

ABSTRACTS

THE LARYNX

Acute Laryngotracheobronchitis. H. B. ORTON, E. L. SMITH, H. O. BELL, R. A. FORD. *Archives of Otolaryngology*, June, 1941, xxxiii, 6.

This serious infection fairly common in children under two years of age, is frequently diagnosed as croup or acute catarrhal laryngitis. The onset is fairly rapid and the patient becomes acutely ill, with a temperature of 102 to 106, dyspnoea, cough and a toxic appearance. Hoarseness is noted in more than half of the cases.

The cause is unknown, but it is probably a filtrable virus, which prepares the way for a secondary infection, notably by the hæmolytic streptococcus. The mortality is fairly high, in the group of 62 cases discussed in the paper it was 31 per cent. Post-mortem examination was carried out in 4 cases and the oedema and inflammation of the bronchial walls is well shown in a series of 9 microphotographs. The most common error in diagnosis is to mistake the disease for laryngeal diphtheria, a rarer condition. In both cases tracheotomy may be necessary; laryngoscopy will determine whether a membrane is present or not. The removal of thick secretions or crusts by direct bronchoscopic aspiration is an important part of the treatment. Sulfanilamides are not specific in this disease, opium and belladonna should be avoided, but iodides are often helpful. The patient should be kept in humid, though not necessarily in a steamy, atmosphere. This can be secured by the use of a humidifier, without the discomfort produced by steam tent and without increasing the temperature.

DOUGLAS GUTHRIE.

Acute Laryngotracheobronchitis. R. KAYSER. *Archives of Otolaryngology*, May, 1941, xxxiii, 5.

The writer reports in great detail a case of this disease and gives an excellent critical review of our present knowledge. The term should be reserved for cases in which the obstruction demands treatment by intubation, tracheotomy or bronchoscopic suction. Most commonly found in infants and young children, the disease has been the subject of much investigation, especially in America, during recent years. The infection may be acquired by contact with older children or adults suffering from a milder type of respiratory infection.

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The disease usually originates in an attack of acute rhinitis and pharyngitis and the onset of dyspnoea is sudden, often with hoarseness and inspiratory stridor. The clinical features may resemble diphtheria, but antitoxin gives no relief and obstruction below the canula persists after tracheotomy. Cyanosis is a late and dangerous sign. The temperature rises and fever may be absent in some cases. Bronchoscopy reveals intense congestion of the entire respiratory tract, with thick secretions and velvety mucosa. The most essential part of the treatment is relief of the dyspnoea; tracheotomy is preferred to intubation by most authorities. A crucial incision in the trachea facilitates the expulsion of secretions and the changing of the tube, and a transverse skin incision gives a better cosmetic result than a vertical incision. Fluids should be given by the mouth rather than intravenously. Sodium bicarbonate solution is preferred. Constant vigilance by trained nurses is essential.

DOUGLAS GUTHRIE.

Acute Streptococcic Laryngotracheobronchitis. E. S. CONNELL and B. C. TROWBRIDGE. *Archives of Otolaryngology*, May, 1941, xxxiii, 5.

This disease is highly infectious and respects no age group, but children are especially susceptible and the mortality varies from 35-70 per cent. Dyspnoea and toxæmia are the outstanding clinical features. The subglottic region, so vascular and so prone to œdema in the infant, is the part which becomes readily obstructed. Tracheotomy may be necessary within 24 hours after the onset of symptoms and should not be unduly delayed. It relieves the dyspnoea and allows for the removal of the sticky secretions. The result of bronchoscopic treatment has not been encouraging. Sulfanilamide is useful but does not remedy the obstruction. Oxygen and helium inhalations, administration of fluids, nasal feeding and transfusion all aid in combating the toxæmia.

DOUGLAS GUTHRIE.

MISCELLANEOUS

Vitallium Skull Plates. FRED. W. GEIB, M.D. (Rochester, N.Y.). *J. Amer. Med. Ass.*, July 5th, 1941, cxvii, 1.

In plastic repair operations on the skull autogenic bone grafts have given the best results up to the present time. These grafts, however, require a secondary incision, complicated operative procedures and may be absorbed.

There are two electrically neutral metals which can be used in vivo. One metal is silver, ninety-six per cent. chemically pure, and

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another is an alloy of cobalt, chromium and nickel called vitallium. Vitallium has tremendous tensile strength and can be transplanted over, and into bony surfaces. It produces no reaction and no atrophy of the surrounding tissue. It is non-corrosive, inexpensive and requires a much less complicated cranioplastic operation.

The writer reports three cases in some detail, all of whom were back at work within three weeks or less of the operation.

The article is freely illustrated and has a bibliography.

ANGUS A. CAMPBELL.

Sulfanilamide in Treatment of Sore Throat due to Hæmolytic Streptococci. PAUL S. RHOADS, M.D. (Evanston, Ill.) and, M. L. AFREMOW, M.D. (Chicago). *J. Amer. Med. Ass.* March 16th, 1940, cxiv, II.

The writers report a study of thirty-one patients treated with sulfanilamide and thirty-six controls treated under similar conditions but without sulfanilamide. The patients were not given sulfanilamide until their cultures had been reported positive for hæmolytic streptococci, so that on the average treatment was begun 2·8 days after onset. The average duration of the sulfanilamide treatment was 5·6 days. The average blood level attained was 6·28 mg. per hundred cubic centimetres.

The tables show that the drug did not reduce the severity of the symptoms, shorten the period of incapacity, reduce the incidence of complications or reduce the duration of the carrier state. In a few instances the toxicity of the drug was more serious than the disease. The writers feel in the average uncomplicated case of tonsillitis or pharyngitis due to hæmolytic streptococci the drug should not be used in a routine manner and no physician should be censured for withholding the drug unless severe complications arise.

ANGUS A. CAMPBELL.

Studies on the Mechanism of the Action of Sulfanilamide. JOHN S. LOCKWOOD, M.D., and HELEN M. LYNCH, M.A. (Philadelphia). *J. Amer. Med. Ass.*, March 16th, 1940, cxiv, II.

The writers feel that sulfanilamide has a bacteriostatic and limited bactericidal action in vitro on hæmolytic streptococci, staphylococci, pneumococci and colon bacilli. This action depends principally on the concentration of the drug, and the concentration of "peptone" in the culture mediums.

"Peptone" as used in this article connotes any product of protein digestion, whether prepared artificially in vitro or through the operation of natural enzymatic processes in vivo. Sulfanilamide acts by interfering with the nutritional requirements of susceptible

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bacteria. Bacteria may die out in a phagocyte-free environment through starvation and autolysis.

The addition of "peptone" to mediums, such as serum, supplies such an excess of nitrogenous material that the bacteriostatic action of the sulfanilamide is to a large degree inhibited.

ANGUS A. CAMPBELL.

Diseases of the Respiratory Tract and Air Conditioning.

CAREY P. McCORD, M.D. (Detroit). *J. Amer. Med. Ass.*,
March 29th, 1941, cxvi, 13.

Engineering capacity is far ahead of medical guidance in connection with air conditioning. There exists among human beings so many different requirements for comfort and well being with regard to atmospheric environment that it will never be possible to place in the hands of engineers any bill of air conditioning particulars uniformly suitable to all persons. By and large, too much is expected of air conditioning.

The writer feels that air conditioning holds many possibilities in addition to the promotion of comfort, efficiency and material protection. Some are directly linked with health. All considered, at the present time, it appears that the control of ordinary respiratory diseases depends to a greater extent on "human conditioning" than on air conditioning.

ANGUS A. CAMPBELL.

Cold Vaccines. H. S. DIEHL, M.D., A. B. BAKER, M.D., and
D. A. COWAN, M.D. (Minneapolis). *J. Amer. Med. Ass.*,
August 24th, 1940, cxv, 8.

Over a year ago the writers reported a series of controlled studies of several vaccines advocated for the prevention of the common cold. In a further study they used the following heat-killed bacterial vaccine. This vaccine contained per cubic centimetre: staphylococcus aureus, staphylococcus albus, of each one thousand million; streptococcus, pneumococcus, micrococcus catarrhalis, Friedländer's bacillus and influenza bacillus, of each four million. The vaccine was administered subcutaneously.

During the year the study of the students who received the vaccine reported 2.1 colds per person. The persons of the controlled group who received only a solution of sodium chloride, reported an average of 1.9 colds during the same period.

From these figures it is apparent that there is no evidence in this study that the vaccine had any influence on the average number of colds per person.

ANGUS A. CAMPBELL.

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Chemotherapy. EDWIN E. OSGOOD. *Archives of Otolaryngology*, June, 1941, xxxiii, 6.

This paper gives a useful synopsis of the value of chemotherapy in oto-laryngology. It is a form of treatment which may greatly reduce the mortality and control infectious processes, but it must not be used indiscriminately. The mortality accompanying the use of sulfanilamide and its derivatives is about 1 per cent., a mortality greater than that from the use of general anæsthetics, and the risk must be considered before chemotherapy is chosen as a means of treatment.

The choice of the drug is of the utmost importance. Sulfathiazole is to be preferred in most cases, as it is better than sulfanilamide against the hæmolytic streptococcus and better than sulfapyridine against the pneumococcus. Neoursphenamine is superior to sulfathiazole, for many strains of streptococcus viridans, while for staphylococci both of these drugs are effective and may be used in combination. Treatment should be commenced early but only after a leucocyte count and hæmoglobin estimation, because after administration it may be impossible to tell whether leukopenia or anæmia are due to the drug or the disease. The initial dose of sulfathiazole should be 2-4 gm., and 1-2 gm. every four hours day and night thereafter. It should be continued until a week after the temperature has become normal, and the cultures from the infected area are negative. In cases of meningitis it has been found that sulfapyridine enters the spinal fluid more readily than sulfathiazole and it is therefore to be preferred. Local collections of pus must be drained at once, and good results are reported from the local application of sulfathiazole powder in conjunction with the oral administration. Careful watch must be taken for toxic symptoms such as agranulocytosis anæmia, impaired renal function and skin rashes. Vomiting is frequent and need not demand the withdrawal of the drug. Fever may also be due to the drug and the temperature may not become normal until administration ceases.

DOUGLAS GUTHRIE.