Undergraduate Teaching in Otorhinolaryngology: King Faisal University Experience

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Otorhinolaryngology (the study of ear, nose and throat disorders) has undergone many changes in the last century. In keeping with these developments, this paper reviews the undergraduate teaching experience in the Otorhinolaryngology Department of the College of Medicine and Medical Sciences of King Faisal University, Dammam, Saudi Arabia. It addresses the issues of the importance of, and justification for an independent ENT department and the formulation of a concise undergraduate curriculum.

Patients with diseases of the ear, nose and throat (ENT) constitute a significant proportion of the medical practitioner's clinical load, and family physicians will continue to confront these commonly occurring diseases. This calls for a larger share of time given to the teaching of otorhinolaryngology in medical schools. There is also the need for a concise curriculum which avoids such irrelevancies as surgical techniques but concentrates on the common clinical and community aspects of the speciality. To achieve these goals, and to keep abreast with the recent advances in ENT, it is argued that an independent department of ENT is not only desirable but mandatory; a flexible attitude should be adopted in setting the curriculum in line with the health needs of the community that future physicians will serve.

History

The mid-nineteenth century saw numerous technical developments in the management of ENT diseases. Examples are the head mirror by Adam Politzer in 1841 in Vienna, laryngoscopes and mirrors for exploring nasal passages by the Czech medical scientist, Janos Czermak in 1858, and Joseph O’Dwyer’s (1880) intubation instruments to alleviate the symptoms of diphtheria.1 These are among the notable advances which led to the establishment of ENT as a speciality in its own right.

The pressures of social, scientific and economic factors, not unexpectedly, necessitated the founding of specialized hospitals. James Yearsley, the first surgeon for ear diseases in Britain, founded a hospital exclusively devoted to the problems of the ear. Similarly, William Wilde (1815–1876),2 Oscar Wilde’s father, contributed to the establishment of St Mark’s Hospital for the Eye and Ear in Dublin. Morell MacKenzie (1837–1892), who dexterously and delicately used a small mirror and based on it a new medical speciality, namely laryngology, founded in 1883 the first hospital devoted to a medical speciality, the Hospital for Diseases of the Throat, Golden Square, London.3

These earlier developments were closely matched by major advances in this century, including an almost total eradication of mastoid infection by antimicrobial agents, the elimination of diphtheria in advanced countries and the dramatic advance in middle ear surgery between 1960 and 1970. Above all, the potential application of physics seems limitless, and a number of commendable advances in otorhinolaryngology this century can be attributed to this discipline.

Despite these advances, however, the speciality of ENT has remained, at least in some developing
countries, in the backyard of major disciplines. Little attention has been paid to the fact that ENT diseases are probably the commonest, although shortlived, afflictions dealt with by general practitioners. This is particularly obvious in the ‘deficient’ curricula provided for undergraduates, a sizeable number of whom ultimately enter family practice, but with little background exposure to the principles of management of ENT diseases.

The Department of Otorhinolaryngology, King Faisal University

The Department of Otorhinolaryngology in the College of Medicine and Medical Sciences (CMMS), King Faisal University (KFU), Dammam, Saudi Arabia, was established as an independent department 2 years after the university started to function in 1975. For the first two years, it was part of the Department of Surgery. With the charter class 2 years away from being exposed to ENT, the time was used to plan and write an undergraduate curriculum based mostly on the experience and advice of other institutions. From 1980 to 1987, the ENT course (worth 2 credit hours) was taught in the final year in a 2-week rotation.

Periodic evaluation of examination results and feedback from the students showed that the ENT curriculum was inadequate in contact hours, that students did not integrate ENT with basic sciences, and that the content did not reflect the health needs of the community. In 1987, a major revision exercise of medical curriculum followed in which ENT was fully represented. The growing clinical practice at the teaching hospital, knowledge of the pattern of diseases in the community, evolution of postgraduate programmes, and recognition of the teaching hospital by certifying bodies at home and abroad led to restructuring of various undergraduate courses. The ENT course was shifted to the 5th level preceding the courses for the major disciplines of Medicine, Surgery, Obstetrics and Gynaecology, and Paediatrics.

ENT also gained an extra teaching week and an extra credit hour and became 3 credit hours course instead of 2. The impact of these changes in the undergraduate curriculum are yet to be assessed. Nevertheless, there is reason to believe that ‘new insights in the natural sciences, and the new scientific discoveries, including diagnostic and therapeutic tools, demand the right outlook and approach to the new philosophy of health and disease. A young student of today must be prepared for the medicine of the future.’

The Revised ENT Curriculum

The listed objectives for the course must be clearly defined. They must, in general, conform to the National Health Policy ‘without viewing the curriculum as a cake to be shared out’. The objectives are:

1. To familiarize the students with the basic principles of the speciality, as it applies to the community at large.
2. To develop skills in the assessment of common ENT disorders and appropriate usage of diagnostic aids.
3. To enable the student effectively to define common ENT problems considering the patient as a whole.
4. To sharpen the student’s judgement in recognizing his/her limitations and to know when and how to refer cases to the specialist.
5. To stimulate the student for continuing interest in the speciality and its related developments.

Being a predominantly ambulatory practice, ENT does not suffer any dearth of teaching material, as may be the case with other major departments in teaching complexes. It has the ready means repeatedly and safely to teach examination skills—even to undergraduates—in real clinical situations without resorting to models and socially unacceptable substitutes. The instructional strategies are influenced by the clinical volume indicators. In general, the course content (Table 2) follows the traditional didactic arrangement of regional pathophysiology. Practical skills taught together with the interpretation of relevant investigations are integral to systemic teaching. Special attention is given to the management of emergencies in the practice of ENT.

Children pose special problems as their reactions to disease processes are different from those of adults. Approximately one-third of all out-patients attending ENT clinics are children. It is, therefore, desirable that paediatric conditions receive due emphasis. Radiology is an important tool of investigation in the management of ENT diseases. Students need an appropriate exposure to the

Table 1

The most common conditions in patients admitted for surgery to the Otorhinolaryngology Department of King Fahd Hospital of the University, in 1988

<table>
<thead>
<tr>
<th>Condition</th>
<th>Frequency</th>
<th>(%)</th>
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<tbody>
<tr>
<td>Chronic tonsillitis and adenoids</td>
<td>185</td>
<td>(22.4)</td>
</tr>
<tr>
<td>Chronic tonsillitis</td>
<td>152</td>
<td>(18.4)</td>
</tr>
<tr>
<td>Chronic supplicative otitis media</td>
<td>110</td>
<td>(13.3)</td>
</tr>
<tr>
<td>Secretory otitis media</td>
<td>75</td>
<td>(9.0 )</td>
</tr>
<tr>
<td>Deviated nasal septum</td>
<td>74</td>
<td>(9.0 )</td>
</tr>
<tr>
<td>Cholesteatoma</td>
<td>36</td>
<td>(4.4 )</td>
</tr>
<tr>
<td>Allergic rhinitis</td>
<td>22</td>
<td>(2.7 )</td>
</tr>
<tr>
<td>Nasal polyps</td>
<td>20</td>
<td>(2.6 )</td>
</tr>
<tr>
<td>Nasal bone fracture</td>
<td>10</td>
<td>(1.9 )</td>
</tr>
<tr>
<td>Nasopharyngeal carcinoma</td>
<td>5</td>
<td>(0.8 )</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>695</strong></td>
<td>(<strong>84.4</strong>)</td>
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</tbody>
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### Table 2
The ENT course

| Nose and sinuses | Epistaxis—infections of nose and sinuses, allergy, nasal polyps, septal deviation, trauma, foreign body in the nasal cavity | Anterior and posterior rhinoscopy | X-ray of nose and sinuses |
| Otology | Otitis externa, otitis media and its complication, hearing loss, vertigo, foreign body in the external auditory meatus | Otoscopy Tuning forks test | Mastoid X-ray. Pure tone audiogram. Vestibular tests |
| Pharynx | Pharyngitis, tonsil and adenoid foreign body in the pharynx | Examination of oral cavity | Soft tissue neck X-ray |
| Larynx | Acute and chronic laryngitis, differential diagnosis of hoarseness, vocal cord paralysis | Indirect laryngoscopy | CT scans of laryngeal tumours |
| Head and neck | Common head and neck tumours, awareness of early signs and symptoms of head and neck tumours, risk factors, routes and spread, introduction to modes of therapy | Examination of the neck | CT scans of nasopharyngeal tumours. Carcinoma of larynx |
| Emergencies in ENT | Bleeding, airway obstruction, intracranial complications of rhinological and otological infections, head and neck carcinomas | Attitudes and skills in communicating with patient and relatives | Learn to participate in community health education and prevention of diseases |
| Recent advances and modern concepts in ENT | Idea about cochlear implantation, introduction to speech pathology, advances in audiology, AIDS in ENT etc. | Encourage students to start using computers and modern devices needed for tomorrow’s medicine | — |

relevant aspects of radiological diagnosis including the place of such imaging as CT and MRI scans.

An exposure to the growing edges of the discipline is considered desirable within the scope of the undergraduate. The field of audiology, now regarded as a speciality in its own right, is also brought into focus.

The 3 weeks programme encompassing different components of the speciality, entails standard teaching strategies of lectures, out-patient sessions and tutorials.

### Evaluation
The success of a course is measured by the extent to which the students attain its objectives. Continuous assessment makes learning, within the course, more enjoyable as well as stimulating for the student. Overstructuring is not desirable, but numerically predetermined components make it less subjective and biased.

### Comments
The curriculum stresses two points which have been addressed in Edinburgh in a recently held World Conference on Medical Education11 namely:

1. To complement instruction about the management of patients with increased emphasis on promotion of health and prevention of disease in the community.
2. To build the curriculum so as to ensure achievement of professional competence, and not the retention and recall of information only.

To pursue these goals and to evolve educational policies consonant with needs of the profession and the health needs of a particular community requires a pragmatic approach. To achieve this in the academic setting of a university and in the organizational structure of a major health provider, an independent clinical department appears to be an optimum prerequisite in a rapidly changing environment of medical practice.
The major force responsible for this change is an exponential advance in technology which has not only enhanced the ability of most practitioners to detect disease early, but also to alter its course favourably. Integral to this is the role of specialized faculty who must make substantial contributions to the discipline by promoting the spirit of research, and clinical audit. Evaluation processes must also have long-term goals with the mechanism to receive feedback from established practitioners. These attributes must be reflected in the curricula and supported by real examples.

Otolaryngologists are increasingly called upon to participate in curriculum planning and the establishment of new departments. Flexibility in setting up a curriculum is very important in order to accommodate the health and social needs of the community. Objectivity must be the watch word. The needs of the physician in the twenty-first century are bound to be different to those of his predecessors and this must necessarily determine the future formulation of educational policies.

References