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CONTENTS

	PAGE
EMPYÆMA IN CHILDREN	109
By W. E. TANNER, M.S., F.R.C.S.	
FRACTURES AT THE WRIST-JOINT	114
By E. G. SLESINGER, O.B.E., M.S., F.R.C.S.	
RIDDING THE EMPIRE OF LEPROSY	119
SURGICAL RESURRECTIONS—III.	121
EDITORIAL NOTES	122
POST-GRADUATE NEWS	122
REVIEWS	125
FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—	
SPECIAL COURSES	vi

EMPYÆMA IN CHILDREN.

CLINICAL LECTURE GIVEN AT THE NORTH-EAST
LONDON POST-GRADUATE COLLEGE, ON FEBRUARY 1,
1929.

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FOR the purpose of this lecture it is proposed to give an account of twenty children admitted consecutively into the Evelina Hospital for Children and to comment on the features they present.

Fourteen were males and six females.

Four were under 1 year old ; nine were under 2 years ; eleven were under 3 years ; twelve were under 4 years ; sixteen were under 5 years ; nineteen were under 6 years, and one patient was 10 years old. Therefore,

they form a useful series for the purpose, because empyæma is most dangerous in the early years of life. The length of illness before admission to hospital was two months in one patient, six weeks in another, five weeks in three, one month in two, three weeks in three, two weeks in three, one week in two, four days in one, three days in two, and one day in two. From this table and the table showing the time of operation after admission, it will be seen that no operation by rib resection was done within three weeks of the onset of the illness. No patient admitted more than three weeks after the onset died ; so that the immediate prognosis in these patients was not affected by late admission. Apart from delayed healing of the empyæma wound, failure of the lung to expand or fibrosis of the lung, the chief disadvantage of late admission to the hospital

TABLE A.—TWENTY CHILDREN

Patient	Sex	Age	Length of illness before admission to hospital	Symptoms	Signs in chest which led to needling	Time of operation	Anæsthetic used
1	M.	3	2 months	Wasting, anæmia, Cough, dyspnœa	Empyæma necessitas, bulging intercostal spaces, stony dullness, breath sounds and vocal resonance absent	Day of admission	Open ether
2	F.	4½	1 month	Pale, thin. Dry, short cough, pain in left chest	Dullness, no breath sounds, no vocal resonance lower half of left lung	2 days after admission	Open ether
3	F.	1¾	2 weeks	Pale, thin. Dyspnoea and restlessness	Dullness, no breath sounds, diminished vocal resonance	15 days after admission	C ₂ , E ₈
4	M.	1½	3 weeks	Very ill. Grey and dyspnœic	Very little movement of chest, bronchial breathing and râles over both sides of chest	Left 12 days after admission Right 19 days after admission	CHCl ₃ CHCl ₃ and E
5	M.	9/12	1 week	Dyspnœa, cough, restlessness	Dullness and bronchial breathing	29 days after admission	Open ether
6	M.	4½	1 day	Listless, cyanosed, sleepy	Dullness and diminished breath sounds	27 days after admission	Open ether
7	M.	1 2/12	5 weeks	Fretful, loss of appetite, dyspnœa, cough, vomiting, diarrhœa	Dullness, diminished breath sounds, ægophony	Day of admission	None
8	M.	1 2/12	1 day Submental abscess 2 weeks before	Restlessness, head retraction, vomiting	Dullness, diminished breath sounds and vocal resonance, bronchial breathing with dry râles	2 days after admission	None
9	F.	5	1 week	Pain in left side of chest, diarrhœa, dyspnœa, cyanosis, herpes, labialis	Dullness, diminished breath sounds, faint bronchial breathing	16 days after admission	Open ether

WITH EMPYÆMA.

Method of drainage	Character of pus in chest	Organism isolated	Remarks	Result of operation	After-history
Rib resection and open drainage through a rubber tube	Green thick, no organisms seen	Pneumococcus	Right lobar pneumonia with nephritis. Meta-pneumonic empyæma opened long after the termination of the pneumonic process in the lung	Wound healed 61 days after drainage	3 months later, X-rays showed opaque areas in right upper lobe and right base. Costophrenic angle still obscured
Rib resection and open drainage through a rubber tube	Thick, pneumococci present	Pneumococcus	Lobar pneumonia both lungs. Meta-pneumonic empyæma opened on left side after the end of the pneumonic process in the lungs	Wound healed 35 days after operation	No further symptoms
Rib resection and open drainage through a rubber tube	Green, pneumococci present	Pneumococcus	Broncho-pneumonia both lungs. Left empyæma opened but patient developed septicæmia with nephritis, oedema of hands and feet, blue discoloration of left eye and dilated veins in left temporal fossa	Died 16 days after operation	—
Rib resection and open drainage through a tube	Thin pus. No organisms seen	Streptococcus	Broncho-pneumonia both lungs. Double empyæma. Pyo-pericardium	Died 2 days after second operation	—
Rib resection and open drainage through a tube	Thin pus. No organisms seen	Streptococcus			
Rib resection and open drainage through a tube	Green pus. <i>Staphylococcus aureus</i> . Good phagocytosis	<i>Staphylococcus aureus</i>	Lobar pneumonia both bases. Right empyæma opened 5 weeks after onset of disease	Healed in 3 months	No further symptoms
Resection of a rib with open drainage through a tube	Green curdy pus	Pneumococcus	Lobar pneumonia both lungs. Right empyæma opened 4 weeks after onset of illness	Died 24 days after operation. Post-mortem 3 oz. of green pus found in a closed cavity between inner aspect of lung, pericardium and diaphragm	—
Aspiration of chest with needle	Yellow green pus	Pneumococcus	Purulent effusion at end of attack of left lobar pneumonia. Aspirated	Discharged chest clear 18 days after last aspiration	No further symptoms
Aspiration of chest with needle daily	Yellow fluid pus. Streptococci	Streptococcus	Right pneumonia. Syn-pneumonic empyæma, due to streptococcal infection. Needled daily	Died 2 days after first aspiration	—
Rib resection with open drainage through a tube	Greenish-yellow. Pneumococcus	Pneumococcus	Double pneumonia. Left empyæma, opened 23 days after onset of illness. Cavity extended from diaphragm to third rib	Developed chicken-pox. Re-admitted 3 months later with wound still discharging. Under general anaesthesia, sinus excised, portion of rib removed. Large tube put in for drainage and smaller one for irrigation	Healed in 10 weeks. No further symptoms

TABLE A.—TWENTY CHILDREN

Patient	Sex	Age	Length of illness before admission to hospital	Symptoms	Signs in chest which led to needling	Time of operation	Anæsthetic used
10	M.	10	5 weeks	Wasting, dyspnoea, swelling of left side of chest	Dullness and absent breath sounds	Day after admission	Open ether
11	M.	4	3 weeks	Wasting, anæmia, dyspnoea	No movement of chest, dullness and absent breath sounds	Day after admission	Open ether
12	M.	9/12	2 weeks	Pale, ill. Dyspnoea, cough	Dullness and diminished breath sounds	7 weeks after admission	Local
13	M.	11/12	5 weeks	Choking, loose cough	Poor expansion, dullness, diminished breath sounds	4 days after admission	Open ether
14	M.	2	1 month	Cough, dyspnoea, wasting	Dullness, diminished breath sounds	Day after admission	Open ether
15	F.	1 5/12	3 days	Cough, dyspnoea, abdominal pain	Dullness, absent breath sounds	12 days after admission	Open ether
16	M.	5½	4 days	Flushed cheeks, herpes, cough, dyspnoea	Dullness, bronchial breathing, diminished breath sounds	13 days after admission	Open ether
17	F.	2 8/12	6 weeks	Cough, dyspnoea, loss of appetite, herpes, labialis	Dullness, feeble breath sounds, repeated needling. X-rays	11 days after admission	Open ether
18	F.	10/12	2 weeks	Cough, dyspnoea	Dullness, decreased breath sounds	18 days after admission	Open ether
19	M.	4½	3 weeks	Wasting, anæmia, cough	Dullness, diminished breath sounds. Heart displaced to left	Day of admission	Open ether
20	M.	5½	3 days	Cough, headache, vomiting	Diminished movement, dullness, diminished breath sounds, no vocal fremitus, no vocal resonance	16 days after admission	Local

is that a continuous record of the temperature, pulse, respiration and weight of the patient from the beginning of the illness is lacking. Pyrexia for more than seventeen days with loss of weight is strong evidence of pus in the chest or of unresolved areas of pneumonia or of tubercle. At this stage,

careful X-ray examination and needling the chest may save the patient from a prolonged and dangerous illness.

The symptoms are shown in Table A. The dry short cough typical of empyæma was present in one patient. Abdominal pain should not deceive the careful observer.

WITH EMPHYÆMA—continued.

Method of drainage	Character of pus in chest	Organism isolated	Remarks	Result of operation	After-history
Rib resection with open drainage through a tube	Greenish pus. 24 oz.	Pneumococcus	Left pneumonia. Meta-pneumonic empyæma opened 5 weeks after onset of illness	Healed in 2 months	No further symptoms
Rib resection with open drainage through a tube	Greenish pus. 1½ pints	Pneumococcus	Left pneumonia. Meta-pneumonic empyæma opened 3 weeks after onset of illness	Healed in 2½ months	No further symptoms
Rib resection with closed drainage through a tube	Thick yellow pus	Pneumococcus	Broncho-pneumonia both lungs. Left empyæma opened 9 weeks after onset of illness with local anæsthesia and closed drainage	Healed in 4 weeks	No further symptoms
Rib resection with open drainage through a tube	Thick yellow pus	Pneumococcus	Left pneumonia. Empyæma opened 39 days after onset of illness	Healed in 5 months	No further symptoms
Rib resection with closed drainage	Green pus	Pneumococcus	Right lobar pneumonia. Empyæma opened with closed drainage one month after onset of illness	Healed in 4 weeks	No further symptoms
Rib resection with closed drainage	Green pus	Pneumococcus	Right lobar pneumonia. Empyæma opened with closed drainage 15 days after onset of illness	Healed in 3 weeks	No further symptoms
Rib resection with closed drainage	Green pus	Pneumococcus	Left lobar pneumonia. Empyæma opened 17 days after onset of illness with closed drainage	Healed in 3 weeks	No further symptoms
Rib resection with open drainage. Interlobar empyæma	Thick green pus	Pneumococcus	Lobar pneumonia left upper lobe. Interlobar empyæma opened 7½ weeks after onset of illness with open drainage	Unhealed 17 months after operation	Healed after injection with Beck's paste
Rib resection with open drainage	Thick green pus	Pneumococcus	Left pneumonia. Empyæma drained one month after onset of illness	Healed in 2 months	No further symptoms
Rib resection with open drainage	Thick green pus	Pneumococcus	Left pneumonia. Empyæma drained 3 weeks after onset of illness	Developed scarlet fever. Healed in 3 months	No further symptoms
Rib resection with closed drainage	Thick green pus	Pneumococcus	Right lobar pneumonia. Empyæma drained under local anæsthesia with closed drainage 19 days after onset of illness	Healed in 4 weeks	No further symptoms

Anæmia and wasting were common.

The signs are shown in Table A. Tubular breathing is often heard over an empyæma in children. The diagnosis should be suspected where there is a continuance of fever, even in the absence of physical signs. X-ray examination and needling suspicious

areas are a great help in diagnosis, see patient 17 and patient 6, where a small mediastinal empyæma was missed.

A hurried rib-resection should never be done. Aspirate first and examine the fluid histologically, and bacteriologically.

If the pus is thin, aspiration should be

done daily. If pneumonia is present, aspiration should also be employed until the active inflammation in the lungs has ended. In streptococcic cases the pus becomes localized later than in the pneumococcic, and the pus is usually thin.

In meta-pneumonic empyæma which is localized, open anæsthesia is quite satisfactory but local anæsthesia is better when there is active inflammation in the other lung. Failing local anæsthesia, gas and oxygen and ether with the face-piece strapped on to the face to increase the intrapulmonary pressure is probably the best.

Operative Treatment.—In two patients aspiration only was performed. In one, patient 7, a meta-pneumonic pleural effusion, this sufficed, but in the other patient 8, a syn-pneumonic streptococcic pyothorax, the patient died three days from the onset of the disease.

In thirteen patients rib resection with open drainage through a tube was done. In five patients rib resection with closed drainage through a tube. In these the empyæma healed more rapidly, and in children where the expansion of the lung is slow this is the method to be preferred.

Irrigation is best avoided in children, except in very chronic empyæmata with secondary infection.

Four patients died. Two were streptococcic and two pneumococcic. The mortality in this series is low because the streptococcic cases did not come under the care of the surgeon; some form of continuous aspiration being employed for these patients, because rib resection carries such a high mortality.

When open drainage is employed a thick layer of antiseptic dressing should be used to prevent secondary infection.

Blowing through Woolf's bottles is the best method of promoting re-expansion of the lung in children.

Artificial sunlight in half the usual therapeutic dose was used in many of the patients with great benefit.

FRACTURES AT THE WRIST-JOINT.

By E. G. SLESINGER,

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Lecture delivered for the Fellowship of Medicine, on October 22, 1928.

GENTLEMEN,—When I was asked to talk to you on some aspect of the treatment of fractures I had no hesitation in choosing fractures at the wrist for several reasons. The first of these is that they are so very common, and the second is that on the whole they are, I think, less satisfactorily dealt with than most of the fractures. Perhaps even more important from your point of view is the fact that the patient, not being confined to bed, does not appreciate the difficulty or seriousness of the injury, and is very apt, quite unjustly, to blame his doctor for not securing a perfect result in what appeared to him a simple accident. I think there is no subject more unsatisfactory from the doctor's point of view than the treatment of fractures. If they do well he gets no credit, because the patient thinks that anyone ought to be able to set a broken bone, and if they do badly he receives a quite unmerited amount of abuse, which is usually accentuated when his moderate account is sent in. The fractures I want to discuss to-day are mainly those of the lower end of the radius, sometimes associated with separation of the styloid process of the ulna, and equally important, though far less common, are the fractures of the proximal row of the carpus.

The first group, fractures of the lower end of the radius, are usually fairly true to type and fall conveniently into four groups, namely, Colles' fracture, separation of the lower epiphysis, chauffeur's fracture and fracture of the lower quarter of the shaft.

Of these Colles' fracture is by far the commonest and the most important. This