It is difficult to review progress in one branch of medicine without taking into consideration the contributions that have been made in other fields and that applies to progress in broncho-esophagology. One must take into consideration the advances made in the diagnosis of bronchopulmonary diseases in other fields, notably by roentgenology, the influence of the antibiotics and the remarkable progress in the field of thoracic surgery which in turn owes much of its advances to antibiotics, to a greater knowledge of bronchopulmonary physiology, to broncho-esophagology and to advances in anesthesia.

One of the outstanding contributions in the field of physiology was that by the Hildings\(^1\) who studied the volume of the bronchial tree at various levels and speculated concerning the physiological significance, particularly on the matter of cleansing inspired air. While there was not observed a great increase in the volume of the tracheobronchial tree from the larynx to the bronchi measuring 1.5 mm. in diameter, they found a remarkable expansion in the volume of the tract in the bronchi less than 1.5 mm. in diameter. It was their opinion that this distal portion of the air passageway might be considered as a bronchiolar filter and that it probably was more effective in the matter of dust removal and humidification than the nose.

Bronchospirography is attracting more attention particularly to determine the function of the separate lung. Norris\(^2\) and his associates have been carrying out studies in this field to ascertain the extent of participation of the separate lungs in the various phases of the total respiratory function in health as well as disease.

The field of anesthesia as it pertains to broncho-esophagology has come in for a great deal of discussion. The whole problem still is unsettled. The development of certain synthetic anesthetics for topical application and instillation and the employment of sodium pentothal and curare have changed the entire picture as compared with anesthesia of 10 years ago. A majority I believe prefer local anesthesia supplemented by barbiturates or other sedatives.


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For the recognition of certain congenital cardiovascular anomalies endoscopic procedures in the newborn are becoming more important. Heretofore the most common anomaly recognized was congenital esophagotracheal fistula but it was only recently that the thoracic surgeon has been able to treat it successfully. Heatley and Emerson\(^3\) contributed an interesting paper on this subject and analyzed a series of 50 cases of bronchoscopies performed in new-born infants. A majority were performed within the first 24 hours of life. In many the indications were those of respiratory distress which persisted in spite of the commonly employed methods of conservative treatment. It was their opinion that bronchoscopy can be carried out with comparative safety in infants.

Holinger\(^4\) and his associates discussed congenital cardiovascular anomalies which produce tracheal and bronchial obstruction and emphasized particularly that laryngoscopy and bronchoscopy often may be more informative than roentgen studies.

Acute laryngotracheobronchitis now seems to be taken care of remarkably well by the antibiotics, without or with sulfadiazine, and humidification together with postural drainage and careful nursing attention. Tracheotomy is not as commonly employed as formerly and it is the opinion of many observers that bronchoscopy rarely is required. The report of Davison\(^5\) is of interest in this connection.

The employment of antibiotics either by bronchoscopic instillation or as medicated aerosol always has been of interest to bronchologists, and considerable literature is accumulating. Many of the reports are extremely optimistic. One cannot help but hark back to the days when the sulfonamides also enjoyed a remarkable popularity and were insufflated in powder form or instilled in solution and amazing claims were made. At the present time no one contemplates using any of the sulfonamides bronchoscopically. While the situation may be somewhat different with the antibiotics one's enthusiasm should not impair one's clinical judgment. Prigal\(^6\) who has contributed a number of papers on this subject made an interesting observation, namely, that there may be a temporary storage of the aerosol somewhere in the lungs as that was the only way he could explain the prolonged blood levels obtained with penicillin. It suggested to him that other forms of medication in aerosol form might possibly be introduced through the lungs for systemic purposes. He found that administering aminophyllin by aerosol in asthmatics at times succeeded even after failure when given intravenously.

Hagens\(^7\) and his group have employed penicillin inhalation therapy in a number of chronic pulmonary conditions and found
that it was a useful adjunct to other forms of therapy. They observed few complications.

Krasno and his associates employed a penicillin dust by inhalation and considered this an effective as well as a practical method in the treatment of many types of infection of the respiratory tract.

Tuberculous tracheobronchitis still constitutes a problem of interest to not only the phthisiologist but bronchologists as well. Irrespective of the development of these lesions their occurrence is of serious prognostic import.

There has always been a question whether bronchoscopy in the tuberculous might aggravate or increase the likelihood of spread. Coates studied the effects of bronchoscopy in a series of almost 500 cases. It was his final conclusion that there was no tendency for a post-bronchoscopic increase in lesions and in his group of cases the incidence was no greater than in patients who did not have bronchoscopy.

While streptomycin first employed by Hinshaw and Feldman has changed our concepts of management of pulmonary tuberculosis it also has changed the outlook in the case of tuberculous tracheobronchitis.

O'Keefe reported his results of therapy in known cases of tuberculous tracheobronchitis and it was his conclusion that the concomitant parenteral and aerosol method of administration of streptomycin appeared to be the method of choice. Patients were given one gram of streptomycin parenterally and one half gram by nebulization during the 24 hour period. The results were impressive.

With the increasing use of intratracheal or endotracheal tubes for anesthesia reports of granuloma of the larynx have appeared in the literature. It is difficult to know why these occur since they cannot necessarily be attributed to trauma at the time of introduction of the airway. Hill and others who have reported on these have emphasized the importance of mirror laryngoscopy in every patient who develops hoarseness following intratracheal anesthesia.

While injury of a bronchus as a complication of nonpenetrating external trauma to the chest has been recognized, a majority of these cases were not discovered until cicatrization was complete and atelectasis of a lobe or an entire lung was discovered. Three cases were reported by Holinger and his associates and Hodes and his co-workers reported a case. With the development of acrylic and lucite molds which may be inserted into the air passageway as demonstrated by Longmire in the repair of a large defect of the trachea the question comes up whether it might not
be feasible to contemplate this type of procedure if the rupture was discovered shortly after the accident occurred.

With a lowering mortality rate following pneumonectomy for carcinoma of the bronchus it becomes more important that the diagnosis of carcinoma be made before metastasis has occurred. A report by Norris\textsuperscript{14} indicated that only 12.9 per cent in a series of 269 consecutive cases of proved carcinoma of the bronchus were resectable, this in spite of the fact that a positive bronchoscopic biopsy was secured in over 70 per cent. It is evident that if one waits for a positive bronchoscopic biopsy before a diagnosis of carcinoma of the bronchus is made few cases will be operable. Fortunately cytologic study of bronchial secretions has aided enormously in this field and in a number of clinics studies of bronchoscopically removed secretions or sputum may give a positive diagnosis in from 80 to 90 per cent. Of particular interest was the finding of cancer cells in a large number of patients in whom bronchoscopy was absolutely negative. A recent study of operated cases indicated that operability rates are much higher in the groups where bronchoscopy is negative and cytology is positive. This is one of the outstanding contributions in the field of diagnosis in bronchial diseases.\textsuperscript{15} In the field of esophagology probably the outstanding development within the past few years is the remarkable success attained by chest surgeons in the treatment of carcinoma of the esophagus. This has its counterpart in bronchogenic carcinoma both from the standpoint of treatment and particularly from the standpoint of diagnosis for here, too, diagnoses are made late and few patients reach surgery at a time when the lesion is resectable, this in spite of the fact that the entire esophagus can now be removed with comparative safety.

There also has been a more general recognition of hiatal hernia and the literature contains many articles. Olsen\textsuperscript{16} directed attention to the possibility of frequent esophagitis as being a possible cause for cicatrization and shortening of the esophagus that sometimes is encountered in esophageal hiatal hernia. It is thought that the reflux of gastric acids into the esophagus is responsible for these recurrent attacks of esophagitis.

While we recognize that sclerosing of esophageal veins is of value in portal cirrhosis, MacCormick\textsuperscript{17} directed attention to its importance in the treatment of esophageal varices in patients suffering from Manson's schistosomiasis. He indicated that about one out of four patients suffering from this disease have fatal exsanguinating hemorrhages. It is his opinion that splenectomy and sclerosing of varices is the treatment of choice.

Strictures of the esophagus always will present difficult therapeutic problems. With the Salzer method instituted promptly,
results are remarkably good but unhappily a majority of patients do not consult a physician until there is cicatrizacion. Recent advances in the surgical treatment have permitted resection of annular strictures with apparently good results.

Foreign bodies still are bronchologic as well as esophagologic problems and one still sees large series of cases reported in the literature. In spite of advances in the field of thoracic surgery the removal of foreign bodies remains a problem for the broncho-esophagologist.

SUMMARY

Progress in any branch of medicine is dependant on contributions in other fields. In bronchoesophagology it is dependant on advances in anesthesiology, roentgenology and thoracic surgery and the influence of the antibiotics. Among the advances are:

1) The need for more endoscopic study of infants to detect congenital anomalies which now can be successfully treated surgically. In certain cases endoscopy is more important than roentgen study.

2) Tuberculous tracheobronchitis constitutes a problem. Bronchoscopy is invaluable in the diagnosis and studies have shown that it does not aggravate or increase the likelihood of spread. Streptomycin has aided immensely in the treatment of tuberculous tracheobronchitis. The concomitant parenteral and aerosal administration appears to give the best results. One gram parenterally and 0.5 grams by nebulization are given during a 24 hour period.

3) With lowering mortality rates following pneumonectomy the outlook in bronchogenic carcinoma should improve. Cytologic examination of bronchoscopically removed secretions or sputum have aided enormously and many cases with negative bronchoscopic findings now are diagnosed by cytology as carcinoma and treated successfully. Studies indicate that operability rates are higher in cases where bronchoscopy is negative and cytology is positive.

4) There is an increasing interest in hiatal hernia since many of these cases are not suitable for surgery and mechanical treatment is required. Recurring esophagitis is considered as a possible cause for the cicatrizacion and shortening of the esophagus in these cases.

RESUMEN

El progreso en cualquiera rama de la medicina depende de contribuciones en otros campos. En la broncoesofagología depende de avances en la anestesologia, roentgenología y cirugía torácica y la influencia de los antibióticos. Entre los avances se encuentran los siguentes:
1) La necesidad de más estudios endoscópicos de los niñitos para descubrir anomalías congénitas que ahora pueden ser tratados con buen éxito por medios quirúrgicos. En ciertos casos la endoscopia es más importante que el estudio roentgenográfico.

2) La tráqueobronquitis tuberculosa constituye un problema. La broncoscopía es invaluable en el diagnóstico y los estudios han demostrado que no agrava o aumenta la posibilidad de extensión. La estreptomicina ha ayudado inmensamente en el tratamiento de la tráqueobronquitis tuberculosa. La administración sistémica y por aerosol concomitante parece dar el mejor resultado. Se da un gramo por la vía intramuscular y 0.5 gramo por pulverización en cada 24 horas.

3) El porvenir del carcinoma broncogénno debe mejorar con la disminución en la mortalidad subsiguiente a la neumonectomía. Los exámenes citológicos de secreciones o esputo obtenidas broncoscópicamente han ayudado enormemente y muchos casos con hallazgos broncoscópicos negativos se diagnostican ahora como carcinoma por la citología y se tratan con buen éxito. Los estudios indican que el porcentaje de operabilidad es más alto en los casos en los que la broncoscopía es negativa y la citología positiva.

4) Existe un interés creciente en la hernia del hiato ya que muchos de estos casos no están adaptados a la cirugía y requieren tratamiento mecánico. Se considera que en estos casos ataques repetidos de esofagitis es una posible causa de la cicatrización y acortamiento del esófago.

REFERENCES