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James Yearsley: Reflections of an otologist

ALAN G. KERR (Belfast)

James Yearsley

At a time when aurists tended also to be oculists, and laryngologists to be quite distinct from both, Yearsley was the first true otolaryngologist, emphasizing the relationship between nose and throat disease and ear disease. He was born in Gloucester in 1805 and died in 1869.

It is difficult to specify a date when general anaesthesia became more or less routine but it is probable that 1850 is the year that we could regard anaesthesia as being available for any progressive surgeon in London who wanted to use it. However, despite the fact that he was a man of initiative, there do not appear to be any references to general anaesthesia in his writings.

Let us note his otological contemporaries. Toynbee and Wilde were both born in 1815 and together with Yearsley could be considered to be the founding fathers of British otology. However, Hinton, born in 1822, also deserves mention. All four were active at the time that anaesthesia became available.

Yearsley opened the Institution for Curing Diseases of the Ear, later the Metropolitan Ear Institution, in Sackville Street in Piccadilly in 1838. He produced the first report on its work in 1839. He says, 'The following report is printed in accordance with the unanimously expressed wish of a numerous meeting of friends of the Institution for Curing Diseases of the Ear held March 8. Such an honour was not anticipated by the author or greater pains would have been taken in the report. . . . ' In other words, he published this because he had been pressed by others to do so. Déjà vu. I know from my own experience how readily I have agreed to publish something on the slighest pressure from friends and colleagues.

He lamented the low standard of the treatment of ear disease in England at that time. Indeed, he stated that with one or two exceptions the word aurist had become synonymous with quack. Not only could aurists not do anything for diseases of the ear but they frequently made them worse so that patients were reluctant even to seek advice.

He expressed the hope that the Institution would become a school for aural surgery and extolled the virtues of the specialist institution where many cases could be collected together for the advancement of knowledge.

In that first report he drew attention to two areas where he personally had pressed forward the treatment of deafness. First, he had designed a source of illumination so that he was able to examine ears even in the absence of sunlight. Second, he drew attention to the efficacy of Eustachian tube catheterization not only with the employment of atmospheric air in the treatment of middle ear disease but also the application of vapours for the excitation of the auditory nerve in cases of nervous deafness. Thus, he said, both middle ear and nervous deafness could now be treated.

Of the 204 patients treated in the last six months of 1839, 75 were cured, 42 improved, 27 incurable, 42 of unknown result and 18 were still on the books. On reading this, my first reaction was that it would be nice if my practice could be so clearly defined and successful. Then, on thinking of the Health Service Review, I realized that I may be forced into having my practice even more clearly defined and more successful or else take early retirement!

In 1850, he produced the third edition of his book 'Deafness Practically Illustrated'. In the preface he again lamented the general standard of otology in Britain and emphasized how much good could be done if only people would read his book and do as he did. He appears to have been criticized in the past for not making reference to the works of others but he defended himself. He said that he 'holds all works on diseases of the ear to be of little value if reference to the mucous membrane of the throat, nose and ear is not imprinted on almost every page, and up to this moment no such work exists'. In other words he would be prepared to quote the work of others if it were worth quoting but so far there was nothing in that category!

Quackery

Yearsley had a lot to say about quackery and worked hard to protect the public from unqualified quacks. I ought to point out that the public also needed protection from qualified quacks and this may have proved a little more difficult. The theme of quackery seems to run through a lot of what otologists had to say throughout the years. Let's look at a few of them.

Wilde 'laboured to divest otology of that shroud of quackery with which it has become encompassed'.

Toynbee was warned that otology was an unpromising field and that he would be better to stay away from it but he was determined and decided to give it ten years before giving in. He set out to build it on the sure foundation of pathology and did so. It is sad that, as I shall mention later, Yearsley considered Toynbee to be on a level with the extra-professional quacks.

Extracts from the Yearsley Lecture presented at the Royal Society of Medicine, 2 March 1990.

Sir Astley Cooper won the Copley Medal of the Royal Society for his treatment of deafness by puncturing the tympanic membrane but discontinued this work for 'fear of being thought an aurist'.

John Curtis had been a dispenser in the Navy but married a wealthy woman and set himself up as an aurist in Soho Square. He founded an Ear Dispensary in 1816 for which he managed to acquire Royal Patronage and which was purchased from Curtis' executors in 1845 to become the Royal Ear Hospital. Curtis appears to have been the ultimate quack and was said to be making £5,000 per year at one time. Sadly, he squandered his fortune, fell into debt, fled the country and eventually died in poverty. His main contribution to otology was that it was he who stimulated Toynbee to vow that he would 'rescue aural surgery from the hands of the quacks'.

Menière also had something to say about quackery. He stated that the exact diagnosis is important because then 'one will remove diseases essentially incurable from the unfortunate consequences of a therapy without solid foundation, the blind empericism of the quack will be forced to bow before the certainty of proven futility, and the practice of our art will deserve fewer reproaches'.

Urban Pritchard was the Professor of Aural Surgery in King's College Hospital in 1899 at the time of his presidential address to the sixth international Otological Congress in London. This address gives some idea of the low standing of otology at that time. He described how, in 1872, when he told one of his professors that he was going to study otology, he got the reply that this professor would, therefore, have to stop regarding all aural surgeons as quacks.

In that same lecture Pritchard referred to the way in which many reputable doctors would divide ear disease into two categories—those which could be cured by any general practitioner and those which were incurable and could therefore be relegated to the tender mercies of the ear specialist. There is a vein of paranoia running through this presidential address with the feeling of injustice and the demand, almost, that ear specialists be respected without, I feel, the appropriate demand that ear specialists earn that respect.

This theme of quackery seems to run through the history of otology. It should be said that the nose and throat are also unable to bear too close scrutiny. Now, it may well be that it also runs through all other branches of medicine and surgery but that I have never looked for it. Nonetheless, the incidence of the problem in otolaryngology does seem to be uncomfortably high.

It seems to me appropriate therefore that in the Yearsley Lecture we ought to acknowledge this theme of quackery, that we acknowledge what Yearsley did to deal with it, and that we look at where we are now in training in otolaryngology, especially as so much has changed in the past 20 years and since so many changes are taking place at the present time.

[The middle section of the lecture has been omitted as it is of limited interest outside the British Isles. It considered, superficially, current trends in teaching otolaryngology to medical students and, in considerable depth, the changing pattern of training, examining and accrediting otolaryngologists. Author.]

Artifical ears

Let me conclude by saying something about artificial hearing. Many of you will know of the verbal welfare between Yearsley and Toynbee about their artificial ears (Fig. 1). Yearsley made plain his side of the story and my information comes from that. In 1848, according to Yearsley, he introduced the artificial tympanum, a little plug of cottonwool used to close, but not completely seal, the perforation. Toynbee is alleged to have copied this principle but used a vulcanized india rubber membrane and presented this at a meeting of the Provincial Medical Association in 1850, and without any reference to Yearsley's work. Yearsley said that he allowed this act of piracy to pass at the time but could do so no longer when Toynbee, in 1853, accepted a medal from the Society of Arts for his so-called invention. Yearsley stated that while Toynbee was an obscure otologist it did not matter too much but Yearsley felt he had a duty to rebuke him in public once Toynbee had become famous 'by dint of his advertising, interminable lectures, false theories, numberless dissections and opposition to accepted beliefs and treatments'. This controversy is a sad event in the history of otology.

Both men behaved similarly in the debate, becoming

CONTROVERSY

ON THE

ARTIFICIAL TYMPANUM.

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WITH ADDITIONS.

BY

JAMES YEARSLEY, M.R.C.S., ENG.,

SURGEON TO THE METROPOLITAN EAR INFIRMARY, SACKVILLE STREET
AURAL SURGEON TO HER LATE MAJESTY THE QUEEN DOWAGER;
SURGEON TO THE ROYAL SOCIETY OF MUSICIANS;
AUTHOR OF "DEAFNESS PRACTICALLY ILLUSTRATED," "A TREATISE ON DISEASES OF THE THROAT," ETC., ETC.

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FIG. 1

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emotionally involved and acting in a manner that we would consider unacceptable today although, of course, we have other ways that are equally effective! Both used the term artificial. Yearsley talked about his artificial tympanum and Toynbee of his artificial membrana tympani. I want to end this lecture with a little otological thought along the lines of another artificial hearing—visual hearing.

In otology at the present time we have the exciting developments in cochlear implants and these truly are exciting. There have been some spectacular successes and most reports indicates that almost all who receive them are pleased with what they have been given and very few have asked for them to be removed. Almost all continue to use them, probably unlike the majority of those to whom hearing aids are supplied. Even the sceptics have to admit that cochlear implants have something to offer. But it also has to be admitted that, in terms of speech recognition, the majority of implant users get no more than an aid to lip reading and that only a minority get any sort of open set speech discrimination.

Cochlear implant devices are developing quite rapidly at the present time. But there is a finite market and there will always be certain limitations on this development.

However, even if funding were unlimited and the perfect implant were developed there will always be the limitation of the availability of nerve fibres for stimulation in the auditory nerve. It doesn't matter how good your implant, it will not stimulate the auditory nerve in a patient where, following bacterial labyrinthitis, the scala tympani has become ossified in the basal coil and almost all the fibres of the auditory nerve have been lost. Therefore there are always going to be some people for whom a cochlear implant is not going to be of help. Now, don't misunderstand me. I am not opposing cochlear implants. I am in favour of them and support their development, but I think we must be realistic about their limitations.

On the other hand, there is another area of silent artificial hearing, as it were, that has considerable potential for almost all with hearing problems and it is to this that I wish to draw your attention in closing. I refer to a speech recognition device.

Cochlear implants undoubtedly bring the profoundly deaf person into audible contact with the outside world in a wonderful way. However, there also is no doubt that the way in which the deaf feel most isolated is in their inability to hear speech. It seems to me that what the deaf need more than anything else is the ability to communicate freely and in a relaxed manner. Even the best lip-readers find that communication is very tiring and even the most tolerant hearing people find that a prolonged session of communication with the profoundly deaf is far from relaxed.

A cochlear implant helps to make lip-reading easier. But would a speech recognition device help even more?

A speech recognition device is a computer system that recognizes the human voice and can reproduce the words, as words, on the visual display unit. Speech recognition devices are already with us and are already being used in industry. The most straightforward industrial use is in situations where the user must operate a machine and, at the same time, keep both his hands and eyes free.

Another very obvious development is in car telephones where the law states that one must not dial while driving. A voice activated dialling system would solve this problem and British Telecom are already far advanced on their research on this problem.

Let's look at the economics of the situation. The world market for cochlear implants is quite limited. On the other hand, the potential market for speech recognition devices is virtually unlimited. Apart from the industrial and what could be considered gadgetry uses, they would be of enormous benefit to almost everyone who has a word processor.

The mind boggles at what will be possible when speech can be recognized by a machine and manual typing bypassed. The commercial possibilities are limitless. Such machines are here already. Simple speech recognizers are now available and at reasonable prices.

In the radiology department in the Boston Veterans' Administration Hospital reports are already being generated in this way. They have 5,000-word recognizers although a once-only period of 2–3 hours is required for each user to tune in, as it were, to the system.

What a boon it would be to the deaf if they could get a portable machine that would print speech onto a screen at normal or almost normal talking speed, totally non-invasive and capable of almost 100 per cent speech discrimination. The important thing is that almost limitless money will be available for the development of these machines as they have such enormous commercial potential. I think that this is something we must keep in the forefront of our minds and look for the possibilities of helping our profoundly deaf patients in this way.

Conclusions

Many changes are occurring and, as a result, there are many opportunities. I have no doubt that Yearsley would have loved to have been here now amidst all this change and, if he were, he would be in there, clamouring to improve our specialty. With energy and vigilance we can do that ourselves.

Address for correspondence:
Mr Alan Kerr F.R.C.S.,
Eye and Ear Clinic,
Royal Victoria Hospital,
Grosvenor Road,
Belfast BT12 6BA.

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