

INTRODUCTION

EXAMINATION of the larynx was first performed in 1855 by Manuel Garcia, a London voice teacher who was able to view his own vocal cords using a dentist's mirror and sunlight. In 1858, Johann Czermak of Budapest pioneered the use of artificial lighting and the concave head mirror, and until the advent of direct endoscopy in the early 20th century, deep illumination of the upper airway depended entirely upon reflected light using a head mirror. (Silberman, 1978).

Fibreoptic Laryngoscopy

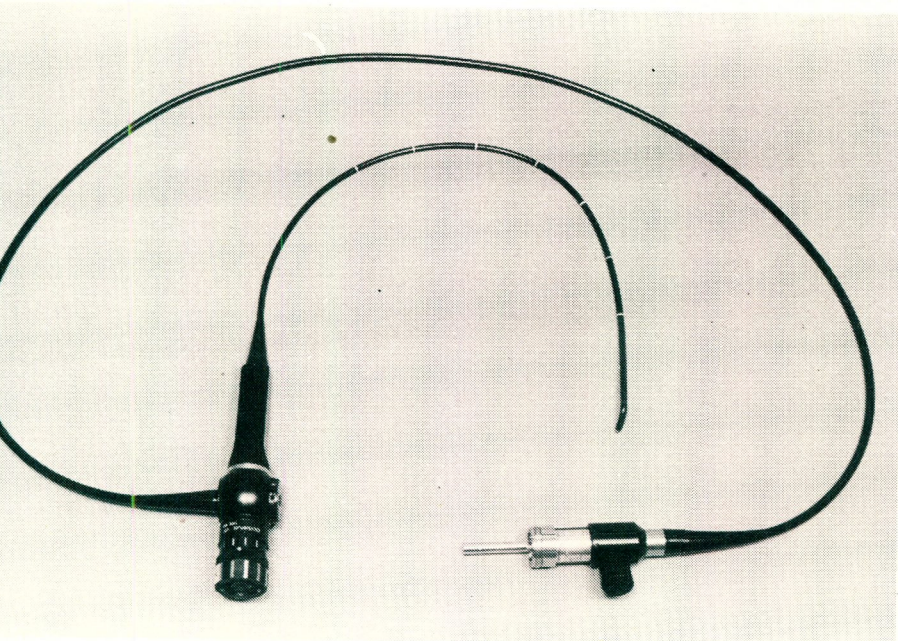
By A.R. Welch and R.P.E. Barton *
(Leicester)

In 1930 Lamm described the principles of light transmission through glass fibres which if regularly aligned could transmit an image in addition to the light. This

discovery, combined with the telescopic rod lens system developed by Hopkins (Ward P.H. et al 1974) which resulted in a brighter image, opened the way for the rapid advancement of fibreoptic techniques which have come to fruition in the last two decades.

Fibreoptic laryngoscopy is a technique that is not widely used but can preclude many unnecessary hospital admissions for direct laryngoscopy and the slight, but very real risks of subsequent complications.

* E.N.T. Department,
Newcastle General Hospital,
Westgate Road,
Newcastle upon Tyne,
NE4. 6BE.



An Olympus VF type A42 Fibrescope



Method of Use.

DISCUSSION

Classical E.N.T. teaching states that any patient with hoarseness of over 4 weeks duration should undergo laryngeal examination which is normally performed by the indirect method. In a proportion of patients, adequate examination is not possible for functional or anatomical reasons and in order to exclude laryngeal pathology, direct laryngoscopy under general anaesthesia is performed. Many of these direct laryngoscopies can be avoided by the use of fiberoptic laryngoscopy.

In a personal series of 60 patients with hoarseness (Leicester Royal Infirmary) on whom indirect laryngoscopy was unsatisfactory, 31 were found to have a normal larynx on fiberoptic laryngoscopy. (Table I).

Only 25 of the patients subsequently required direct laryngoscopy, when the particular abnormal findings were confirmed. It was felt unnecessary to perform direct laryngoscopy on 5 patients with chronic laryngitis, and the patient with bilateral abductor paralysis died several days later from other causes.

Thus 37 out of the 60 patients were spared a formal hospital admission, a general anaesthetic and the potential complications.

During the period of the study no other members of the department were using fiberoptic laryngoscopy regularly, and it was felt that patients seen by colleagues may have been admitted for direct laryngoscopy without first undergoing fiberoptic examination. A retrospective study of patients undergoing direct laryngoscopy as a sole procedure between September 1979 and September 1981 at Leicester Royal Infirmary was therefore performed. (Table II).

TABLE I
Findings on fiberoptic laryngoscopy in 60 patients in whom indirect laryngoscopy was unsatisfactory

<i>Findings</i>	<i>No. of Patients</i>	<i>No. Requiring Direct Laryngoscopy</i>
No abnormality	31	
Chronic laryngitis	10	5
Vocal polyps or nodules	6	6
Hyperkeratosis	4	4
Cord Paralysis	3	3
Bilateral abductor paralysis	1	
Carcinoma	3	3
Failed examination	2	2
TOTAL	60	23

TABLE II
Findings in 194 patients undergoing direct laryngoscopy between September 1979 and September 1981, at Leicester Royal Infirmary

<i>Findings</i>	<i>No. of Patients</i>	<i>%</i>
Normal	70	36
Lesions requiring biopsy	75	38
Vocal polyps or nodules	28	14
Papillomata for cryosurgery	11	6
Cords requiring stripping	7	
Cord requiring Teflon injection	1	
Vallecular cyst	2	

Of 194 direct laryngoscopies performed in this period, 70 (36%) showed no laryngeal pathology. Had all of these patients previously been examined using fiberoptic laryngoscopy many of the direct laryngoscopies could have been avoided.

Fiberoptic laryngoscopy with topical anaesthesia, is a quick and reliable method of laryngeal examination (Figures I and II) in adults and older children, (Williams et al, 1975, Silberman 1978) and the procedure can be performed easily in an outpatient

clinic. Most patients tolerate the procedure with little or no discomfort and ample time is available to examine the larynx in the resting or phonatory state.

SUMMARY

Fiberoptic laryngoscopy therefore has an important part to play in laryngeal examination. Many unnecessary hospital admissions may be avoided by using this simple, safe and reliable procedure when indirect mirror laryngoscopy has been unsatisfactory.

REFERENCES

- LAMM, H. (1930). Biegsame Optische Cerate. *Z Instrumentenkunde*, **30**, 579.
- SILBERMAN, H.D. (1978). Advances in the optical examination of the upper airway. *Otolaryngologic Clinics of North America*, **11**, 355.
- SILBERMAN, H.D. (1978). Use of the flexible fiberoptic nasopharyngolaryngoscope in the pediatric upper airway. *Otolaryngologic Clinics of North America*, **11**, 365.
- WARD, P.H., BERCI, G., and CALCATERRA, T.C. (1974). Advances in endoscopic examination of the respiratory system. *Annals of Otology, Rhinology and Laryngology*, **83**, 754. □□