of repeated dressings, adds greatly to the patient's comfort, and the time spent in hospital is reduced to a minimum.

Summary

The treatment of compound fractures and wounds is a matter of extreme urgency. Resuscitation should be started directly the patient reaches hospital in all cases, and operation should be carried out as soon as the general condition permits. With regard to the operation, the skin should be prepared with soap and water, and the use of antiseptics in the wound should be avoided. The principles of incision and excision of the wound should be carefully followed. No wound that is of more than six hours' duration should be sutured; also, no sutures should be inserted that exert any tension on the skin margins. Local sulphanilamide may be used to advantage following adequate surgery, but to use it in an effort to replace adequate surgery is to court disaster. The general prophylactic employment of oral sulphanilamide is unnecessary. The value of anti-gas-gangrene serum as a prophylactic is doubtful; in treatment it is beyond doubt. Finally, 31 cases of compound fractures and wounds are recorded with special reference to post-operative temperature and length of stay in hospital.

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GASTRIC LAVAGE IN THE DIAGNOSIS OF TUBERCULOSIS IN CHILDREN

A SURVEY OF 75 CASES

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Meunier (1898) was the first to recommend gastric lavage and the investigation of stomach contents for tubercle bacilli. Armand-Delille (1927) reported a study of 110 tuberculous children investigated by this means. He found 31% of the stomach contents positive for tubercle bacilli. Since then articles on the subject have often appeared in the literature of America and the Continent, but in this country it is only of recent years that the method has been used to any great extent. Collis and Brockington (1933) published their results in 70 children and infants under the age of 11 years. Their series consisted of 52 cases of definite or suspected pulmonary tuberculosis and 18 contacts. Tubercle bacilli were found in 12 of them. Munro (1938) in a survey of 82 children up to 13 years of age found positive results in 22 cases. In 13 of these the bacilli were of the human type, in the remaining 9 of the bovine type.

Present Investigation

The investigation was carried out at the Adelina Patti Hospital of the Welsh National Memorial Association. 75 cases were under review, consisting of children of both sexes, aged from 2 to 11, admitted to the hospital during the past two years. They included 64 pulmonary or observation cases and 11 non-pulmonary ones. So far as possible all cases of faucial, nasopharyngeal, and middle-ear tuberculosis were excluded. This was done to obviate any chance of obtaining a positive result from the discharge swallowed from any of these sources.

Method Used.—The technique is simple, and no real difficulty has been experienced. The apparatus used is a No. 10 catheter joined by a glass connexion to a piece of rubber tubing fitted with a glass funnel. The stomach is washed out in the morning after the child has fasted for fourteen hours. The apparatus is sterilized and connected together beforehand. The child sits on a table and is supported by a nurse, who also holds the child's hands. To prevent biting of the tube a spatula is placed over the lower teeth. The end of the catheter is lubricated with sterile glycerin. The child is told to swallow and at the same time the catheter is passed. When it is in the stomach a nurse pours sterile water through the glass funnel, and this is immediately allowed to flow back into a sterile bowl by means of siphonage. The process is repeated several times, using in all about 200 to 300 c.cm. of sterile water. It has been found more convenient to pass the catheter through the mouth than through the nose. Particles of sputum are often observed in the returning fluid. The whole procedure takes about five minutes, and is accompanied by the minimum of inconvenience or tears—so much so, that one patient aged 3½ years used to give an exhibition of how to swallow the tube for the benefit of others who were to be done later. The contents are put into sterile bottles and dispatched on the same day to the Central Tuberculosis Laboratory at Cardiff, where a direct examination is made by the Ziehl-Neelsen method, after concentration, cultures are set up, and guinea-pig inoculations are done. Owing to the wartime shortage of guinea-pigs it has not been possible to inoculate in every case.

Family History.—A history of contact with open cases of pulmonary tuberculosis in father, mother, sister, or brother was obtained in 46% of the patients. In some of the remainder a remote family history in grandfathers, grandmothers, uncles, etc., was elicited, but as there was no intimate contact the family history was regarded as clear.

Symptoms and Signs.—Of the 64 pulmonary or observation cases 40 had symptoms and 24 had none. The predominant symptoms were cough and malaise. Physical signs were present in 40 cases. In the other 24 no physical signs could be found. In 2 the first sign was erythema nodosum. In many the signs and symptoms were vague and indefinite and by no means distinctive of pulmonary tuberculosis.

Tuberculin Test.—All the 75 cases were tuberculin-tested on admission, either by the Mantoux method, using 1 in 10,000 tuberculin, or by the patch test (Vollmer). The result of the test was read as strong, medium, mild, or negative, according to the reaction obtained. Where no reaction was obtained by the Mantoux 1 in 10,000 or the patch test, Mantoux 1 in 1,000 was used, but in only a small proportion of the cases was this necessary. A strong positive reaction was obtained in 22 cases, 20 gave a medium reaction, and 29 gave a mild reaction; 4 cases were completely negative to 1 in 100 tuberculin.

Radiological Appearances in the Pulmonary or Observation Cases.—Parenchymal lesions were apparent in 35 cases, dense nodes and enlarged root shadows in 19, and pleurisy in 6 (two with effusions; 4 cases were regarded as radiologically within normal limits).

Results of Gastric Lavage

Tubercle bacilli were found in the gastric contents of 24 cases (Table I). A positive result was not obtained in any of the non-pulmonary cases. The tubercle bacilli found were all of the human type. It is interesting to note here that positive results were obtained in both cases of erythema nodosum.

TABLE I.—Details of the 24 Positive Cases

Age Group	No. of Cases	Bacteriological Examination				Tuberculin Test		
		Direct	G.-P. and Culture	G.-P. only	Culture only	Strong	Medium	Mild
2-3	4	1	1	3		3	1	
3-4	5	1	2	1	2	3	2	
4-5	2		1		1	1	1	
5-6	5		3	1	1	5		
6-7	1		1			1		
7-8	2		1		1	2		
8-9	1		1				1	
10-11	4	1		2	2	2		2

It will be noted that a positive result was obtained in 24 (37%) of the 64 pulmonary or observation cases. Tubercle bacilli were found in 3 specimens on direct examination after concentration. 10 were positive on culture and guinea-pig inoculation, 7 on culture only, and in 7, a positive result was obtained after guinea-pig inoculation only. It is recognized that a positive result on direct examination should not be accepted unless confirmed either by culture or by guinea-pig inoculation. In our series the three positive results on direct examination were also positive on culture or guinea-pig inoculation.

TABLE II.—Radiological Appearances in the 24 Positive Cases

Case No.	Exaggerated Roots. Dense Nodes in Roots or Lung Fields	Lung Parenchyma	Septa	Pleura
1		Medium mottling in right upper and middle zones		
2		Dense shading in right mid and lower zones		
3	Right and left root shadows much enlarged	Streaky shading right base		
4		Homogeneous shadow right parahilar region, fading towards periphery		
5		Medium shading right lower zone		
6		Left costo-phrenic angle lost. Some shading in paramediastinum and apex	Right interlobar septum visible	
7		Fine mottling right upper zone. Opacity along periphery of left lung. Costo-phrenic angle obliterated		
8		Mottling in right upper and mid zones		
9		Shading left apex		
10		Dense shading right lower zone		
11		Medium mottling right and left upper and mid zones		
12		Ground-glass opacity left upper and mid zones		
13		Fine shading all zones both lungs		
14		Medium mottling right upper and mid zones		
15		Medium shading towards right base and in 2nd space		
16		Small area of dense shading 4th space right		
17		Area of medium shading 4th and 5th spaces right		
18		Fine mottling all zones both lungs		
19	Right root enlarged	Fine mottling at right base		Thickening of pleura
20	Right root enlarged	Shading left parahilar region	Left interlobar septum visible	
21		Primary focus 2nd rib right		
22				Right pleural effusion
23				
24		Streaky shading in 2nd right intercostal space		Left pleural effusion

From Table II it will be seen that a parenchymal lesion was present in 22 of the positive cases and pleural effusions in the remaining 2. The type of lesion varied in size and position from a focus of minimal extent to definite mottling. It is noteworthy that in 14 cases the lesion was situated in the right lung field, while 4 had lesions in the left lung and 4 others had bilateral involvement.

Discussion

Our conception of tuberculosis in the adult is that of a disease characterized by symptoms and signs such as cough, expectoration, etc., physical signs in one or both lungs, radiological changes in the same areas, and tubercle bacilli in the sputum. These as a whole are so rarely present in children, except in a child who has the adult type of disease, that a definite diagnosis is very often diffi-

cult to establish, especially when the only evidence of infection is a positive tuberculin test. In most of these cases sputum is not obtainable in the ordinary way, either because children do not cough or because they are too young to expectorate.

It is recognized that as the child approaches adolescence a positive tuberculin test loses its significance unless a previous test has been known to be negative. It is generally agreed, however, that in infancy and childhood a positive tuberculin test is of pre-eminent importance. It will be noted that in 16 of the positive gastric lavage cases the patients were between the ages of 2 and 6 years, that in 12 of them the tuberculin test was strongly positive, while in the remaining 4 a medium reaction was obtained.

When a positive tuberculin reaction is obtained in a previously negative reactor, and this is accompanied by a radiological lesion in the lung, then the lesion in most cases is a tuberculous one and primary in character. In the absence of this information a parenchymal radiological lesion and a positive tuberculin test do not always justify a definite diagnosis of tuberculosis. A reliable laboratory method for making a diagnosis in such cases is greatly needed. The examination of the faeces for tubercle bacilli in children has not given uniformly favourable results.

Since the work of Meunier an increasing number of workers have reported favourably on gastric lavage as a diagnostic method. This is therefore recommended because of the need for an accurate diagnosis and because, as mentioned earlier, sputum is unobtainable in infants and young children. As so many of our cases gave no clinical evidence of pulmonary disease and showed a minimal radiological lesion, we would have hesitated to make a definite diagnosis were it not that a positive result was obtained after gastric lavage. The importance of this addition to our diagnostic armamentarium cannot therefore be too highly rated.

Our results have shown that tubercle bacilli were present in 22 of 35 cases with parenchymal lesions. In the remaining 13 cases we failed to find tubercle bacilli in the gastric contents. We feel that positive results might have been obtained in these if the gastric contents had been examined on successive days as suggested by Poulsen *et al.* (1929).

There are two possible explanations for the negative results in these cases: (1) The gastric lavage was done in the early stage of the lesion, before tubercle bacilli were discharged into the bronchus. We recommend, therefore, that the method should be used frequently during treatment. (2) The length of time the lesion had been present in the lung before coming under observation, with the consequence that the process of healing has started and the lesion is shut off from its communication with the bronchus.

A positive result at once raises the question whether these children should be regarded as infectious and therefore be segregated. This implication has not yet been fully estimated, but we feel that a child with tubercle bacilli in its stomach contents should be held to be infectious and that such a child should not be considered to be non-infectious until repeated negative results have been obtained.

Happily, the clinical course of the disease in children is favourable, the lesion either gradually resolving completely or leaving evidence of calcification or of fibrosis.

Summary

The results of the examination for tubercle bacilli of the gastric contents of 75 children are reviewed.

Positive results were obtained in 37% of 64 pulmonary or observation cases.

Negative results were obtained in all non-pulmonary cases.

The tubercle bacilli present in the gastric contents were all of human type.

The presence of tubercle bacilli in the gastric contents establishes a definite diagnosis.

Segregation of such cases is advocated.

Gastric lavage should be a routine diagnostic measure.

It should be done on successive days, and frequently during treatment.

We are greatly indebted to Dr. D. W. Fenwick Jones, medical superintendent of the Adelina Patti Hospital, for allowing us the use of the case records and for much valuable advice and assistance. Our thanks are also due to Dr. D. A. Powell, principal medical officer, Prof. Tytler and Dr. Ruth Milne of the Central Tuberculosis Laboratory, and to Sister Powell, who carried out so successfully the actual procedure of gastric lavage.

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GROUP PSYCHOTHERAPY

BY

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During one year's psychotherapeutic work at the Runwell Hospital for Nervous and Mental Diseases and in the Clinics of the Southend General and East Ham Memorial Hospitals I treated 70 neurotic and early psychotic patients with deep and intensive psychotherapy. Of these patients 87% were cured or sufficiently improved to be discharged. I would like to make some observations on the methods employed in an attempt to show that group psychotherapy is more practicable than has been believed hitherto—and, here at the outset, may I make clear the distinction between three different terms I use: *Analysis* will refer to all methods and degrees of analysis, except that particular method introduced and practised by Freud and his followers, for which *psycho-analysis* is reserved. *Psychotherapy* is, of course, used to designate any or all of the existing psychological methods of treatment.

Disadvantages of Freud's Method

Freud, in his revolt against the overpowering influence of the physician on the patient which results from hypnosis, tried by his analysis to create a form of treatment in which the personal influence of the physician was at the minimum, but which had the great disadvantage that the treatment became so lengthy that it was impracticable for most people. There were three other disadvantages which reduced the usefulness of Freudian psycho-analysis:

1. Nearly every neurotic and psychotic is, as part of his illness, in a state of *reduced activity* (activity in the sense of participation in the different spheres of social life). To keep him in this state—as he must be kept, because the psycho-analysis lasts so long—will probably help him to make that unhealthy state a chronic one.

2. Every neurotic or psychotic is unable to be independent. He has either never gained his independence or he has lost it. To keep such a patient for a long time in dependence upon a psycho-analyst simply tends to make this state, too, a chronic one—even, unfortunately, in many cases an incurable one.

3. The type of patient who is, *a priori*, suitable for psycho-analysis is very limited in number, as, apart from considerations of the length of treatment and the heavy expense incurred, many neurotics and early psychotics are not accessible by free association, which is, of course, a basic part of psycho-analysis; also, many of them do not possess the degree of intelligence necessary for a successful treatment by analysis.

Method used in the Present Series

In contrast to this Freudian method, the main features of my system were as follows: (a) shortening of the time of analysis; (b) the combined usage of individual and group treatment; (c) the introduction of a method of situational treatment; (d) the introduction of new forms of social treatment; and (e) bridging the gulf which often exists between full insight and cure in psycho-analytical treatment.

With regard to the shortening of the time of the analysis, the question arises: Is it possible, in a short time, to get a more or less complete knowledge of the *deeper causes*—i.e., the subconscious background of the patient? The answer seems to be that it is possible, but only if one accepts the conception that there is a general attitude exclusive to every individual. A "general attitude" is not the sum of single attitudes, which varies at the moment of the event (this would be behaviour), but is usually a previously fixed and therefore anticipated attitude towards all situations that are met with. It is formed in the first years of childhood, and though later events may modify it, even to an extreme degree, they never change it completely. Where it has become a hindrance to the patient it can be so modified for good by intensive psychotherapy that it will cease to cause him any further trouble.

But how can this general attitude, and through it the subconscious background of the patient, be ascertained? My method was as follows:

All patients are asked to write down their earliest childhood recollections. At first many are doubtful if they can do this, but I have hardly ever seen any who have not been able to do so. They are then asked to write, in instalments, their aims and ambitions (especially between the ages of 10 and 14), their likes, dislikes, and dreams. What I learn from these documents, together with the exact social history, an interview with a relation and two or three sittings with the patient, enables me to get a picture of the subconscious background.

This approach differs from Freud's psycho-analysis in that: (1) It takes into account the whole life—life in the sense of psyche, body, and environment. (2) There is no synchronization in the knowledge of the deep causes of the illness by the therapist and the patient (the therapist knows this first), whereas in psycho-analysis the patient and the physician learn more or less at the same rate. (3) It does not agree that "making conscious" is a means of effecting a cure, even by way of transference and subsequent solving of the transference situation, as happens in psycho-analysis. (4) It avoids the Scylla and Charybdis of the theory of symbolism which is so general, on the one hand, and the interpretation of the psycho-analyst which is so personal, on the other, by assuming that there is one "general attitude" in every person (this being an individual but at the same time stable factor).

This approach uses the process of analysis, but the reason why psycho-analysts did not employ it is that in a short analysis the psychotherapist gets the knowledge of the deeper background but the patient does not. Diagnosis is therefore not identical with cure—and in order to obtain a cure the psychotherapist would somehow have to transfer that knowledge to the patient, would have to lead him, and would endanger the treatment by becoming an overpowering factor.

Situational Treatment

In order to avert that danger a new avenue must be found. This new avenue, in my opinion, is situational treatment, which must be clearly distinguished from institutional treatment. Under "situational treatment" I