

Laryngectomy

Diagnosis to Rehabilitation

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Edited by Yvonne Edels



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FOREWORD

Yvonne Edels in her preface outlines clearly her sound reasons for compiling this book on laryngectomy — reasons I entirely endorse. Her chief aim was to follow the laryngectomee's life from first diagnosis of disease through all possible permutations in medical and surgical treatment and the rehabilitation process. Although the book is predominantly conceived to assist speech therapists it is by no means just another speech pathology text book. It includes contributions from all the main actors in the drama and will prove to be a valuable guide for all concerned with individuals who have to undergo this operation and learn to speak again by whatever means. The book has the informality of a narrative, is eminently readable and leads one on from page to page and chapter to chapter to discover, in the words of Alison Perry, the 'what, why, how and when' of events. It is not therefore a sterile statistical scientific account. Though filled with accurate details and facts, the over-riding impression is one of sympathy and sensitive understanding for the patient which diffuses the attitudes not only of speech therapists but also of surgeons and radiologists.

Such a book is much needed and long overdue. One has only to glance through the references and lists of guide books for laryngectomees in the chapter on resources to realise that practically all previous sources of written information are from the USA. Excellent as these publications are there is a need for a publication which relates to the scene on both sides of the Atlantic. Although the situation in Europe has much in common with that in America, it nevertheless has much which is uncommon. For example, in Britain radiotherapy is almost invariably the primary treatment for cancer of the larynx whereas it is surgery in America. British surgeons therefore rarely carry out partial laryngectomy operations and in a way their hands are tied by radiotherapy in subsequent reconstructive voice surgery (fistula speech) which is now pushing ahead with exciting new techniques which will in due time replace standard laryngectomy and standard oesophageal voice. There are also differences in cultural attitudes and communication. One example is the use of the word 'cancer'. This is used in America as frankly as the name of any other disease such as measles or diabetes. It is not yet so in Britain where it remains a doom-laden word and to most people paramount to a death sentence. So it must be handled with great delicacy by medical staff: the relatives may be told but perhaps not the patient. This cover-up naturally has wide psychological repercussions and causes staff and families, as well as patients, certain anxieties.

In order to emphasise the landmark this book is and as an old warrior in the battle for the rights of laryngectomees to have a say in their own affairs, I must be allowed to throw a brief look back to the situation as it was a mere six or

seven years ago in Britain. Rehabilitation of the laryngectomee was then dominated by the unquestioned authority of the ENT surgeon and was set in a traditional, one might say a hallowed, mould followed loyally by his handmaidens, the therapists. Rehabilitation was not democratic and in fact was hidebound by orthodoxy. The artificial larynx was banned because success or failure of the operation depended upon the mastering of oesophageal voice. Visits by surviving laryngectomees to prospective candidates in hospital were not always encouraged. Why? Because they might upset the patient! Laryngectomee clubs were organised by ENT staff, generally the speech therapist, and meetings were held in hospital out-patients with sandwiches and cups of tea – hardly conducive to good cheer. But now all this has changed.

In Britain the breakaway came in 1976 when the National Association of Laryngectomee Clubs (NALC), in which Gaye Murrills, one of the contributors to this book, played a leading role, was formed. She also conceived the idea of holding a seminar to broaden the minds of surgeons, therapists, social workers etc. Laryngectomy seminars sponsored by the National Society for Cancer Relief were held in 1978 and 1980 and proved a great success. Another important happening was the sponsoring of Gaye Murrills by the NSCR to attend the 1977 Mayo Clinic course on Laryngectomee Rehabilitation held in Rochester, Minnesota. Yvonne Edels followed her in 1979. These courses opened the eyes of these young speech therapists to what could be achieved and helped them gain an overview of American practice. They brought back with them not only knowledge but a refreshing confidence and determination for which this book stands testimony.

The book is packed full of useful information and is encyclopaedic in its scope. The contributions by speech therapists reveal their skills in careful observation and assessment of patients. Practical advice is based upon clinical treatment of individual laryngectomees suffering from differing and varied handicaps in communication. We are told of difficulties not only in speaking but in feeding, dress, managing aids and prostheses, in anxiety and depression, and also terminal illness which is often shirked because of the distress involved. But we are assured that death need not be a tragedy but can be transfiguration.

Contributions by other professionals in the rehabilitation team are not usually included in a book of this nature and it seems to me that Yvonne Edels' greatest achievement is in realising the need for more information on surgery, radiotherapy and chemotherapy. Roger Berry's chapter is a revelation of information that I always wanted to know but did not know how to obtain in comprehensible form. The same can be said of Tony Cheesman's chapter on surgery and Sir Douglas Ranger's on extensive surgery for post-cricoid carcinoma with stomach or colon transplant.

This book is also as up-to-date as it can be. Nigel Edwards' contribution on SSR (surgical speech rehabilitation) is outstanding and Alison Perry gives an excellent description of speech rehabilitation after Blom-Singer and Panjé techniques. But it is unfair to pick out particular chapters when all are so good.

The reader must seek out the information he needs for resolution of problems and will certainly find them here, or in the references to further reading which accompany every chapter.

Finally, having read the edited manuscript I am impressed not only by the choice of distinguished authors whom Yvonne Edels has persuaded to contribute to her book but also by the marathon job of annotation she has carried out as editor which welds the book into a whole and gives it a cohesion and coherence it would otherwise lack. When printed this aspect of her labour will be hidden from the eye.

I predict that *Laryngectomy: Diagnosis to Rehabilitation* will become a standard work and go into many editions. I wish it well.

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PREFACE

During my student training, the number of teaching hours devoted to the study of laryngectomy was very small, and still today, even with the advancement to graduate status and in many cases expansion to 4-year courses, the amount of time which can realistically be allocated to the relatively minor field of laryngectomy must regrettably remain small. Yet within every speciality, no matter how rare, there is a wealth of information the responsible therapist needs to know in order to execute her duties satisfactorily.

Of paramount importance to the well-being of all cancer patients is the sensitivity and professionalism of those who care for them. This 'professionalism' encompasses many skills not least of which must be a thorough understanding of the entire field of the particular disorder – in this case laryngectomy. Traditionally, standard laryngectomy is performed all over the country and not confined to the few centres of specialisation. This peppering of patients means individual therapists are only rarely called upon to participate in the rehabilitation of the laryngectomee, yet it is not unreasonable to expect the highest standard of treatment available.

As a practising clinician I found it difficult and time consuming to try to piece together the available literature. I also found it confusing as in certain critical respects that literature which existed differed from the procedures I was encountering regularly in the hospital setting.

Although many excellent texts existed, there seemed to me a need for a book, within whose covers all the relevant information would be contained. This book therefore is a positive attempt by all the contributors to put before the reader, whether student, therapist, or interested allied professional, those facts which form the core of the current philosophies and practices in the field of laryngectomy as well as some more recent advances and specialities in Great Britain and the USA. The contributors are drawn from those experienced professionals who have worked in the field of laryngeal cancer and who subscribe to the philosophy of an integrated approach with the patient's ultimate welfare being of primary importance.

The book attempts to follow the patient from his initial presentation along his likely route via surgery to (ideally) ultimate rehabilitation. Throughout, what happens to the patient and what he is experiencing physically and psychologically, is stressed. The crucial role of communication to the patient's rehabilitation is well recognised as is the speech therapist's responsibility in this respect, but the speech therapist's other equally important roles are also stressed. The need for inter-professional communication, as well as professional-patient communication is vital. If the patient's traumas are to be minimised and his

Preface

recovery expedited, a flexible but united approach is an essential ingredient. The patient should share the responsibility for his rehabilitation and should be allowed freedom of choice. This means that those professionals involved must develop a less rigid and more open, eclectic approach.

I sincerely hope this book provides a grounding and broad understanding in the field, which should prepare the reader for clinical practice, but no book can replace that most essential ingredient, experience.

I gratefully acknowledge the help, guidance, opportunities and support provided by patients, teachers, colleagues, family, friends and many others. I should like to extend my personal thanks to all the contributors, and those who were involved in the production of this final text, in particular Alison Perry and the Speech Therapy Department of Charing Cross Hospital, London, without whom this book would have remained a dream and not become a reality. Finally particular thanks to Eve and Anthony.

Yvonne Edels

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1

THE COURSE OF THE PATIENT FROM PRESENTATION TO DIAGNOSIS

John Graham

Introduction

It is often said that if you have to have cancer then cancer of the larynx is one of the best kinds to get. This is certainly true of early cancer of the vocal cord; symptoms appear when the tumour is still small (consider the degree of hoarseness produced by a tiny singer's node on the cord), the disease does not at first spread away from the larynx, and early cases are easily treated by radiotherapy with a good chance of cure.

This book is about laryngectomy. If all patients with cancer of the larynx had small vocal cord tumours and were diagnosed and treated early, this operation would seldom be required. Unfortunately, this is not the case. Tumours may first appear above or below the vocal cords, in these regions symptoms may appear late and spread of the growth may occur early. A patient with an early vocal cord tumour may ignore his symptoms, or they may be ignored for him by his doctor. Radiotherapy may fail to cure the disease. The tumour itself may be of a particularly aggressive type. These are the circumstances that commonly lead to laryngectomy.

Later chapters will describe the various kinds of treatment for laryngeal cancer. In this chapter I shall deal in a general way with the symptoms and physical signs of a patient with this disease, and describe the investigations that may be needed to diagnose the tumour and to assess both it and the patient before a final decision is made about treatment.

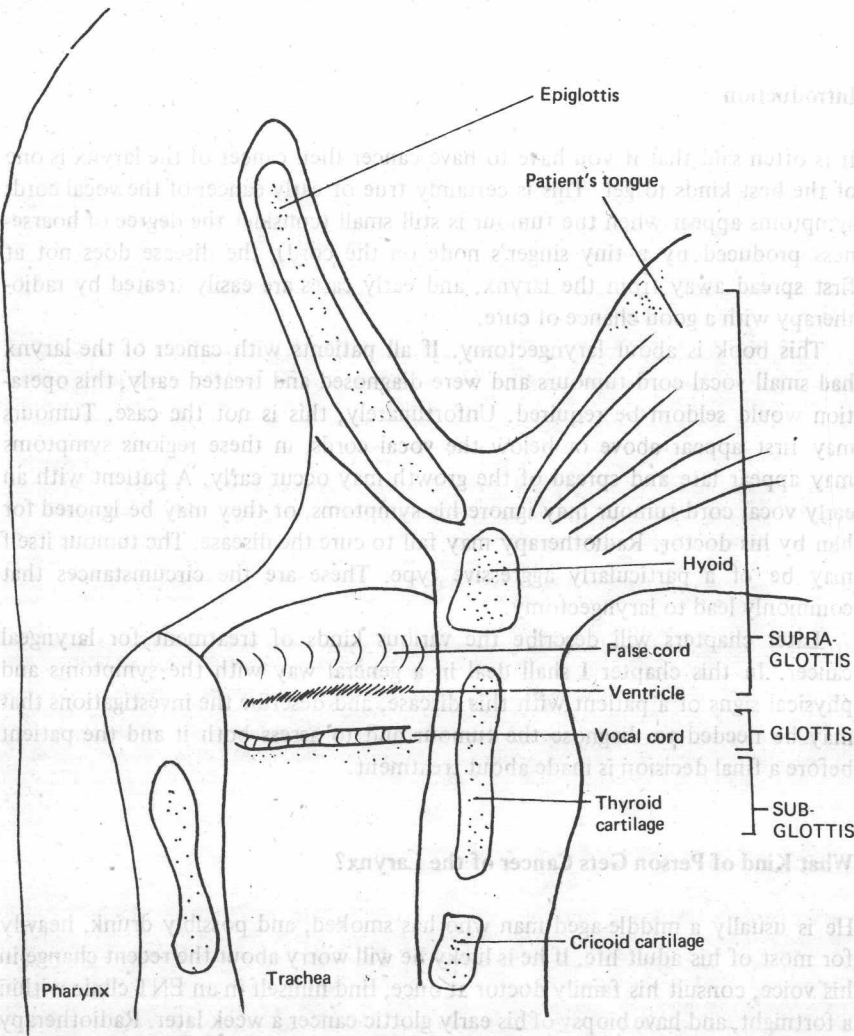
What Kind of Person Gets Cancer of the Larynx?

He is usually a middle-aged man who has smoked, and possibly drunk, heavily for most of his adult life. If he is lucky he will worry about the recent change in his voice, consult his family doctor at once, find himself in an ENT clinic within a fortnight, and have biopsy of his early glottic cancer a week later. Radiotherapy will cure the disease, he will give up smoking, and be free of disease three years later. If unlucky he will try to ignore his hoarseness in the hope that it will go away, or visit his doctor, be prescribed a cough mixture, go home and take it regularly for four months, and be admitted to hospital as an emergency on the point of suffocation with his larynx full of a huge, stinking tumour.

This picture of a middle-aged man who smokes is the commonest but not the

only one, it is important not to treat lightly any symptoms coming from the region of the larynx in men and women of any age until cancer has been ruled out.

Figure 1.1: Vertical Section (in Sagittal Plane) Showing Internal Surface of Left Side of Larynx



Some Features of Laryngeal Cancer

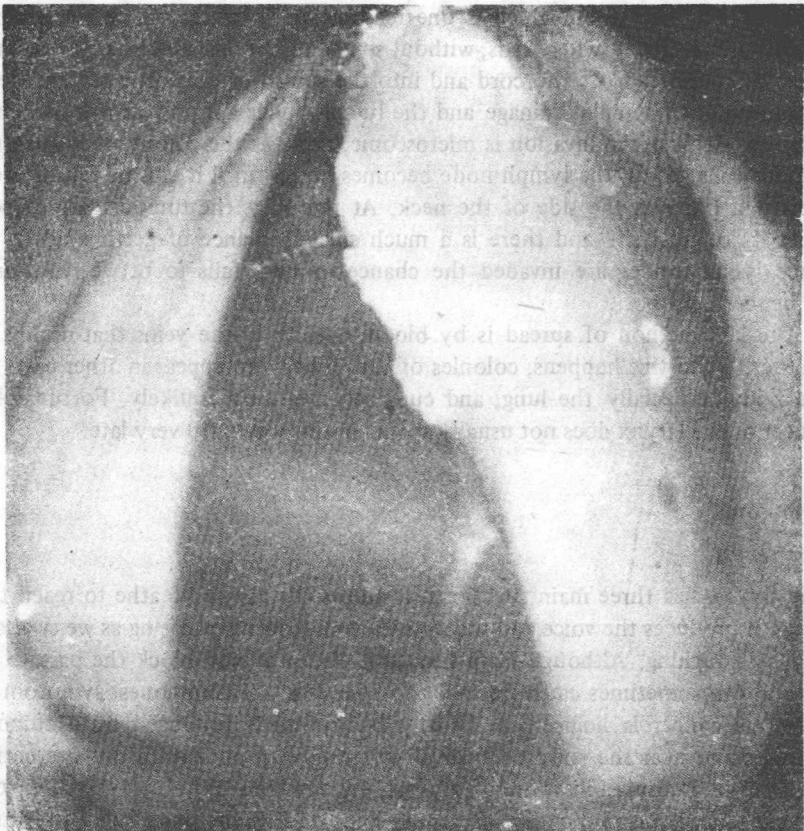
Cancer of the larynx is commoner in men than in women by 8 to 1. Patients are usually in their 50s, 60s or 70s. There is a clear relationship between heavy smoking and cancer of the larynx.

In describing the site of the cancer, the larynx is divided roughly into three

zones (Figure 1.1) – the *glottis*, consisting of the vocal cords, the *subglottis*, below the cords, and the *supraglottic* region: laryngeal ventricles, false cords and epiglottis.

The vocal cords themselves are the commonest site for laryngeal cancer (see Figure 1.2); about two-thirds of cancers arise here. This is partly because the surface of the cords is covered with *squamous* epithelium (similar in microscopic appearance to our skin). More than 95 per cent of laryngeal cancers are squamous in type, which means that they arise from this skin-like squamous epithelium. With heavy smoking other parts of the larynx change their usual surface to form this squamous epithelium (a process known as *metaplasia*), but since the surface of the vocal cords starts off as squamous epithelium in the first place it is likely to produce squamous cancers earlier.

Figure 1.2: Carcinoma Growing on Anterior Half of the Right Vocal Cord, Viewed by Microlaryngoscopy. The front of the larynx is at the top of the picture.



The supraglottic region is the next commonest site while cancers starting in the subglottic region are quite rare.

Spread of Cancer

Cancers may spread in three ways; first by enlargement, expanding to grow into neighbouring structures. A supraglottic tumour may be relatively 'silent' with no symptoms until it has grown downwards onto a vocal cord and produced hoarseness. The next kind of spread is by lymph channels. Lymph, one of the fluids which bathe our tissues, is collected in channels, or ducts, that converge on lymph nodes. There is a chain of lymph nodes on each side of the neck, and cells produced by a tumour on one side of the larynx will eventually start to pour into the lymph ducts and be washed into this chain of cervical lymph nodes. A lymph node (sometimes called a lymph gland) acts as a sieve; one of its functions is to trap and kill bacteria. Cancer cells are also trapped in lymph nodes but as more cancer cells collect in a node they multiply and eventually destroy the normal cells. This spread of cancer cells from their site of origin to other parts of the body is called *metastasis*. The lymph drainage from the vocal cords themselves is very poor, which is one reason why a cancer on the vocal cord tends at first to stay where it is, without spreading. Eventually, however, such a tumour will spread off the cord and into the sub- or supraglottic region. Here there is a good lymph drainage and the lymph nodes are now at risk of being invaded. At first the invasion is microscopic, then, as the colony of *metastatic* tumour cells grows, the lymph node becomes bigger until it can be felt or even seen as a lump in the side of the neck. At this stage the tumour has escaped from its original site and there is a much smaller chance of getting rid of it. Once lymph nodes are invaded the chance of cure falls to between 30 and 60 per cent.

The last method of spread is by blood, usually in the veins that drain the tumour. When this happens, colonies of cancer begin to appear in other parts of the body, especially the lung, and cure becomes most unlikely. Fortunately, cancer of the larynx does not usually spread in this way until very late.

Symptoms

Hoarseness

The larynx has three main functions. It allows the air we breathe to reach the lungs, it produces the voice and protects the lungs, both by closing as we swallow and by coughing. Although large laryngeal tumours may block the passage of air and can sometimes cause death by suffocation, the commonest symptom of laryngeal cancer is hoarseness. Usually hoarseness is produced by a tumour sitting on or near the vocal cord and interfering with phonation. An alternative mechanism is immobilisation of a cord, by invasion either of the recurrent laryngeal nerve or of the crico-arytenoid joint. Lastly, the sheer bulk of invasive tumour growing into a cord may slow down its movements or even immobilise

it, but then there is usually enough tumour on the cord surface to have produced hoarseness at an earlier stage.

In tumours that appear first on a cord hoarseness appears early. With more distant tumours hoarseness may be a later symptom. Many smokers are hoarse already from chronic laryngitis; if such a patient is attending a speech therapy department a change in the *quality* of his hoarseness is seen as a warning sign, and the therapist must quickly take the patient back to the surgeon.

Cough

Most heavy smokers have a cough, and even quite large tumours do not themselves seem to cause much coughing. When a patient with laryngeal cancer has a cough, it is usually caused by inflammation and infection associated with the tumour rather than the tumour itself.

Pain or Discomfort

Small laryngeal tumours are not usually painful. Discomfort and pain in the throat is a sign that the tumour is large and usually infected.

Referred Pain

Referred pain in the ear is another sign of advanced disease and implies that the tumour has reached the pharynx and invaded the sensory nerves of the pharyngeal plexus, which is composed of fibres of the ninth and tenth cranial nerves. These nerves also supply the middle and external ear, so pain arising from disease in the pharynx may be misinterpreted by the brain as coming from the ear.

Dysphagia (difficulty swallowing)

Large tumours that have spread to the pharynx may produce difficulty in swallowing.

Foetor

Most large tumours outgrow their blood supply and begin to rot. They become infected and the patient's breath has a foul, rancid smell.

Dyspnoea (difficulty breathing)

A bulky tumour growing into the cavity of the larynx will eventually narrow the space through which air usually flows. This first produces breathlessness during exercise, when we breathe more rapidly. As the tumour grows larger it progressively blocks the airway. At first it is possible to suck air past the tumour which acts like a vocal cord – vibrating against the opposite side of the larynx and producing the involuntary phonation known as stridor. Gradually the airway is more and more firmly obstructed and without help by tracheotomy the patient will be suffocated.

Neck Swelling

A large tumour may grow forward and sideways through the thyroid cartilage and appear as a swelling in the neck. Usually, however, neck swelling means that lymph nodes have been invaded by the disease.

Sensation of a Lump in the Throat

This is usually only found in large tumours.

Chest Infection

When the vocal cords are prevented from moving by tumour the larynx can no longer protect the lungs. Food, drink and saliva run down the trachea and may cause pneumonia.

Role of the GP in Diagnosing Cancer of the Larynx

There must be many reasons why some people will consult their family doctor as soon as they notice any symptom, while other people will fail to ask for medical advice although they have large tumours or severe pain.

Hoarseness is a very common symptom and general practitioners cannot refer all hoarse patients to hospital. The hoarseness commonly found with a cold, bronchitis, sinusitis, or vocal abuse seldom lasts for more than a week. Therefore, a patient with a recent change in his voice will be told to return to the surgery if the voice fails to recover in two to four weeks. If the hoarseness has already been present for more than four to six weeks *then* the patient should be referred at once to an ENT department with a request for an urgent appointment.

Access to the ENT Clinic

In every branch of medicine there are certain symptoms which should ring an alarm bell. A referral letter (even if not marked urgent) that mentions hoarseness should guarantee the patient an urgent appointment. A patient with hoarseness should never join a three month out-patient waiting list.

The ENT Clinic

The ear, nose and throat surgeon will listen to the patient's account of his symptoms, then ask some questions. There are three groups of questions which should be asked.

(i) The patient will be asked whether he has any of the symptoms listed above that he may have forgotten to mention. He will also be asked about smoking and drinking habits, previous episodes of hoarseness and previous voice quality (the patient's family may be more helpful here than the patient himself).

Feminist readers may be upset by the use of the masculine when the patient is referred to; unfortunately, as mentioned earlier, this is borne out by the statistical probability that the patient will be a man.

(ii) Symptoms generally related to cancer, in particular the patient will be asked about weight loss and whether he feels generally ill.

(iii) General health and previous illnesses, especially heart and lung disease. These are important since the heavily smoking and drinking man who typically gets cancer of the larynx is also at risk from coronary artery disease and chronic bronchitis. Both these conditions increase the risk in general anaesthesia and, of course, in major surgical procedures such as laryngectomy. At this stage it is also sensible to enquire about a patient's home circumstances and job.

Physical Examination

After routine examination of the patient's nose, nasopharynx, mouth and ears, his larynx is inspected by *indirect laryngoscopy*. The technique of examining the larynx indirectly by observing its image in a dental mirror was first described in 1855 by Manuel Garcia (1805–1906). His original observations were made holding a dental mirror against his uvula using a larger hand mirror both to reflect sunlight towards his throat and to look at the illuminated image of his own larynx shown in the dental mirror. A year or two later this system was adapted using artificial light. Figures 1.3, 1.4 and 1.5 show the present-day technique and Figure 1.6 illustrates what one should see at indirect laryngoscopy.

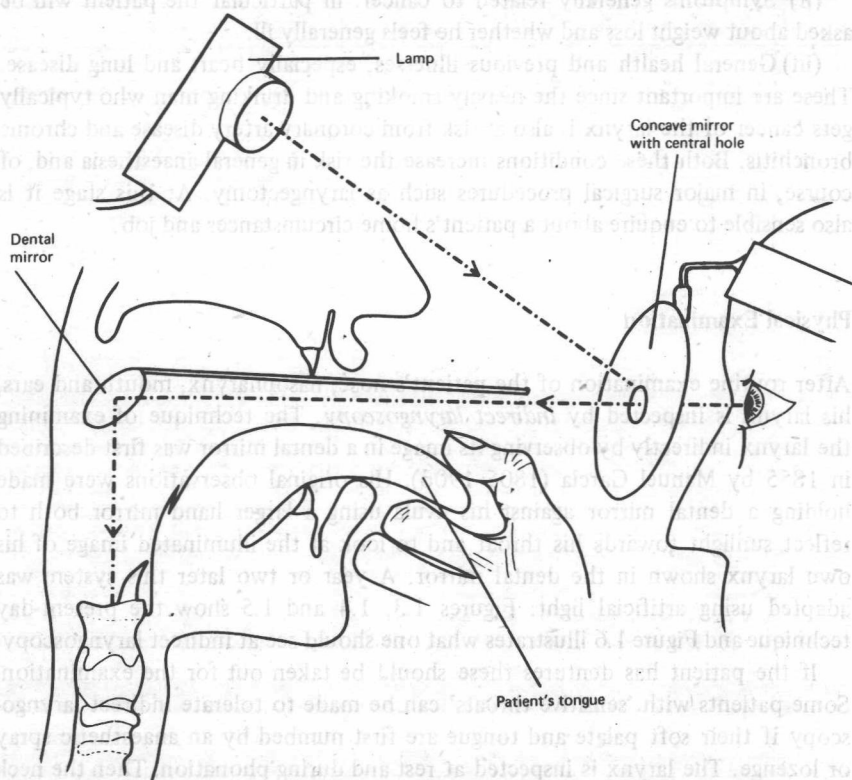
If the patient has dentures these should be taken out for the examination. Some patients with 'sensitive throats' can be made to tolerate indirect laryngoscopy if their soft palate and tongue are first numbed by an anaesthetic spray or lozenge. The larynx is inspected at rest and during phonation. Then the neck is examined by palpation: first the larynx is moved gently from side to side to make sure it is not fixed by tumour. Then the sides of the neck are carefully examined for swollen lymph nodes. After this a brief note is made of the quality of the patient's voice.

Findings on Indirect Laryngoscopy

As he places the mirror in the patient's mouth the otolaryngologist expects to find one of six possible situations.

(i) **Tumour** A tumour may clearly be seen in the larynx. It commonly grows either in the form of an ulcer, eroding the inner surface of the larynx, or as a bulky mass bulging into the airway. The surgeon will note the position of the tumour and make sure that there is no danger of it blocking the airway. He will also look carefully at the movements of the vocal cords.

Figure 1.3: Diagram of Indirect Laryngoscopy, Showing Light Source, Surgeon's Concave Head Mirror and Dental Mirror Held at the Back of the Patient's Mouth. The dotted line shows how the beam of light is reflected twice to reach the larynx.



When tumour is found the patient should be admitted to hospital for direct laryngoscopy and biopsy as soon as possible.

(ii) **Benign Swellings** Some abnormalities such as singer's nodes are easily recognisable at indirect laryngoscopy. When a benign swelling is seen the patient is either sent for speech therapy, if the surgeon thinks there is a chance that the condition will clear up without surgery, or *microlaryngoscopy* is arranged; this is a procedure in which the larynx is examined through an operating microscope. With this technique small swellings can be carefully dissected off the vocal cords without damage to the cords themselves (see Figure 1.7). After operation most patients will be sent for speech therapy: many benign swellings are caused by mechanical damage during phonation. The speech therapist will try to prevent this happening again.

(iii) **No View** The surgeon may not be able to see the larynx, either because the patient has a very sensitive throat, and cannot tolerate the mirror without coughing and retching, or because the epiglottis hangs backwards over the