy and the occasional operation. Antibiotics and steroids have improved some cases of syphilitic deafness. It must be pointed out to the deaf that it is the consonants and the rhythm that make speech intelligible.

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With children early and prolonged training with powerful hearing aids is necessary, and the position must be explained to the parents and proper school facilities provided. In acquired deafness, distortion and recruitment make comprehension much more awkward, especially if the acoustics are bad or if there is a lot of background noise. It must be explained that hearing aids will not provide perfect hearing in this type of deafness. Lip-reading should be more widely used rather than relying solely on a hearing aid. Hearing aids should be regularly inspected and relatives should be instructed to speak clearly. Induction coils will soon be fitted to all aids allowing freedom of movement and better feedback, allowing monitoring of the voice. Group aids are very useful in the classroom and so are visual aids for viewing while lip-reading. A better understanding of the handicap that severe sensori-neural deafness gives will make the hearing public more helpful. Improved electro-acoustic and electronic devices will help the partially and severely deaf but above all new methods of prevention and cure are needed.

SIR TERENCE CAWTHORNE

In a series of nearly 500 cases of acoustic neurofibroma all had abnormal vestibular function although four or five had normal hearing, using the original method described by Fitzgerald and Hallpike. In bilateral Ménière's disease, especially when the hearing fluctuates, decompression of the saccus endolymphaticus is most beneficial.

MR. S. ALLINSON, *Boston, Lincs.*

The early induction of labour in elderly primigravida should help to prevent foetal anoxia and may reduce the incidence of deafness.

MR. J. PULEC, *Rochester, Minnesota*

A series of slides was shown of contrast medium outlining acoustic neuromata of increasing size, and one case with bilateral tumours. At the Mayo Clinic Ménière's disease is being treated by the insertion of a metal tack through the footplate into the saccule. There is only a 10 per cent. hearing loss in these cases.

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Second British Academic Conference

Panel Discussion on
Problems of Pharyngo-oesophageal Replacement

Monday, 31 July at 2.30 p.m.

Chairman: Mr. John Simpson, *London*

Panellists:

Mr. Douglas Fairman, *Bristol*
Dr. Joseph Ogura, *Washington*
Mr. Douglas Ranger, *London*
Mr. Philip Reading, *London*

The Chairman opened the proceedings with a survey of the history of the various methods which have been used for replacing the pharynx and oesophagus starting with von Langenbeck who removed the larynx and a considerable portion of the pharynx in 1875, but the first successful repair after this sort of procedure seems to have been by Hockenegg in 1892 using skin flaps. He outlined the various types of skin flaps which have been used but, with the advent of radiotherapy, these methods are of limited value and various portions of viscera either with pedicle, or with vascular anastomosis, have been developed. Left colon was first used successfully in 1953 at St. Mary's Hospital, London. Venous thrombosis is the greatest obstacle to success of revascularized grafts, but plastic repair can always be used later if necessary.

Mr. D. Fairman: There is a high overall operative mortality when colon is used as replacement especially by the intrathoracic route. Colon has, however, several advantages; the general condition of the patient is improved, the period of treatment is short (they are usually only in hospital for 4 weeks) and the stomach is retained as a digestive organ. This is in marked contrast to the lot of the patient treated with radiotherapy where the course is long and is followed by much discomfort. One should possibly compare the failures of each type of treatment. Those with colon replacement were, all but one, active and swallowing well to within one month of death. This compares favourably with those who have had radiotherapy who die slowly and with considerable pain and feeding difficulties.

The abdominal surgeon prepares a length of colon with the blood supply from the left colic artery and the arterial arcades in the mesentery maintain the blood supply to the whole length. The head and neck surgeon

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removes the larynx and pharynx and does either a unilateral or bilateral block dissection. The oesophagus is mobilized, the colon temporarily attached to the lower end, pulled up through the posterior mediastinum and anastomosed to the pharynx.

The indications for this operation are carcinoma of the cervical oesophagus and post-cricoid region. Subcutaneous colon is probably more suitable for carcinoma of the pharynx and piriform fossa as it is not so important to remove the oesophagus, and the mortality is less. Colon appears to be resistant to invasion by carcinoma. In two cases at post mortem, 18 months and 2 years later the colon was still grossly and histologically intact.

DR. J. OGURA: The treatment of cancer involving the pharynx and upper oesophagus presents a very considerable problem because of the difficulty in reconstruction, because of mucosal extension and the relatively high incidence of a second primary in the stomach.

In the United States cases present early and they are seldom treated with radiotherapy so it is easier to perform subtotal excision and repair with skin flaps. Laryngograms are useful to determine the extent of the lesion pre-operatively and, for example, the posterior pharyngeal wall can be excised and the defect skin grafted, or one cord and arytenoid removed and the defect again grafted leaving a stent in place to prevent stricture formation. This is not possible after radiotherapy.

The problem of post-cricoid carcinoma in the States is very much less common than in England. Free skin grafts over stents to repair the pharyngo-oesophageal defect all stenose and, at present, bilateral full thickness skin flaps from the chest wall are used. The problem with this type of repair is that it is difficult to get low enough, local recurrence in the skin flap is not uncommon and the oesophageal voice is not good. Subcutaneous colon replacement is only used for benign lesions.

MR. D. RANGER: At the Middlesex Hospital Professor Le Quesne and I use pedicled stomach to repair the defect following pharyngo-oesophagectomy for post-cricoid carcinoma. At present the routine is to give a full course of radiotherapy followed a few weeks later by surgery. The whole length of the oesophagus is removed and replaced with a pedicled graft of stomach. Mobilizing the stomach as a separate procedure beforehand is not advisable as many adhesions develop. In a series of twenty-one cases, three had no block dissection, six had a unilateral block plus hemithyroidectomy and twelve had a bilateral block and total thyroidectomy. There were four operative deaths. One of these, however, had been classed as incurable and given "palliative" irradiation and a gastrostomy 9 months before being referred and had had to have an emergency tracheostomy later. In him, examination of the specimen

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showed growth to within 8 cm. of the cardia. There have been ten subsequent deaths of which eight were due to recurrence from 3 months to 2 years post-operatively. In one, treated for carcinoma of the trachea, the innominate artery ruptured, and one other death was due to gross crusting in the trachea in a woman who developed extensive herpes zoster and was admitted under a general physician to another hospital. The advice of an otolaryngologist was not obtained until the patient was moribund. There are seven survivors to date, one of whom probably has metastases. The other six are alive and well. Of these one is very encouraging in that after attempted operation elsewhere she was classed as inoperable 2 years and 8 months ago. One woman of 34 with two young children is alive and well 3 years and 4 months later and one woman is alive and well after 8 years and 2 months.

MR. P. READING: Until 1955 thirty-four pharyngolaryngectomies were performed and skin flaps were used to repair the defect. There was relief of symptoms in less than 10 per cent. of cases, 30 per cent. died before the pharyngostome could be closed and few of the others were ever able to swallow. Since then colon transplant has been used in post-cricoid carcinoma. In the first group of seven cases the colon was brought up substernally. This was found to be too traumatic, however, and post-operative morbidity was very high. In view of the difficulties of the substernal route the subcutaneous route is now preferred using the right half of the colon with a blood supply from the middle colic artery. The venous return is at least as important as the arterial supply, and one must make sure that the subcutaneous tunnel is quite free from any constrictions. There are now fifteen cases with only one post-operative death due to pyocyaneus infection. This operation is particularly useful in necks that have been heavily irradiated and in one, although there was a major breakdown of the neck wound post-operatively, the colon remained intact because of its independent blood supply and the wound eventually healed. This operation was also used in a case of subglottic carcinoma who, 2 years after laryngectomy, developed a recurrence in the anterior wall of his pharynx. He is now well and back at work 6 months later. This is a formidable operation but it is justified on the grounds that it relieves the patient of his symptoms and normal swallowing is rapidly achieved.

Questions:

MR. R. MACBETH, *Oxford:* Are these extensive procedures really justifiable, and is it not more sensible to perform reconstruction with skin flaps without using radiotherapy?

MR. FAIRMAN: Repair using viscera is only undertaken because all other forms of treatment are unsatisfactory.

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DR. OGURA: Multi-stage skin flaps have no place especially in America where time spent in hospital is at a premium.

MR. H. SHAW, *London:* What does the Panel consider the overall mortality attributable to the operation of trans-thoracic gut replacement for oesophageal carcinoma?

MR. RANGER: Four groups of results of gastric replacement have a composite operative mortality of 21 per cent. The figures, however, cannot be compared with a simple cervical operation because these series include patients whose growths could not be excised by an operation on the neck alone.

MR. FAIRMAN: There is a mortality rate of 8 out of 18, but this is without any selection. One was a severe diabetic, one had gross aortic incompetence, and one old man was hypotensed and his pressure never returned to normal. Two relatively healthy women died of unknown causes soon after the operation while they were unattended.

MR. H. SHAW: What would be the expected mortality from repair with skin flaps?

DR. OGURA: There has been no operative mortality.

MR. RANGER: Excluding deaths in those patients with intra-thoracic spread there has been 1 death in 18 from gastric replacement but one must consider this in conjunction with the overall picture of the disease. Of 266 patients with post-cricoid carcinoma in the South Metropolitan Cancer Registry there was only 21 per cent. survival at 1 year and 6 per cent. at 5 years.

MR. P. WADSWORTH, *London:* As this procedure is acknowledged to be only palliative, what advantage does colon transplant surgery have over the Stuart tube?

MR. FAIRMAN: We do not acknowledge that it is palliative and one always hopes to find a cure. Mr. Stuart himself only uses the tube in those unsuitable for more extensive procedures.

MR. RANGER: Surely palliative means that no attempt is made to cure at all. This is an operation in which one attempts to cure the patient but it has a low success rate.

MR. G. DALTON, *Birmingham:* Has the Panel had trouble with marked dilatation of the subcutaneous colon producing dysphagia?

MR. READING: The colon should be decompressed by a naso-colic tube in the immediate post-operative period and this will prevent undue dilatation with resultant dysphagia.

MR. K. MALCOMSON, *Bristol:* To what extent is reflux a problem in gastric replacement?

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MR. RANGER: No problem. Presumably they could reflux if they had a large meal and then bent over.

DR. M. SOM, *New York:* Replacement by revascularized segments of jejunum is being used. The venous anastomosis is more difficult to maintain than the arterial but if the graft does not take one can always use skin flaps or pedicled gut.

MR. T. BRADBEER, *Exeter:* What is the cost of this operation in terms of time, assistance, theatre and laboratory facilities?

MR. FAIRMAN: Two surgeons and their assistants and half a day.

MR. J. DAWES, *Newcastle-upon-Tyne:* Can one not vary one's techniques according to the case?

MR. FAIRMAN: Re-vascularized grafts are very difficult and one is not justified in using them at present.

MR. RANGER: The same technique is not used in all patients but only stomachs have been included in this series.

DR. OGURA: At present there is only 15 per cent. survival using laryngotracheal autografts.

MR. D. STUART, *Stoke-on-Trent:* The tube replacement is not intended to be palliative. Is there any evidence that total oesophagectomy is any better than low removal 2 in. below the growth?

MR. READING: There is at present no evidence to support this. It is, however, very difficult to get 2 in. down into the thoracic inlet.

Conservative Surgery of the Larynx

Tuesday, 1 August at 9.30 a.m.

Chairman: PROFESSOR D. F. N. HARRISON, *London*

MR. R. LEWIS, *London: Partial Laryngectomy*

In this country the excellent results of radiotherapy in cases of early laryngeal cancer have meant that very few partial laryngectomies with preservation of laryngeal function are performed. Radiotherapy and partial laryngectomy both give between eighty–ninety per cent. 5 year survival rate in stage 1 glottic carcinoma, but since the function of the larynx following radiotherapy is usually better, this form of treatment is to be recommended. Radiotherapy, however, cannot convert a case

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requiring laryngectomy into one suitable for partial laryngectomy. The only cases suitable for the partial operation therefore are the stage 1 and early stage 2 ones, which have either failed to respond or have recurred after radiotherapy.

The cricoid cartilage should be preserved and if the arytenoid can be saved, function returns more rapidly. When there is a moderate degree of subglottic extension, partial laryngectomy is not advisable.

Supraglottic carcinoma is defined as that involving the laryngeal surface of the epiglottis and the ventricular bands; its incidence is probably greater in Southern Europe and South America than in England. As a rule in Great Britain radiotherapy is used for early cases, and laryngectomy and block dissection for later cases. With partial laryngectomy after irradiation healing is usually uneventful and rapid, but this is not the case with horizontal partial laryngectomies which may be followed by wound breakdown or fatal secondary haemorrhage. In selected cases horizontal partial laryngectomy gives better results than radiotherapy, and since swallowing and speech are retained unimpaired, it must now be seriously considered as the alternative to radiotherapy or total laryngectomy in many cases of supraglottic laryngeal carcinoma.

PROFESSOR E. BOCCA, *Ferrara: Supraglottic Laryngectomy*

Supraglottic laryngectomy is not a "partial" but a radical procedure, because the supraglottic portion of the larynx has not only a different embryological derivation to the rest of the larynx but it also has largely independent lymphatic connections. Tumours of the supraglottic portion hardly ever spread to involve the lower half of the larynx, but those involving the laryngeal ventricle may spread either up or down. In a study of about 200 cases of supraglottic carcinoma 70 per cent. spread to the pre-epiglottic space, 6 per cent. spread through the aryepiglottic fold into the pyriform fossa, but only 1 per cent. spread downwards.

In Italy 33 per cent. of all cancer of the larynx is supraglottic and the age incidence is lower than in other laryngeal cancers. Mirror laryngoscopy is the most accurate method of diagnosing these cases because by direct laryngoscopy it is difficult to see the under surface of the epiglottis. Tomograms of the larynx and contrast laryngography are useful to confirm that the ventricle and cords are not involved. Even in the most limited lesion of the supraglottic larynx, radical removal of all the epiglottis, the pre-epiglottic space, the upper half of the thyroid cartilage and the vestibular portion of the larynx including the aryepiglottic folds down to the arytenoids must be carried out. The pre-epiglottic space is dissected off the undersurface of the hyoid subperiostially. It is important to retain the hyoid because in deglutition the posterior thrust of the tongue depends on firm fixation to this bone, and if it is retained, post-operative dysphagia only lasts 8 to 12 days, whereas if it is removed

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normal swallowing may not be recovered for many months. The reconstruction of the mucous membrane covering is made at the expense of the pyriform fossa, but not at the expense of any traction on the arytenoids. The pharyngostome is closed by pulling the remains of the thyroid ala up to the hyoid and reinforced by the external perichondrium of the upper half of the thyroid, and the strap muscles. In 25 per cent. of cases without palpable nodes there was histological evidence of spread to the lymphatic glands, and in 40 per cent. there was marked lymphatic hyperplasia. There is, therefore, considerable risk leaving the glands when performing supraglottic laryngectomy and bilateral functional neck dissection is combined with all of these cases. In 103 cases there has been a 20 per cent. failure rate; ten of these were due to local recurrence all of which were at the upper margin, the others were from distant metastases. Local recurrences tend to appear within 3 months.

DR. M. SOM, *New York: Conservation Surgery for Carcinoma of the Larynx*

When a carcinoma of the larynx extends from one vocal cord across the anterior commissure to involve the anterior third or half of the opposite cord, it does not respond well to radiotherapy but can be excised in continuity with the anterior segment of the thyroid cartilage. There must not be more than 7–8 mm. of subglottic extension, however, and this can be checked with a mirror after performing the preliminary tracheostomy. Following such a resection there is insufficient mucosa for resurfacing the larynx and stenosis is avoided by inserting a tantalum keel to separate the opposing raw surfaces. Epithelialization occurs and the keel is removed at 6 weeks leaving a satisfactory airway. Selection of cases for partial laryngectomy is important and difficult, for instance, a pulmonary cripple will die from aspiration pneumonia. If a cancericidal dose of radiotherapy has been given the operation should probably not be performed, but a preoperative dose of 1,500–2,500 r. is probably advantageous, though it does make healing more difficult. In disagreement with Professor Bocca he removes a large portion of the hyoid bone as it is easier to remove the pre-epiglottic space efficiently if this is done. Dysphagia is probably due to cutting both internal laryngeal nerves. Selected cases of carcinoma of the epiglottis can be cured in a high percentage of instances by supraglottic subtotal laryngectomy and radical neck dissection. A free margin of several mm. of mucosa above the vocal cord is sufficient to obtain adequate excision of the neoplasm with minimal risk of local recurrence. A cricopharyngeal myotomy is performed to reduce the incidence of dysphagia post-operatively. Complications have been inability to swallow, carotid rupture following radiotherapy, and elevation of skin flaps and the formation of laryngostome probably secondary to perichondritis. One patient required permanent tracheostomy following perichondritis.

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Discussion

DR. J. OGURA, *St. Louis:* The cure rate for epiglottic lesions treated with supraglottic laryngectomy is 78 per cent. This compares very favourably with the 80 per cent. survival rate following total laryngectomy. It is not important to retain the hyoid for normal deglutition, ciné films of swallowing after its removal show a normal thrust of the tongue. Conservation surgery of the larynx is becoming increasingly important and in experienced hands three-quarters of the larynx can be removed, the cord reconstituted with a skin flap, and good function recovered. This is not possible after radiotherapy.

DR. H. KRISTENSEN, *Copenhagen:* Since 1953, 450 cases of cancer of the larynx have been seen of which only 15 were suitable for partial laryngectomy following radiotherapy. These have, however, had good results and there is certainly a place for a limited number of this type of procedure in selected cases.

MR. M. ELLIS, *London:* The embryology of the larynx is not necessarily related to the spread of carcinoma, many cases are seen in which carcinoma, involves both sub and supraglottic portions of the larynx. Lymphoid hyperplasia does not necessarily mean that there is active carcinoma present in the node but that the defence mechanism is coping adequately with the neoplastic cells.

DR. SOM: If there is 4 mm. of normal mucosa between the epiglottic tumour and the anterior commissure this is a safe margin. It can, of course, occasionally spread downwards but in the last 15 years there has not been a recurrence at the vocal cords following partial laryngectomy. Of course, in those cases in which the growth is less than 4 mm. from the cords a total laryngectomy is performed.

PROFESSOR BOCCA: It is not necessary to perform a cricopharyngeal myotomy because there is very little trouble with swallowing post-operatively, because the hyoid is preserved. A myotomy may be useful when more extensive procedures involving removal of the arytenoids are performed because in these swallowing is often grossly disturbed. Pre-operative radiotherapy is not used because it makes healing much more difficult. Post-operative radiotherapy is held in reserve in case recurrences develop.

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Second British Academic Conference

Clinico-pathological Conference

Tuesday, 1 August at 2.30 p.m.

PROFESSOR I. FRIEDMANN, *London*
MR. E. H. MILES FOXEN, *London*

Part I. Non-healing Nasal Granuloma

MR. FOXEN described two cases of Wegener's granuloma. The first was a woman of 51 years who presented in 1960 with left sided nasal blockage of 5 years' duration. 4,550 r. was given to the left side of the face and the lesion regressed. Nine months later the nasal mucosa became granular. She was given Betamethazone 1·5 mgm. o.m. and the lesion again regressed. She is now alive and well without evidence of disease. Professor Friedmann showed histological slides of this case with giant cell arteritis and thrombosed vessels surrounded by lymphocytes. He then showed slides typical of the Stewart type with sheets of histiocytic cells contrasting them with the more widespread Wegener's type with periarteritic nodules and fibrinoid necrosis in the spleen and degenerating renal glomeruli. There are, however, some cases which seem to be intermediate between the two types.

The second case was a man of 55 who, in March 1960, complained of left proptosis of 5 months' duration. Granulations removed from the left frontal sinus were histologically typical of Wegener's granuloma. He was treated with Prednisone 30 mgm. daily, Methotrexate 5 mgm. daily and 1,314 r. radiotherapy. He was, however, very sensitive to Methotrexate, probably because of his poor renal function, and this had to be discontinued after 37·5 mgm. He died in April 1963, of cardiac failure following bronchitis. At post mortem the renal lesions were thought to be due to subacute nephritis rather than Wegener's. The choice of treatment seems to rest between steroids, radiotherapy and Methotrexate, or probably a combination of these. There is recent evidence to support large doses of steroids as the first method of treatment followed by fairly large maintenance doses in the Wegener's type but radiotherapy and Methotrexate in the Stewart type.

DR. H. KRISTENSEN, *Copenhagen:* Can the temporal bone be involved in this type of pathological process?

Both Professor Friedmann and Mr. Foxen said that it could, and should respond to steroids.

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Second British Academic Conference

Part II

Case No. 1.

A nurse aged 20 who was first seen in November 1955, with otitis externa and marked narrowing of the meatus. In December exostoses were removed from the meatus, but these rapidly recurred and 2 months later the mastoid was explored. Histology showed a low grade osteitis, however, and soft osteoid tissue was removed on two further occasions with no lasting effect. The histology was now reported as fibrous dysplasia. A course of 3,100 r. was given in 1957 and following this there has been no further growth of bone in the cavity. Professor Friedmann showed slides of the case showing large areas of fibrous tissue with osteoblasts and newly formed bony trabeculae. Only four similar cases have been recorded.

MR. G. BATEMAN, *London:* Why was radiotherapy used?

MR. FOXEN: It was tried on the advice of Sir Stanford Cade who has had a great deal of experience with fibrous dysplasia in other parts of the body. Further treatment was necessary because she was getting increasing pain.

Case No. 2. (By permission of Mr. C. A. Holborow)

A man of 33 was seen in November 1965, with pain in his left ear of 48 hours' duration and a fluctuant swelling over the mastoid process. Hearing was normal, but the X-rays suggested osteomyelitis of the temporal bone. He also had hard swellings on the tendons related to the ankles, knees and elbows. An extended cortical mastoidectomy revealed a cavity from which a large amount of yellow cheesy material was removed. His serum cholesterol was 640 mgm. and familial hypercholesterolaemia was diagnosed. He is now well. Professor Friedmann showed slides of the case with large cholesterol clefts and foam cells, some of which were calcified. The collections of foam cells distinguish this xanthoma from the inflammatory cholesterol granuloma. The condition is characterized by xanthoma formation in the skin, tendons, intima of the blood vessels and endocardium.

MR. BATEMAN: Why did the operation help the patient as he was suffering from a generalized condition?

MR. FOXEN: It certainly relieved the pain from the local condition and this has not recurred, although there was no evidence of infection precipitating the process locally.

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The Present Position of Chemotherapy in Head and Neck Cancer

Wednesday, 2 August at 9.30 a.m.

Chairman: MR. R. D. OWEN, *Cardiff*

PROFESSOR D. F. N. HARRISON, *London: The Use of Hypothermia for protecting the Bone Marrow during Intra-arterial Chemotherapy*

Unfortunately all the drugs that are now being used in the chemotherapy of cancer are non-specific in their action. They all therefore have some toxic side effect, especially bone marrow depression, which limits their usage. This report is confined to the use of Epodyl, a potent alkalating agent, which is only used intra-arterially.

This drug has the advantage that its concentration in the blood can be measured and one finds that its metabolic life is about 8 minutes. It is important to make sure that the drug gets to the whole tumour and this can be investigated by inserting a dye into the intra-arterial cannula which may reveal large areas of relatively ischaemic tumour. It is important also to give the least amount of this very potent drug into the correct place, because there is bound to be some leakage into the general circulation which will cause severe depression of the white cells and platelets maximal at the tenth or eleventh day. It is often unavoidable that the drug spreads throughout the rest of the external carotid system, and this in some sensitive people causes extensive blistering of the skin, or marked oedema. These lesions are, however, not painful because this drug is neurotoxic and destroys the peripheral nerve endings. In this lies the real value of the drug which controls pain for long periods and allows the patient to lead a relatively normal life despite extension of the neoplasm.

In an attempt to make this treatment safer and so allow one to use it earlier in the disease, whole body hypothermia to 28 deg. C has been used. This temperature probably produces a shunt of blood from the marrow. Hypothermia is achieved by immersing the patient under anaesthetic in 40 gallons of ice cold water and cooling to an oesophageal temperature of 28 deg. C. Recently a more efficient method of cooling has been developed which consists of surrounding the patient with two blankets with tubes inside them through which water is circulated at the required temperature. The neck is opened, the appropriate branch of the carotid trunk is exposed, the drug is injected and immediately the heaters are started. This method has eliminated marrow toxicity and

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there has been no cerebral disturbance after injection into the internal carotid artery.

DR. A. NAHUM, *Los Angeles: Chemotherapy of Head and Neck Cancer*

Cancer chemotherapy can be administered orally, parenterally, by arterial infusion or isolation perfusion. Results with oral or parenteral drugs are uniformly poor. With long-term intra-arterial perfusion Methotrexate and Citrovorum factor are mainly used and the perfusion is kept going for up to 40 days. Of a total of 150 patients who have been followed up from 4 to 7 years only fifteen are at present free of tumour. Of these fifteen, twelve had surgery and/or radiotherapy as well, and only three were cured with chemotherapy. The longer the perfusion the better the results. In some cases, however, the chemotherapy reduced the size of the lesion and made surgery more practicable. In view of the high morbidity and low cure rate the technique is not recommended for general use.

With isolation infusion in which the arterial and venous systems of the part are cannulated and the drug circulated several factors may be varied. For example the oxygenation may be increased which increases the uptake of the drug or the local temperature may be raised increasing the binding of the drug. The time of infusion is limited, however, because of leakage of the drug into the general circulation. After 1 hour the cannulae are removed and the lesion excised. Phenylalanine mustard has been most commonly used and in treating sarcomas this was combined in Actinomycin D. Of a total of twenty-five cases there are at present sixteen free of tumour, one sarcoma and fifteen melanomas. One of the difficulties in assessing the efficiency of this type of drug is to estimate the amount of tumour present. An attempt to do this has been made by labelling the tumour biopsy with tritiated Thymidine, this enables a clear count of the labelled cells. There seems to be an increasing number of head and neck granulomata and there have been some promising results treating these with Cyclophosphamide.

PROFESSOR I. JOHNSTON, *Newcastle-upon-Tyne: The Present Position of Chemotherapy in Head and Neck Cancer*

The unsatisfactory results of conventional treatment in many cancers of the head and neck are examined. A study of twenty-five reports in which over 1,000 patients had been treated by intra-arterial chemotherapy showed that about 8 per cent. experienced an extensive regression and about 50 per cent. had a partial response only.

Factors influencing a failure to respond were examined and it was found that patients with recurrent disease following radiotherapy had no chance of an extensive response and only a 50 per cent. chance of temporary relief of symptoms and a reduction of tumour size. Patients

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who did not respond tolerated significantly lower doses of the drug than those who showed a partial response. Other unfavourable factors were non-epithelial tumours and large tumour masses in glands and other tissues of the neck.

An experimental study suggested that anabolic steroids might increase the tolerance to larger doses of cytotoxic drugs. Five out of thirteen patients treated initially by arterial infusion had an extensive response but there was no evidence to suggest that intra-arterial chemotherapy was as effective as conventional treatment. The relationship of arterial infusion to surgery and radiotherapy was discussed and it was felt that simultaneous chemotherapy and radiotherapy merit further study. A plea was made for an organized controlled clinical trial in this adjuvant field of treatment.

MR. H. ESPINER, *Bristol: Regional Chemotherapy in the Treatment of Head and Neck Cancer*

There is objective regression in about 50 per cent. of cases of tumours treated with chemotherapy, but in only 8 to 10 per cent. is this tumour regression complete and re-growth occurs in most cases within 1 to 3 months of treatment. A very small proportion may remain in regression for up to 2 to 3 years. The most suitable cases seem to be large tumours which have involved surrounding tissues and which would respond poorly to radiotherapy and surgery. Chemotherapy before surgery, as long as the mucosal damage is allowed to recover, does not seem to prejudice healing. More than one course of chemotherapy does not significantly increase improvement but does increase the morbidity. The superficial temporal artery is probably the easiest and safest way of reaching the external carotid system. A blunt ended umbilical vein catheter is used with only one side hole and the position of the catheter is confirmed with fluorescein. Infusion of Methotrexate is continued to toxicity which occurs in about a week. The best results were seen in patients with squamous carcinoma of the mouth and face, ten of whom had total clinical regression lasting 2 years or more. Three of these have, however, developed metastases in the cervical glands and despite block dissections two of these have died with mediastinal disease. If any glands are involved a block dissection should be performed after perfusion.

Discussion

MR. H. SHAW, *London:* Chemotherapy is most useful as a preliminary to other forms of treatment, other simpler methods are readily available for palliation. At the Marsden cases of carcinoma of the antrum are perfused with a mixture of an alkylating agent and an antimetabolite for about 14 days. This is followed by a full course of radiotherapy after

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an interval of a further 2 weeks, and this is then followed by surgery and, if necessary, by intracavity radiation.

Would the Panel give their views on the practical value and place of present methods of chemotherapy in the practice of most otolaryngologists?

PROFESSOR HARRISON: This is an impossible question to answer. This is not a form of therapy for the occasional surgeon as there are so many complications. It is useful in that it can convert an inoperable case to an operable one. There is a place for judicious chemotherapy in palliation, which is especially important because of the long natural history of carcinoma in the head and neck. For example, a patient with a nasopharyngeal tumour can lead a relatively normal life for a couple of years if the pain and mass of glands in the neck can be controlled by chemotherapy.

Panel Discussion on the Problems of Ear Surgery

Wednesday, 2 August at 2 p.m.

Chairman: DR. HOWARD HOUSE, *Los Angeles*

Panel:
DR. RICHARD BELLUCCI, *New York*
DR. BRUCE CORNISH, *Auckland*
PROFESSOR MICHEL PORTMANN, *Bordeaux*
MR. HAROLD ZALIN, *Liverpool*

DR. HOUSE presented the Panel with a series of problem cases and invited their comments.

Problem: A simple case of otosclerosis with a blue footplate. Does the Panel use general or local anaesthetic?

Mr. Bruce Cornish left the final decision to the patient but found that he usually used general anaesthetic. The rest of the Panel, however, used local. All agreed that for a revision where there was danger of damage to the labyrinth, they would favour a local. The Panel felt it was important to preserve the chorda tympani wherever possible, and that there was very little indication nowadays for simple mobilization.

The techniques used were fat and wire, wire and gelfoam, teflon piston and interposition of the posterior crus of the stapes with vein graft.

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During the discussion Dr. House showed several films of operations showing the various problems involved. In cases of obliterative footplate it was felt that in the large majority of cases it was possible to drill out and only very rarely was a fenestration necessary.

Problem: The patient had had a polythene and vein prosthesis inserted 10 years ago and 8 years later while flying he developed acute vertigo and hearing loss. On opening the ear a fistula was seen in the vein graft and there was necrosis of the tip of the incus. Neither Dr. Bellucci nor Professor Portmann had had a fistula using respectively fat and wire and interposition. Dr. House stressed how much more common fistulae were with an eccentrically placed prosthesis with only a small membrane at one side. In the case presented a sheet of gelfoam was placed over the oval window after removing much of the middle ear mucosa to increase fibrosis and a 4 mm. wire prosthesis was crimped on to the incus.

Problem: A young man with a unilateral conductive hearing loss without history of ear disease or trauma.

On opening the ear there was congenital absence of the stapedius and the capitulum of the stapes. The rest of the stapes was mobile. Professor Portmann would remove the crura and put a prosthesis on to the footplate as attempts to reconstitute the joint usually fail. Drs. Cornish and Bellucci would do a routine stapedectomy and Mr. Zalin would place a 0·6 mm. teflon piston on to the footplate. Dr. House had inserted a wire prosthesis after removing the mucosa of the footplate, and the hearing had improved.

Problem: A young man who had had a fractured skull and bleeding from the ear, following this he had a 40–50 db. hearing loss with no loss of cochlear function. On opening the ear the fracture was easily visible just above the chorda tympani and there was an anterior dislocation of the incus, no evidence of the stapes superstructure and a mobile footplate. Dr. Bellucci would remove the incus and put in a malleus-oval window prosthesis, removing the footplate. Dr. Cornish would place a wire from the malleus on to a shattered footplate which he would cover with gelfoam. Mr. Zalin would insert the incus, after removing the long process, between the neck of the malleus and the denuded footplate. Dr. House said that the incus, although dislocated anteriorly, was freely mobile and still attached to the malleus. The footplate was mobile and was removed carefully. Gelfoam was then placed over the window with wire between the incus and the gelfoam.

Problem: A young man who had had bilateral simple mastoidectomies for acute middle ear disease in early childhood since when he had had

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a bilateral 50 db. conductive loss. On opening the ear the stapes was normal but no incus could be found.

Dr. Bellucci would place a malleus-stapes wire prosthesis around the handle of the malleus, with the second loop over the head of the stapes. Dr. Cornish would use a homograft incus which is satisfactory. Dr. House said this case was some time ago and he had used a polythene tube grooved to fit over the stapedius and capitulum and then under the drum as far anteriorly as possible.

Problem: An otosclerotic in whom, when the stapes had been removed, it became apparent that the head of the malleus was also fixed. One now had a floating footplate, and a fixed malleus.

Dr. Bellucci would loosen the head of the malleus, insert a piece of teflon sheeting between it and the dural plate and insert a wire prosthesis. Mr. Zalin and Professor Portmann would remove the head of the malleus and then remove the incus replacing it between the neck of the malleus and the footplate.

Dr. House reminded them that the footplate was otosclerotic.

Professor Portmann then said that he would remove the footplate covering the window with vein and use the incus. If it was not stable he would do a two stage procedure, putting in the incus first and when in 6 months it was well attached to the inner surface of the drum, he would go in again and remove the footplate replacing it with vein.

Dr. House finds about 0·5 per cent. fixation of malleus head which is of unknown aetiology. In this case Dr. House had used a wire prosthesis from the neck of the malleus to the oval window. The wire should be slipped under the periosteum of the neck of the malleus, the length checked, the stapes footplate removed and a sheet of gelfoam slipped in. The prosthesis is swung down on to the oval window and tightened around the neck of malleus only. After this the head of the malleus is removed. This type of prosthesis is very useful in the short or necrotic incus, when there is a facial dehiscence and also in fenestrated ears.

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Second British Academic Conference

Facial Paralysis

Thursday, 3 August at 9.30 a.m.
(This is also the Summer Meeting of the Section of Otology, R.S.M.)

Chairman: MR. MAXWELL ELLIS
President, Section of Otology, Royal Society of Medicine

PROFESSOR H. MILLER, *Newcastle-on-Tyne: A Neurologist looks at Facial Paralysis*

Facial paralysis furnishes satisfying exercises in anatomical diagnosis and also poses unsolved problems in morphology, neurophysiology and aetiology. The paralysis in a corticopontine tract lesion is characterized by sparing of the upper face, because the upper face receives innervation from both cerebral hemispheres. Lower motor neurone type paralysis can be seen in poliomyelitis, disseminated sclerosis (taste is never affected in this) and a space occupying lesion in the cerebello-pontine angle, characteristically an acoustic neuroma. Geniculate ganglion herpes causes acute facial palsy associated with a rash in or behind the ear. Its connection with herpes zoster has been confirmed by serological tests and the motor lesion is almost certainly due to spread of the virus from the sensory to the motor nerve causing a lesion very similar to that of poliomyelitis. It is not due to inflammatory swelling of the nerve root in the canal and it is unlikely that involvement of the nucleus by a virus will be helped by decompressing the nerve peripherally.

Chronic otitis, cholesteatoma and mastoidectomy can also cause facial palsy. Post traumatic facial palsy nearly always recovers spontaneously and, indeed, leaving the patient alone actually seems to produce better results than operation, independent of the time of onset of the palsy. The small proportion who do not recover are those in which the nerve has been torn across in fractures of the middle fossa.

Statistically Bell's palsy dominates the scene. It can usually be distinguished from other types of facial palsy by the acuteness of onset and pain and the tenderness over the stylomastoid foramen. Loss of taste is a bad prognostic sign. Difficulties arise in the discussion about prognosis of Bell's palsy because of the failure to distinguish between complete and functionally adequate recovery. Nine out of ten cases do functionally and cosmetically sufficiently well to make routine surgery unjustifiable. If any voluntary movement is present 5 days after the onset, functional recovery will be virtually complete. It is important, therefore, to be able to distinguish early the 10 per cent. who are going to have a

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poor recovery and will develop distressing sequelae. This can be achieved by relatively simple electrophysiological methods. There can be no doubt that the lesion is usually in the facial canal below the geniculate ganglion and about half are below the origin of the chorda tympani. This is confirmed by applied neurophysiology and by the observations of surgeons who decompress the nerve and note the swollen and congested appearance. Treatment should be confined to the critical 10 per cent. who are going to have a poor functional recovery. The results of early treatment with ACTH are so good that it is difficult to envisage improvement that would justify more radical measures. Neither massage nor galvanism has any proven value in this condition. Cervical sympathetic block has no place and the wearing of a wire splint makes the defect more obvious and does little to increase the comfort of the patient.

DR. D. TAVERNER, *Leeds: The Management of Facial Palsy*

The acute onset of unilateral facial palsy is both disfiguring and disturbing. The diagnosis should be made as early as possible, an accurate prognosis should be obtained and treatment to relieve symptoms and prevent sequelae should be instituted. Facial palsy can be divided into three types:

(*a*) 60 per cent. have conduction block and 100 per cent. recovery in 1 week to 1 month.

(*b*) 15 per cent. have complete denervation in which recovery is never complete and does not begin until 3 months.

(*c*) The other 25 per cent. have partial denervation which is a mixture of conduction block and denervation. These have a variable recovery of 30 per cent. to 90 per cent. and are nearly always satisfied with the result although they always develop associated movements.

Prognosis: There is a higher incidence of denervation in older patients, when the palsy is preceded by pain, and if the palsy is complete when first seen. Orthodox electromyography can only establish the prognosis at the end of the first week of paralysis. Facial nerve conduction latencies remaining below 4·0 m./sec. indicate complete recovery, latencies above 4·0 m./sec. herald partial denervation and in complete denervation the nerve becomes totally inexcitable by the fifth day.

The prognosis can now be established accurately at the onset by measuring the threshold to anodal galvanic stimulation of the tongue using a 120 volt battery and comparing the threshold on the two sides. There should be a difference of less than 5 microamperes on the two sides and if the threshold is normal the likelihood of complete recovery is about 95 per cent. This should be checked daily for the first 5 days.

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Treatment: In a controlled trial, patients with Bell's palsy were treated with daily injections of ACTH gel, 80 units per day for the first 5 days, tailing off over the next 5 days. There was a significant reduction in the incidence of denervation. The treatment was then continued and in the last series reported the incidence of denervation had fallen from an expected 40 per cent. to 16 per cent. in 77 successive cases. The study has been continued and a further 381 consecutive cases have been seen. Of these 216 were thought to be likely to develop denervation. However, only 38 of them developed denervation and of these only 6 (15 per cent.) were severely affected, 5 (13 per cent.) showed partial denervation and 27 (72 per cent.) showed minimal denervation. It is true that the number of patients with facial palsies seen during the course of this work has approximately doubled but the age and sex incidence has remained the same and it is quite clear that the total number of patients undergoing denervation seen in this clinic has been very considerably reduced.

PROFESSOR L. JONGKEES, *Amsterdam: Surgical Approach*

Until recently there was no effective treatment for facial palsy and the plastic surgeon was called in to attempt to reduce the amount of disfigurement in severe cases. Nowadays operative treatment, especially of the nerve, gives very good results. The advantage of reconstruction of the nerve rather than anastomosis with other cranial nerves is the recovery of emotional movements. Facial palsy should be treated as an emergency. Cases of cholesteatoma are still seen that have been treated with vasodilating drugs or massage for several weeks. The best results are obtained when operation is performed within the first 24 hours, after which the prognosis falls off rapidly. Immediate post-operative facial paralysis should be operated upon without delay; immediate repair is much easier than when granulations, scar tissue or connective tissue have grown into the nerve. In traumatic lesions of the nerve it is often difficult to determine clinically whether the palsy is progressing but serial electrical tests will give a good indication. There are, of course, many cases of facial palsy which are not suitable for operation, for example when the lesion is not approachable or in cases of syphilis or herpes zoster.

When the nerve is decompressed in cases of Bell's palsy there is commonly a very marked constriction, usually below the genu, and when the sheath is opened the nerve bulges out and is seen to be covered with grossly dilated blood vessels. Histological examination shows no evidence of inflammation within the nerve, there is only atrophy of the nerve fibres. However, in about 7 per cent. of cases there is no swelling of the nerve and so either the diagnosis is at fault, or it may indicate that the operation was too late. The results of decompression are much better in the first 2 weeks and up to 6 weeks are better than up to 3 months.

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Only those cases with complete paralysis or signs of complete or increasing denervation are operated upon. In early cases there is return of function within days and sometimes within hours of decompression and pain is often relieved. Disturbance of taste is not necessarily a bad prognostic sign.

In a series of 250 decompressions, four tumours of the nerve within the middle ear and three cases with marked osteitis in the mastoid have been found. These were all thought to be idiopathic Bell's palsies and would have been missed if they had not been operated upon. In view of these results there is no justification for a controlled series of operation against no treatment. Some people use the argument that paralysis has been seen to recur after decompression. In three cases this happened and at re-operation the facial nerve had not been decompressed in the first procedure.

Discussion

SIR TERENCE CAWTHORNE: In several cases of patients with severe clonic facial spasm in which the nerve was cut for relief, all electrical activity was lost at the end of 5 days. Treatment should therefore be instituted within this period if possible, as the result of decompression after all electrical activity is lost is not good.

SENATOR J. SULLIVAN, *Ontario:* The anodal galvanic stimulation test of the tongue is very useful and solves many problems. Facial nerve decompression is especially valuable in cases of recurrent palsy and there have been no further recurrences. If he had a facial palsy he would prefer to have it decompressed rather than be treated with ACTH.

PROFESSOR H. KRISTENSEN, *Copenhagen:* In a series of 181 cases of which 140 had complete paralysis those who showed recovery before 3 weeks were more likely to obtain a good result, and those who began to recover later had a much higher incidence of severe sequelae. As there are no completely satisfactory tests to show which cases are going to recover all cases are decompressed who have a complete palsy.

MR. J. GROVES, *London:* In a small trial of ten cases, five were decompressed and five were not. The results of the operated cases were worse. Impedence tests have been used to assess stapedius function within the first 3 to 4 days, and most of the patients who will undergo denervation have stapedius palsy. This and the taste test are both topognostic tests but are they also prognostic tests?

PROFESSOR E. BOCCA, *Ferrara:* The cause of the palsy is compression of the blood supply of the nerve by oedema. Two cases of post-operative

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facial palsy following parotid surgery, without damage to the nerve, developed, presumably due to vascular disturbance, but both these recovered completely and rapidly at 2 and 3 months and this must surely mean that the intra-temporal portion of the facial nerve cannot recover because it is compressed within a bony canal.

MR. S. MAWSON, *London:* One is justified in decompressing those nerves which show degeneration in order to provide optimum conditions for the regenerating neurofibrils to grow down the nerve sheath.

MR. MAXWELL ELLIS, *London:* If one has no tremendous conviction of one's own about the validity of any particular course of treatment, there is no ethical problem in comparing this method of treatment with a series of controls.

DR. I. MUNRO, *Glasgow:* Had a complete facial palsy himself 8 years ago. He gave himself 120 mgm. of Prednisolone for 2 days. Electrical tests showed only partial degeneration and recovery was complete in 10 days. Since this he has seen 74 cases which have been treated with Prednisolone and of these only three cases had complete degeneration with partial recovery.

DR. J. PULEC, *Rochester, U.S.A.:* When decompressing the facial nerve one should not alter the hearing, produce a mastoid bowl or damage the nerve, and one should be able to decompress all portions of the nerve. One works under the incus between the stapes and semi-circular canal using a tiny diamond drill. It is most important to keep the nerve cool. It can be decompressed routinely all the way to the geniculate ganglion. Oedema of the nerve adjacent to the geniculate ganglion was seen in two cases of herpes zoster oticus. When necessary the labyrinthine portion can be decompressed via the middle fossa.

DR. J. DE SA, *Bombay:* Patients are afraid of operation, so all those with evidence of denervation are treated with cortisone and 90 per cent. recovery is obtained. Is it advisable to decompress the failures after 1 month or more?

DR. A. WEISS, *Boston, U.S.A.:* As 50 per cent. of cases are peripheral to the chorda tympani, is the prognosis worse in more centrally placed lesions?

PROFESSOR HENRY MILLER: One thing that has emerged from this discussion is the necessity for a properly organized trial to compare the results of intensive ACTH therapy with decompression in those cases which have

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a bad prognosis. He quoted Lord Cohen of Birkenhead . . . "the feasibility of an operation is not the main indication for its performance".

DR. TAVERNER: A controlled trial of surgery is not possible but one could see whether decompression helped regeneration. Decompression could be performed at 5 days on those cases showing denervation and the results compared with no action. The numbers of this type of case are so small, however, that it would have to be done on a multicentre basis.

PROFESSOR JONGKEES: Decompression can only help those nerve fibres which are dying. By removing the pressure on them it will give them a chance to recover. In wind instrument players, glass blowers, himself and his family, he would choose decompression rather than ACTH. Operation is not usually performed after more than 3 months because the results of operation after this are not good and recovery may continue. If, however, the results at 1 year are poor, nerve grafting should be undertaken.

Clinico-Pathological Conference

Thursday, 3 August at 2.30 p.m.

MR. B. COLMAN, *Oxford*
DR. D. OSBORN, *London*

NASAL AND SINUS TUMOURS

(1) *Transitional cell papilloma of the nose*

MR. COLMAN: A man aged 40 years, presented in 1950 with unilateral nasal obstruction and polypi were removed. These recurred in 1955 associated with swelling of the cheek and radiological evidence of bone destruction. A radical antrostomy was performed. The patient defaulted until 1965 when fleshy polypi were again present. Transantral ethmoidectomy was carried out and a permanent inspection stoma established. The patient remains well.

DR. OSBORN: The histological features are typical with marked infolding of the epithelium and an intact basement membrane. The condition occurs predominantly in males, particularly in the fifth and sixth decades. I have only seen one case undergo malignant change whilst under observation but prolonged follow-up is very desirable.

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MR. COLMAN: Many are confused by the varied nomenclature employed.

DR. OSBORN: The multiple terminology has its basis in the many and varied histological features and we use the appellation "transitional cell papilloma" as an all-embracing term.

MR. COLMAN: The question of malignancy is important and is fundamental to the planning of treatment, especially of recurrences. The surgeon may be inclined to adopt criteria different from those of the morbid histologist. There is a tendency towards at least local recurrence if not malignancy and I feel that simple removal is liable to prove inadequate. Naso-antro-ethmoidal involvement is frequently present when the condition is first diagnosed and treatment should be designed accordingly. After recurrence, a permanent inspection stoma should be provided and, for the patient's comfort, should include the adjacent alveolus.

(2) *Transitional cell carcinoma of the maxillary antrum*

MR. COLMAN: A male, aged 58 years presented in 1958 with severe recurrent epistaxis. Fleshy polypi were present and X-ray examination showed an opaque antrum with evidence of bone destruction. Repeated biopsies were negative but a full course of irradiation was given, followed by palatal fenestration. In 1960 the patient had an enlarged cervical lymph node and a positive biopsy was obtained, for the first time, from the fenestration cavity. Treatment was by block dissection and intracavity radium. In 1965 the face ulcerated over a mass in the cavity. Intra-arterial methotrexate gave no improvement and the eye became fixed. Exenteration of the orbit and excision of the maxilla together with the affected portion of the face was carried out. The patient remains well to date.

DR. OSBORN: The long delay in histological diagnosis is unusual but the ribbon-like pattern with disorientation of cells within the epithelium is typical of this carcinoma. The appearance is due to the marked tendency of the basement membrane to remain intact. The sex incidence is equal, in contrast with that of the papillomata, suggesting that these carcinomata arise *de novo*.

MR. COLMAN: The repeatedly negative biopsies interest me. Fortunately definitive treatment was not delayed but the importance of obtaining histological confirmation of the diagnosis cannot be exaggerated. It is a problem more frequently encountered in the irradiated larynx and clinical judgement must generally take precedence.

DR. OSBORN: Prognosis in the transitional cell carcinoma compares very favourably with that in the more common squamous type. At the

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Institute of Laryngology and Otology, the 5 year survival rates have been found to be 40 per cent. and 12 per cent. respectively.

MR. COLMAN: This was presumably reflected in the slow-growing nature of this tumour, which was a reason for advising further resection. One final point: a temporary denture wired rigidly into position at the end of the operation adds greatly to comfort in feeding and facility in speaking post-operatively.

(3) *Malignant melanoma of the nose*

MR. COLMAN: A woman, aged 60 years, was first seen by Mr. Macbeth in 1964 when she complained of nasal stuffiness. A pink swelling removed from the middle turbinate was reported as malignant melanoma. A wider excision, through a lateral rhinotomy, was carried out but, in 1965, two separate areas of growth were found on the septum. These were treated by septal resection and intra-arterial methotrexate. A further recurrence, high on the lateral wall, was treated by methotrexate and Melphelan. Subsequently, transantral clearance was carried out and external irradiation and intra-cavity radium were provided. The patient has remained well to date.

DR. OSBORN: Malignant melanoma of the skin arises from melanocytes normally present. The nasal mucosa is not normally pigmented though melanocytes may be found in the uninvolved mucosa in cases of malignant melanoma. The junctional naevus of the skin appears to have no counterpart in the nasal mucosa but junctional activity may often be seen in malignant melanomata in both sites. In the absence of this junctional change one has to exclude other sites of primary malignant melanoma and, in the absence of pigment, other anaplastic tumours.

MR. COLMAN: This case raises many questions. Why should four tumours arise in various parts of the nose? Does pigmentation influence prognosis? What part does immunity play and how may methods of treatment be best combined?

DR. OSBORN: It is probable that a field change occurs giving rise to apparent multiple primaries. There is no evidence to suggest that the extent of pigmentation has any bearing on prognosis. Some patients undoubtedly come to terms with their tumours over a long period of time and it would be logical to assume that surgical removal of tumour tissue might shift the immunological balance in the patient's favour.

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Second British Academic Conference

The Catarrhal Child

Friday, 4 August at 9.30 a.m.

Summer Meeting of the Section of Laryngology, R.S.M.

Chairman: MR. T. G. WILSON, *Dublin*
President, Section of Laryngology, Royal Society of Medicine

MR. T. G. WILSON: *Aetiological Considerations and Some Points in Treatment.*

Two-thirds of all infective illness in children under 5 years take the form of respiratory disease. Asthma is the most common manifestation of allergy in infants whereas allergic rhinitis is more common in children of school age. The blockage of the nasal cavities by oedematous mucous membrane predisposes to infection and there is some relation between allergy and infection which is not properly understood. The antibody deficiency syndrome or hypogammaglobulinaemia is a serious but fortunately rare condition. It may be related to hypoplasia of the thymus gland in some cases of which there may be complete absence of the tonsils and adenoids. In mucoviscidosis the paranasal air sinuses are almost always infected and pulmonary and hepatic involvement are very common; few patients survive to adult life. The condition occurs in about one in every thousand live births.

It would appear reasonable that children born after prolonged dry labour would be more likely to suffer from infections of the air passages but in a recent survey of 250 children at the Rotunda Hospital this has been shown not to be so. In many children with running noses and antra opaque on X-ray enlarged adenoids are the cause. When the tonsils and adenoids are enlarged and infected their removal is a most satisfactory operation. There remains a group of cases of chronic catarrhal rhinitis, probably of endocrine origin, in which the condition clears up spontaneously at puberty.

DR. L. CAPEL, *London: The Management of the Catarrhal Child*

Persistent excess secretion into the airways is one of the most common troubles in younger children. Respiratory illnesses which occur in the first year of life predispose to repeated infections later in life but are independent of the severity of the first infection. Boys are more prone than girls and the majority of respiratory infections in childhood are related to virus infections. Some of these are closely related to a drop in

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surrounding temperature and bacterial infection may precipitate or complicate the virus infection. In children who develop a catarrhal condition associated with wheezing there is often a family history of a similar infection. Some of them also have eczema and may develop hay fever in later life. Vasomotor rhinitis in children should not really be called "allergic" except in the rare cases of specific sensitivity to grass pollens. Skin testing in these cases is of little use, especially in the case of food allergy. Sensitivity to animals is not uncommon but, as in other cases, the child grows out of it. A recent survey has not shown any relation between the catarrhal child and the bronchitic adult.

Treatment of these children is not easy, and the parents must be reassured. Drugs are of very little use in the blocked nose but antihistamines and Ephedrine drops are useful in the sneezing and running types. Desensitizing vaccines of other than grass pollens are of little use and may even produce harmful sensitizations.

Betamethasone nasal drops may be used to produce short term relief. Antibiotics can be used if the nasal secretions are purulent.

DR. E. DOYLE, *Dublin: The Paediatrician and the Catarrhal Child*

The stuffy nose of neonates is a condition which is a great nuisance to mothers and the medical attendants. It is extremely common and interferes with feeding. A soft rubber catheter should be passed up both nostrils to demonstrate patency and to clear the nose of tenacious material. Long-term follow-up of these children showed no tendency for the development of catarrh. Mucoviscidosis is a very serious problem and occurs in at least 25 per cent. of siblings. In those who present early with pulmonary trouble there is a very poor prognosis but those who present after the second year with a coeliac type of picture have a better prognosis.

In Dublin chronic sinusitis is very common and presents as nasal obstruction, chronic cough or abdominal pain. The removal of adenoids and the clearing of infected sinuses and the removal of tonsils when necessary produces a great improvement.

Discussion

DR. L. GRAY, *Perth, Australia:* When the tonsils and adenoids are removed at a very early age there is often compensatory hypertrophy of other lymphoid tissue or recurrence of the adenoids. A post nasal drip from chronically infected sinuses will, of course, produce sore throats and does not require tonsillectomy. This should be treated by inserting polythene tubes into the sinuses and washing out twice daily. This cures about 75 per cent. A very large proportion of children with chronic cough and lower respiratory infections have chronic sinusitis.

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MR. L. TAYLOR, *London:* Removal of adenoids is a very useful procedure in the treatment of the catarrhal child. Tonsillectomy is reserved for cases with recurrent attacks of tonsillitis. The child may grow out of the attacks in several years but it is unnecessary that it should be subjected to frequent illness.

MR. G. CHOA, *Hong Kong:* The Proetz apparatus is useful in treating ethmoidal sinusitis in children. Each side should be washed out with saline until it comes clear.

LT. COL. T. MORRIS, *Aldershot:* A 3 month course of sulphonamides in children with sore throat and nasal symptoms reduces the indications for surgery by at least 50 per cent. This would be useful at least to reduce the discomfort of the children on the waiting list.

MR. N. PUNT, *London:* Proetz's displacement treatment is very useful; so are polythene tubes but they are less fashionable than they were.

MR. J. MCAULIFFE CURTIN, *Dublin:* A large proportion of the children in Dublin have an iron deficiency anaemia and if this is corrected the nasal symptoms often improve markedly. Infections are treated with antibiotics when the sensitivities have been determined.

DR. CAPEL: Would "adequate" antibiotic therapy stop the need for antral washout? Is not sniffing better than blowing the nose? Vasoconstrictor drops should never be given to children. Widespread tonsillectomy is not justified but there remains a small minority who really do benefit considerably from the operation.

DR. DOYLE: The anaemia that Mr. Curtin mentions is secondary to the chronic infection and will respond when the infection is cured.

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Second British Academic Conference

Panel Discussion on Tympanoplasty

Friday, 4 August at 2.30 p.m.

Chairman: MR. JOHN BALLANTYNE, *London*

Panel:
PROFESSOR DIETRICH PLESTER, *Tubingen*
MR. IAN THORBURN, *Blackpool*
MR. GORDON SMYTH, *Belfast*

PROFESSOR PLESTER: *Pre- and Post-Operative Management*

Pre- and post-operative treatment is an essential part in dealing with the problem of tympanoplasty. When one considers that chronic otitis media is a chronic condition it is surprising that one can improve and even cure a great number of cases. Before tympanoplasty the nose and naso-pharynx must be clear of infection. Submucous resection only, produces healing of the tympanic membrane following simple otitis in many cases. Cleaning the ear under the microscope followed by instillation of a mixture of Framycetin and Trypsin simplifies tympanoplasty by reducing the amount of inflammation in the middle ear. If infection develops after the operation it is almost always caused by the same organism that was present pre-operatively, and it is therefore important to determine its sensitivities. If the tubal function is poor, or the middle ear mucosa found to be severely damaged at operation, tubal inflation is begun on the first or second post-operative day. Extra meatal transplants of skin are not used because cavities lined with them require regular and thorough cleaning. If they become infected with bacteria or fungus they require very frequent toilet with a sterile sucker and the installation of drops containing neomycin or chloramphenicol. Granulations should be removed with a sharp curette and the base touched with 10 per cent. silver nitrate. Transplanted skin often retains the sweat glands and when this happens the skin must be removed. In an attempt to avoid a cavity the mastoid bowl is filled with fat, bone or muscle, or alternatively the posterior meatal wall is preserved.

MR. THORBURN: *Planning of Tympanoplasty*

The planning of a tympanoplasty is influenced by the patient's presenting symptoms and the clinical examination. Microscopic suction is important for detailed examination and also for treatment. The appearance of an ear at any particular time represents the balance established in the expansion of the active chronic disease process and the healing

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response within the middle ear cleft. Suction clearance may control the disease and avoid the necessity for operation; the hearing of both ears must also be carefully assessed.

Free access must be obtained to all parts of the middle ear cleft when necessary, so a post aural or endaural incision may be used in extensive disease, but a permeatal approach can provide sufficient access in cases of limited attic disease. A permeatal approach may also be satisfactory to repair a small central perforation with a vein graft, but with a larger perforation an endaural incision provides better access and also enables one to obtain temporal fascia easily. The incision is continued down the meatus at 12 o'clock to produce a posterior meatal skin flap. One must remove all disease but in some cases this has been limited by mucosa and one uncovers a type of tympanoplasty. All polyps and keratinizing epithelium must be removed, and it is probably advisable to remove all abnormal mucosa and allow regeneration from islands of normal mucous membrane. The function of the oval and round windows must be assessed. Tympanosclerotic foci may be removed from the stapes and oval window but hearing results are often disappointing. Temporal fascia is established as a suitable material for major tympanoplastic procedures, but skin must always overlap fascia superficially to prevent skin forming deep to the fascia, and it must be deep meatal skin. This has the property of epithelial migration which is important to prevent recurrence of cholesteatoma.

MR. SMYTH: *The Anatomical and Physiological Principles in Combined Approach Tympanoplasty*

Combined approach tympanoplasty is still a hypothetical way of dealing with the problem, and at present is under trial.

Principles: (*a*) total excision of irreversible disease

(*b*) preservation of the canal wall and tympanic sulcus and avoidance of a mastoid cavity

(*c*) re-establishment of middle ear function.

If the internal cavity can be kept in open communication with the attic and meso-tympanum, then it may act as an air reservoir and minimize the effect of temporary Eustachian closure which must occur during sleep. Laying the graft on to the fibrous ring helps to prevent the formation of retraction pockets which are due to a combination of inadequate support, negative pressure and middle ear adhesions.

To preserve function one needs the drum in the normal position, an air containing middle ear with a patent Eustachian tube and a transformer mechanism. The development of middle ear adhesions which bind down the drum and transformer mechanism is reduced by staging

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the procedure, clearing the disease, putting in the graft, filling the middle ear with paraffin wax or lining it with silastic film and 6 months later when there is normal healthy middle ear mucosa a sound transformer mechanism can be inserted. Excision of disease is also confirmed. The sound conducting mechanism must be firmly connected at both ends with fibrous tissue. Long-term follow-up of all cases with critical analysis of successes and failures is very necessary to assess the value of this operation.

The opening of the facial recess is probably technically the most difficult part of this operation. After cleaning the mastoid thoroughly the posterior meatal wall is thinned down, using the fossa incudis as a landmark, and an opening is made into the facial recess above the facial nerve. This is enlarged to get a good view of the stapes superstructure and footplate, and in some cases even the Eustachian tube. It is important to avoid touching the incus with the drill if the ossicular chain is intact, because the energy from the drill will be transmitted to the cochlea and may cause high tone deafness.

Discussion

MR. BALLANTYNE: This is not the type of surgery that all of us are prepared to undertake and it does require considerable practice.

DR. L. GRAY, *Perth, Australia:* What is the main cause of unilateral ear disease?

PROFESSOR PLESTER: In many cases there is lack of ventilation of the tube due to septal deviation.

MR. THORBURN: In children infected sinuses, adenoid hypertrophy or hypertrophy of the turbinates is important.

DR. SAADA, *Cheshire* and DR. DE SA, *Bombay:* What is the place of one stage tympanoplasty in cholesteatoma especially when it involves the oval window?

MR. THORBURN: If removal of the cholesteatoma is complete one is justified in either attempting to conserve the mechanism present, if the hearing is good, or performing a tympanoplasty if not.

PROFESSOR PLESTER: The patient must have the chance of a one stage operation but if there is squamous epithelium left in the middle ear or the oval window is involved by tympanosclerosis, one must do a two stage procedure.

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MR. SMYTH: If there are active granulations around the stapes footplate it is so easy to damage the crura that it is better to wait 6 months before attempting to reconstruct the transformer mechanism. This also gives one the chance of making sure that one has removed all the squamous epithelium from the middle ear especially from the sinus tympani.

DR. E. LOUGHRAN, *New York* and MR. P. BEALES, *Doncaster:*
(*a*) when should staging be employed in tympanoplasty?
(*b*) what kind of ear should be handled by stages?

PROFESSOR PLESTER: The operation should be one stage; pre-operative care usually makes this possible.

MR. THORBURN: One must always stage any procedure when the labyrinth is opened.

MR. SMYTH: Twice as many good hearing results are obtained in two stage procedures where there is severe disease with loss of the crura.

PROFESSOR PLESTER: The number of good hearing ears may be better with two stage procedures but a large number will hear well after one stage and this is worth trying.

MR. N. APPLETON, *Oldham* and DR. B. BERNSTEIN, *Tel Aviv:* Is tympanoplasty to be reserved for dry ears only and, if so, how is suppuration eliminated pre-operatively?

PROFESSOR PLESTER: It is better to operate on a dry ear but it is not essential and results are not very much better with dry ears. Some ears will not dry pre-operatively.

MR. BALLANTYNE: It seems to be important in this question to distinguish between the persistent discharge from tubo-tympanic disease and attico-antral disease.

MR. THORBURN: If the ear becomes dry it can be left alone. In young children with tubo-tympanic disease who are subject to repeated upper respiratory tract infections it is better to leave them until fifteen or so when the problem may be very much easier. If cholesteatoma is present one should not wait however.

MR. SMYTH: He was in disagreement with this as he felt it to be important for small children to be able to hear well. Results are not significantly different between wet and dry ears.

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MR. J. MCAULIFFE CURTIN, *Dublin:* Is slight suppuration the rule after successful tympanoplasty?

MR. SMYTH: If there is any discharge post-operatively it is not a successful tympanoplasty.

PROFESSOR PLESTER: If most patients had discharging ears he would give up tympanoplasty.

MR. D. FAIRMAN: In relation to operating on cholesteatoma ears, it appears that the Panel have assumed that they have either removed the cause of the original disease or that the cause of the orginal disease has ceased to operate.

MR. THORBURN: The cause probably goes back to childhood if not to heredity. The effect is ingrowing squamous epithelium which throws off an unnatural amount of keratin in an enclosed space. This can be relieved by uncovering it completely.

MR. SMYTH: It may be effective because one can eliminate the blocked area between the aditus and the back of the middle ear and if ventilation is improved the squamous epithelium will not be sucked in.

DR. G. A. FEE, *Toronto* and MR. K. MALCOLMSON, *Bristol:* Is canal skin placed on top of fascia to close perforations and, if so, as a pedicle graft or a free graft? What are the best tissues for drum replacement?

PROFESSOR PLESTER: Fascia is used, covered with meatal skin either free or pedicle.

DR. C. JANSEN, *Germany:* What material should be used in the case of a lost incus?

PROFESSOR PLESTER: A steel wire is used for malleo-stapedopexy—it is better than incus transposition.

MR. SMYTH: Homograft incuses are used. In the cat at least they seem to be fairly rapidly replaced by new bone from the periphery. They have the advantage that one does not have to manipulate the stapes. When incus replacement is used the middle ear cavity should be lined with silastic film to prevent adhesions.

MR. K. MURPHY, *Bahrain:* What is the Panel's experience of Type IV tympanoplasty making use of Schuknecht's teflon inlay?

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PROFESSOR PLESTER: Thin teflon sheets are cut out with scissors to lie in the middle ear and down into the tube. Their efficacy has not yet been proved.

MR. C. JOHNSTON, *Swindon:* Does the Panel consider that complete removal of cholesteatoma can be achieved using the operating microscope and is it then safe to use a temporal muscle flap to fill in the cavity?

MR. THORBURN: It is not essential to use a microscope to perform an adequate mastoidectomy although it is a good idea to check the cavity with it at the end. It is then reasonable to fill the cavity with muscle, as long as there is no groove left between the fascia and skin for the squamous epithelium to grow in under the muscle.

Multiple Question: Many criticisms have been made about the combined approach tympanoplasty. Would the Panel comment on these four aspects:

(*a*) recurrence of cholesteatoma

(*b*) damage to the facial nerve

(*c*) poor hearing results

(*d*) retraction pockets

MR. SMYTH: Several cholesteatomas have recurred behind the drum but they are easily seen and removed. These ears must therefore be followed up very carefully. Hearing has been lost only when the footplate was damaged. Placing silastic film in the middle ear reduces the instance of retraction pockets and if they do develop they can be cured by inserting a grommet. One must only perform this type of operation on a patient one can follow-up closely.

MR. FAIRMAN: What is the incidence of dead ears after tympanoplasty and what can be done to avoid them?

PROFESSOR PLESTER: Dead ears are only obtained when the footplate is damaged or there is already a fistula. One should therefore avoid working around the footplate or round window if possible. It is not necessary to remove granulations from either window as they will disappear when mastoid suppuration is controlled.

MR. J. KODICEK, *Chester:* In a patient with a dry perforation following tubo-tympanic disease when the ossicular chain is intact the hearing is poor. What action should be taken?

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PROFESSOR PLESTER: This is probably due to adhesions in the attic. One should close the perforation as a first procedure and then later remove the malleus head and incus and restore ossicular continuity.

MR. THORBURN: The deafness may well be due to tympanosclerosis around the footplate and this should be tackled by the two stage procedure.

Instructional Sessions

MR. J. ANGELL JAMES (G.B.)
Ultrasonic Therapy for Ménière's Disease.
MR. G. H. BATEMAN (G.B.)
Trans-sphenoidal Hypophysectomy.
MR. R. L. BEARE (G.B.)
Techniques of Rhinoplasty.
DR. R. BELLUCCI (U.S.A.)
Tympanoplasty, Malleus-stapes Wire and Total Defect Skin Graft.
PROFESSOR E. BOCCA (Italy)
Functional Neck Dissection.
PROFESSOR D. P. BRYCE (Canada)
Laryngotracheal Injury.
DR. R. R. A. COLES (G.B.)
Induced Hearing Loss and Hearing Conversation.
MISS J. COOK (G.B.)
Rehabilitation of the Laryngectomized Patient.
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Second British Academic Conference

To the Editor,
Journal of Laryngology and Otology. 18 August, 1967.

Sir,

SECOND BRITISH ACADEMIC CONFERENCE IN OTOLARYNGOLOGY

Those overtly responsible for organizing this meeting have had an embarrassingly large number of generous congratulatory letters, and it would seem, therefore, that their labour was not in vain.

May I crave a few lines of your space to thank all of those who have so written? It has not proved possible to acknowledge their letters personally in all cases.

I should also add (as I said at the Banquet) that those whose names are printed largest are not necessarily those who did most of the work. It was a team job, and this includes numerous voluntary helpers of both sexes—and of course the people who actually enrolled.

Without these last the Conference would have fallen down.

Yours faithfully,

RONALD MACBETH
Chairman General Committee.

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