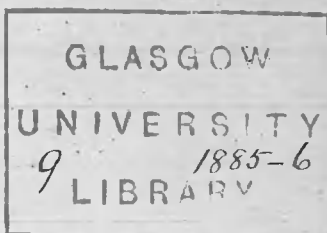


THESIS  
Cases



of Empyema  
with  
Observations

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*Present*

E. Hargreaves, M.B.

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Report  
of Cases of Empyema  
with Observations.

The following four cases of Empyema occurred in my private practice and were treated at their homes.

The first case will be reported more fully, as being of more interest and more instructive than the others.

Edward B. Silver Engraver

Age 25 years. H<sup>t</sup> 5 ft. 10. Stout.

Family History Father suffers from chronic rheumatism, mother six brothers and a sister are all healthy.

Personal History Has suffered from slight attacks of bronchitis or bronchial catarrh and biliousness, but no serious illness. A few months previous to present illness, he came into a good business having

obtained the appointment of engraver for the whole of the work of a leading silver-smith so that he had abundance of work for self and several workmen, and during the previous Winter he had worked much overtime, sometimes through the night. The nature of the work requires plenty of light, so that, there is much gas burnt; the rooms are often small, the attitude at work being stooping, it is seen the mode of life for several months was not hygienic, and may be said to have predisposed a strong constitution to an attack of a serious illness

1879. Mar. 8. E. B. came to my Surgery, and I prescribed for bronchial catarrh and hoarseness

10. He is feeling better and is at business

11. After dining in town on fish

beef and vegetables, was taken ill in the afternoon with pain in the bowels and vomiting; and severe pain behind left shoulder.

Prescribed mixture containing

Bismuth Carb. and ordered turpentine stupes to shoulder.

12. Better of sickness, and pain in the shoulder but has severe pain in the lumbar region.

Prescribed Saline mixture containing

Vir: Antimonialis, and

℞℥. Calomel  $\frac{gr. 2}{gr. 1}$  & ℞℥.  $\frac{gr. 1}{gr. 1}$

13. Found him a little better on visiting, but in the afternoon was taken with very severe pain on left side of the chest, apparently pleuritic. The skin was hot, cheeks flushed, pulse hard and quick Temp:  $102^{\circ}$ , when I saw him in the evening.

Repeated the mixture and pill.

14. Severe pain both in the side, and lumbar region. Ordered the application of hot linsed meal

poultices to the side and hot dry bran bags to the back, and prescribed Pot. Bicarb  $\text{gr} \times 10$  Pot. Iodid  $\text{gr} \times 5$  for a dose, every 4 hours.

15. Somewhat relieved.

16. Foul tongue, bowels rather loose, Presented. - Bismuth Carb.

18. Dulness on left side of the chest with pain. Orderedunction of Linnæus Hydrarg. Co. night and morning, in the side.

21. Temp.  $102^{\circ}$  (axilla) Pulse 120.

Slight dyspnoea and wheezing Prescribed - Lij. Ammon. Acetatis

25. Dulness on left side extending from base of chest to above the nipple. At the apex of left lung rough breathing and prolonged expiration, which might be likened to carriage running over stony road. Wheezing in the right side. Cardiac murmurs heard very distinctly over two intercostal spaces on the right side ( $2^{\text{d}}$  &  $3^{\text{d}}$ ) thought to be

aortic, but might be exocardial.  
Tenderness over the liver. Sleepless.

Temp: 102° Pulse 130.

Prescribed - *Liq. Am. Acet.* (conc) ʒi

*Ammon. Carb.* qv. ʒ.

*M Digitalis* m 10

for a dose every four hours,  
and the Hydrag. mixture.

*Pulv. Opiae* co. qv. ʒ. 5. 1 hrs.

26. Has had a better night.

Rep: Inst: and pulv. hr.

27. Restless and delirious.

29. Passed a restless night; says  
he always feels better with the  
morning light.

31. Applied large blister to side  
which rose well and discharged  
a quantity of serum.

April 4. General condition improved

" 7. Applied large blister to left front.

9. More wheezing on the right side

Prescribed - *ʒi. Ammon. Ac.* *P. S. Iodid*

ʒ Dec. *Sarzæ*

12. Delirium worse, sleepless, ex-  
cessive sweatings and diarrhoea

Prescribed - Ac. Sulph Dil. & Tr. Catechu.

13. More wheezing in chest

14. Purging continues.

Prescribed. Creta. & Tr. Catechu.

15. More wheezing, and dyspnoea.

Pulse quick & feeble.

16 Dulness of chest extends upwards to the 2<sup>nd</sup> or 3<sup>rd</sup> rib, and beyond the median line in front. There is now bulging of the intercostal spaces and oedema of the parietes of chest.

Measurement on level with the bottom of sternum Left 21½ in. Right 16 in.

With the assistance of my partner I performed Thoracentesis with Aspirator, in the 7<sup>th</sup> interspace two inches external to ~~the~~ the line of the nipple. Removed 84 ounces of creamy pus; no smell.

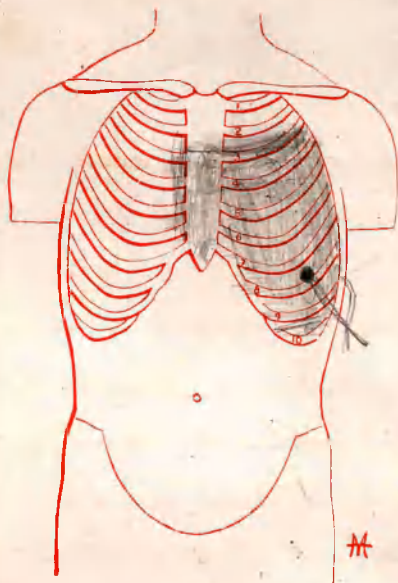
Breathing became much easier during the flow of the pus.

Applied lint and plaister to puncture

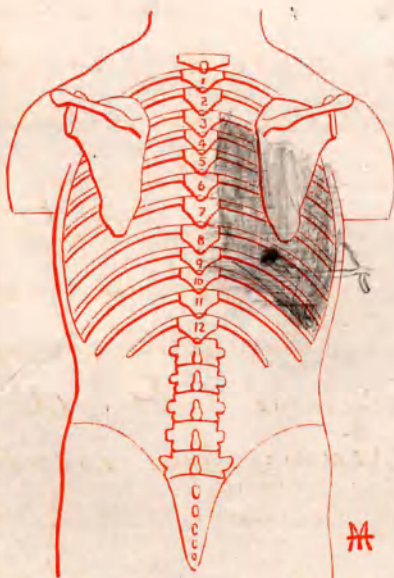
17. Has passed a comfortable night; bowels not been moved since operation; much less delirium and.



S. B. No 25.



S. B. No 25.



and sweating. Patient is in good spirits  
 Prescribed - Inf. Caribon + Ac. Nit-Helen Feb  
 18. Had passed a restless night,  
 more delirium. At 8. a.m. he  
 appeared to ~~retate~~ relatives to  
 be sinking, and thought he was  
 dying at 10.30 a.m. when I was  
 sent for, in haste. His wife had  
 given him a drink of brandy  
 which rallied him, but I found  
 him slipped down in the bed.

Procured a long probe with eyelet for  
 string, and drainage tube; and  
 at 12. noon, aspirated at original  
 puncture, but only obtained one ounce  
 of sero-pus. I withdrew the aspir-  
 ator needle, and passed in long  
 probe with string attached, and  
 made counter opening by cutting  
 down on probe in the 8<sup>th</sup> intercostal  
 space in vertical line from the angle  
 of ~~the~~ scapula, and drew through  
 the drainage tube. A large quant-  
 ity of creamy pus escaped from  
 posterior opening and sero-pus

from anterior opening.

Marked relief followed operation  
19. Has had some good sleeps.

Wheezing disappeared from right  
side Prescribed— Iuni Sulph gr. 2.  
with Ac. Sulph Dil m 5, every 4 hours.

20. Improving. Chest tympanitic  
over upper and anterior parts of  
left side

21. A great discharge of pus yet.  
The tube, each day was drawn  
to-and-fro, and as much as possi-  
ble of it, thoroughly cleansed and  
washed. The spray with dilute  
watery solution of carbolic acid  
was applied to the side; and a  
layer of surgeons' fine tow was  
freshly sprayed, laid on the  
side, and retained with linen  
bander a foot in width, and  
fastened with safety pins

Diet Egg and milk, and a  
dessert spoonful of Brandy every 4 hours.

25. He is having pretty good  
nights. Temp. varies a little

(9)

from day to day, at present  $102^{\circ}$   
26. Temp.  $99.5^{\circ}$ . Much better.

Pulse below 120: good quality.  
Tongue looks better.

Had his bed made, and change  
of shirt and singlet; for conven-  
ience of dressing side, these <sup>are</sup> slit  
up the side to near insertion  
of the sleeves.

27. Temp.  $101.5^{\circ}$ . Pulse over 120, and  
rather weaker. Sleeps pretty well  
no pain except from tender promin-  
ences with lying on his back.

Percussion note clear, except at  
base posteriorly where it is dull  
Measurement of chest on level with  
bottom of sternum +

Left side  $15\frac{1}{2}$  in. Right side  $16\frac{3}{4}$ .

28. Temp.  $102^{\circ}$  Pulse 130.

A little hectic flush on cheeks.  
Had rather a restless night, been  
laid most on right side

Continuing the Quinine medicine

29. Temp.  $100.4^{\circ}$  Pulse 120.

Has been laid on his left side

On change of posture there had been a great discharge of pus. Has had the best night, having 3 hours' sleep.

Tongue moist and cleaning, and has ate a little more.

Had his bed made to-day.

20. Temp:  $100^{\circ}$  Pulse 114. Improving.

May 3. Improving. But little discharge.

" 7. Prescribed Tr. Ferr. Pechler  $\times 10$   
3 times a day.

17. Temp:  $99^{\circ}$  Pulse 114.

Sleeps 2 or 3 hours at a time during the night, in the intervals takes nourishment. Feels better, and stronger, and is able to raise and move himself in bed.

Measurement inferior end of sternum.

Left side  $14\frac{1}{2}$  in. Right side  $16\frac{1}{4}$  in.

21. In dressing the chest the posterior end of drainage tube was drawn within the chest by accident.

Left the tube in chest through Ant. O.

22. Temp:  $101^{\circ}$  Pulse 130.

Syringed tepid diluted Condy's Fluid

through tube into chest; there was no escape through Post: O, neither had there been any discharge of pus 23. Under the influence of chloroform tried to restore tube through P. O, gentle means. with probe failed. Withdrew the tube altogether, it being decided to try without it. as the Temp. was reduced to 99.5°, and patient seemed pretty well otherwise

24. Temp: 103° Pulse 120. !  
 Feels a little the effects of chloroform. No discharge from chest, but after he had sat up an hour, noticed a slight watery track from Ant: O. Dressing of pieces of silk protective over sites of openings with layer of carbolyzed tow and bandage.

25. Temp 100.8° Pulse 120.  
 On dressing the side found there had been discharge from Ant: O, which had soaked through the tow and bandage to about the same extent as before removal.

of the tube.

26. Temp. + Pulse same.

The discharge of pus more copious  
The dressing to be changed twice a day.

29. Temp.  $100^{\circ}$ . Pulse 120.

Tow more saturated, though re-  
newed last night.

Sits in chair now, over an hour.

A little bilious and sick — sus-  
pended the medicine (Tr Ferri)

31. Temp.  $100.6^{\circ}$ . Pulse 120.

Shewn urine containing blood.  
Resumed the med. (Tr Ferri)

June 1. Temp.  $99.4^{\circ}$  Pulse 110.

More copious discharge of pus.

No sickness.

2. Temp.  $100.6^{\circ}$  Pulse 120.

Not so much pus.

Exam. Urine — trace of albumen.

5. Temp.  $99.9^{\circ}$  Pulse 116.

More copious discharge of pus,  
some from the Post. O. — the first  
time since the tube was withdrawn.  
He was carried into another room  
where he sat for an hour.

6. Temp: 99.1° - Pulse 108.

Had been great discharge of pus - most from the Post. O.

8. Temp: 100° Pulse 116.

Very little discharge from ant. O. pretty well from Post. O. and on coughing is forcibly ejected.

11. Temp 100.4° Pulse 120.

Urine free from albumen.

A little pain about Post. O. on movement.

Had his room ceiling lime washed and was laid in the back bedroom 7 hours.

13. Not so much pain on movement Post. O becoming depressed.

A little sick and relaxed in bowels

Prescribed - Bromine & Tr. Patecher.

17. Temp: 99° Pulse 110.

A large discharge of thin pus, and had been copious last night's change of dressing.

20. Temp. 102° Pulse 120.

Pretty well of discharge from both openings; a copious discharge from Post. O. on coughing with black.



Blood clot. He had complained of a feeling of weight in the region of Post. O. and there is now a fulness observed.

21. Temp: 98.7° Pulse 110.

Was a large quantity of discharge last night and this morning. The feeling around Post. O. disappeared. No discharge from Ant. O.

23. Temp: 99.5° Pulse 110.

Discharge from both openings on coughing, a great quantity of fetid pus welled from Post. O. Syringed into Post. O. with Condy's Fluid.

He walked with assistance into the back bedroom.

July 7. Temp: 99.4° Pulse 112

Moderate of discharge, some on coughing. Complaints of a little pulling of ribs on affected side. He is eating better, and is stronger in walking.

Measurement of Chest: —

- 1. Level of Inf. Sternum R. 16  $\frac{1}{8}$  in. L. 15  $\frac{5}{8}$  in
- 2. at nipple " 16  $\frac{3}{4}$  " " 15  $\frac{1}{2}$  in

14. Temp: 100° Pulse 120.

About 3 ounces of fetid pus was ejected from P.O. on coughing.

23. Temp: 99°. Pulse 104.

Expect pus from openings when coughing. Walked down stairs and out-of-doors.

27. Temp: 98.2° Pulse 108.

Measurement of Chest:—

at nipple Right 16 in Left 15 in.

31. Temp: 100° Pulse 108.

But for a drive one hour.

Aug. During this month he continued to improve gradually, having drives into the country when the weather was fine.

The amount of discharge varied, but was not in great quantity.

Sep. Went to Bridlington on the Yorkshire coast, and stayed a month, and was much benefitted. He turned his thoughts to his business and made some designs with his pencil. After his return he began to attend to his business a little, chiefly designing, and the

finest engraving work. He had not strength to do the deep "graving". He not infrequently had trouble with his stomach, being easily made sick. The whole of left side was contracted - the ribs flattened in front, and intercostal spaces obliterated, and the left shoulder was depressed.

1880. There is nothing of note to record in his condition; he went to the sea side again during the Summer returning benefited; but continued an invalid, yet able to conduct his business with the aid of a manager.

1881. During this year there was evidence of bronchial fistula having formed. There was suppression of discharge from the side, and coughing he expectorated pus little different from that which issued from side. This occurred every day for a few days then the side commenced running, and the expectoration of pus ceased, to recur only 2 or 3 times at intervals of a few weeks when there

was suppression of side running.

It finally ceased and did not recur 1882. At the commencement of this year his feet became swollen, and on examining his urine, was astonished to find such a large quantity of albumen — as much as half the quantity of urine in tube, and hyaline tube casts were found under microscope. I expected convulsions coming on, and a speedy termination of my interesting case. But he seemed to go on pretty much as usual, only he kept weak and was not able to walk more than 200 yards. It was noticed that the fingers ends were clubbed and nails curved. April 11. Attending him at this time and while using the carbolic spray for the side of chest. I introduced the fine nozzle into Ant. O. and injected, on withdrawing the nozzle there was forcible spouting out of dirty fetid fluid, as if an old layer had been removed from wall of

pleural cavity. After this there was only a little serous discharge which soon ceased, and the exuberant granulation <sup>at</sup> ~~the~~ aperture (ant.) dried up, leaving depressed cicatrix.

May 5. Called to him in haste; found him with his tongue tremendously swollen, and he thought he would have died from suffocation. This was caused by eating a steak which was "done on the coal" a favourite method with him. But the fire being low, some wood had been put on and the meat had been cooked over the burning wood. An emetic and cathartic white mixture relieved him.

The urine was examined frequently, albumen in considerable quantity always present.

July. Suffered from sickness and dyspepsia from which he obtained relief with Bismuth Carb. At the latter end of this month he was decidedly weaker, so that it

was necessary for him to keep his bed. The heart's action was weak, although there was no murmur; that, which had been noticed previous to the Thoracenteris had disappeared.

Aug: 1 + 2. He seemed better and had sketched design for swimming contest Prize cup sitting up in bed.

3. Seemed still better to day and in good spirits, but had weak small pulse; still advised the recumbent posture. But after my visit, feeling pretty well, he would get up and exerted himself in dressing which thoroughly exhausted him, and he lay on the bed in the utmost prostration, and pain over heart with shortness of breath and the anxious look one sees in Angina Pectoris. Administered Ether Sulph: on sugar, and applied plaister of Ext. Opii over region of heart.

4. He died at 4 P.M. — 26 hours after his sudden collapse when dressing

He was unconscious 12 hours, but had no convulsions.

Post mortem The left lung crepitant at apex only, other portion shrunk and carnified, the surface being closely and firmly adherent to ribs and pericardium. At angle of the ribs between the sites of the two apertures, was a cavity with smooth, glistening fibrous looking membrane; in capacity about the size of one's finger. Saw no appearance of bronchial fistula. The heart was pale and soft, but no imperfection of valves.

The kidneys were pale and large - quite the Amyloid appearance.

### Remarks.

I was much impressed with several points in connection with this case, the first, and the one of primary importance was as to the time of perforating the chest. It was too long delayed, the dyspnoea alone, would have war.

ported operation several days earlier, and from the continued great pressure of fluid in the pleural cavity the larger portion of the left lung was compressed and rendered useless and occasioned the flattening of chest and contraction of the ribs, and distortion of the position of the heart and stomach which caused much distress.

Another mistake was made, when in aspirating the chest the fluid was found to be pus, in not enlarging the opening, and inserting the drainage tube.

A third point was the removal of the drainage tube too soon. After the accident of drawing the posterior end within the chest, the tube ought to have been left in through the ant. O. which if not sufficient for drainage, another opening might have been made near the Post. O. — perhaps a space lower. At the time, I remember the patient was



rather tiresome in wishing to be rid of this accessory tube, and being my first experience, I thought the tube might be acting partly as a siphon keeping up the discharge of pus. It is probable the issue of pus from the chest might have been much curtailed in duration, had the tube remained longer, and possibly the Amyloid disease of Kidney, which was the ultimate cause of death been prevented.

(4.) It was very instructive to observe the influence of the retention of pus, in raising the temperature of the body, so that, conversely the elevation of temperature indicated pent up pus.

(5.) I was much impressed with the compatibility of life and its duration and absence of symptoms in connection with such an amount of albumen found in the urine months before he died. I presume the duration of life under this condition was

partly a question of supply of pabulum and this loss in albumen, the former nearly equalling the loss.

But as regards symptoms, taking the condition of the brain and nervous system, they seemed to be nil, for during this period he did some of his best designs and work, even up to two days before death

Wm. H. 37. Painter.

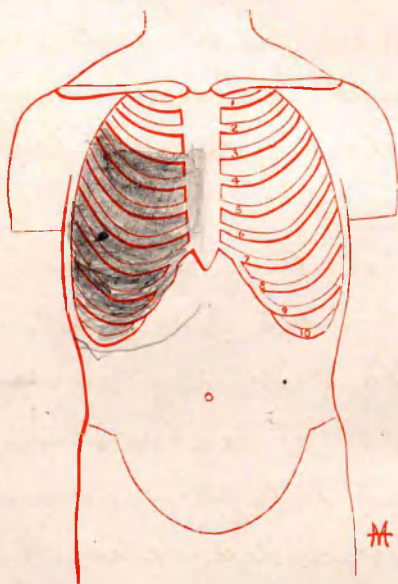
Fair hair, florid complexion, height about 5ft. 6in. of slight build. Brothers and sisters healthy.

1882. July 17. He had been ailing two days with "cold". He is now suffering with severe pain of right side of chest, and is very hot and feverish. Prescribed Saline mixture with *Vin. Antisepticum* and ordered linseed meal poultices to the side.

19. Continued the mixture; and ordered application of *Lini. Hyd. Co.* to the side.

21. Considerable dulness of right side of chest.

Wm. J. No 37.



23. Increase of dulness.

Prescribed - Pot. Iodid with Inf. Aurantii  
and to paint the side with W. Iodini

Aug. 2. Excessive sweatings, wheezing  
in upper part of the chest; and  
dyspnoea. Prescribed Inf. Cincha & Acid.

3. Performed Thoracentesis with  
Aspirator, in the 6<sup>th</sup> intercostal space  
2 in. external to line of nipple on the  
right side - flow of pus; after  
withdrawing about a pint, enlarged  
aperture with bistoury, and  
introduced 8 in. of a 12 in. drainage  
tube. A regular flow pumped out  
with the act of respiration, and  
was received into pus basin.

There was marked relief to his breath-  
ing, and wheezing became less.

4. Complains of a little stiffness and  
soreness of side; otherwise better.

Adopted as dressing the layer of tow  
sprayed with watery solution of Car-  
bolic acid, retained with broad  
bander once round the chest and  
secured with safety pins.

The dressing was changed twice a day and the tube withdrawn 3 or 4 in. to thoroughly clean and wash, and a clean binder.

9. Continues to improve

Prescribed Inf Anchar. & Ac. Int-Hellon.

There was nothing further, special in his case, he continued to improve and in November he was able to come to the surgery, a distance of half a mile.

An inch of tubing was cut off at intervals, as the space within the chest became more limited and did not take the tube, after partial withdrawal for cleaning.

1883. Mar: The discharge has become very small in quantity, and gradually changed to serum. The whole length of the tube was reduced to 5 in. and could be taken out altogether and re-introduced without difficulty, there being but little contraction of the ribs and not much flattening. The tube

was discarded altogether in April,  
and the aperture closed.

He resumed work and I have not  
had occasion to attend him since  
I see him occasionally and he  
seems quite well.

Wm. B. H. 18. Apprentice brass moulder

Tall, slight build and fair.

1882. Oct. 17. Came to surgery, complain-  
ed of pain in left side of chest.

a little below and external to nipple

Diagnosed pleurisy and congestion.

Prescribed - Saline with Vin. Ipecac.

18. Visited him, symptoms more severe.

Prescribed. Mist. Saline with Vin. Antem.

23. Chest symptoms abated, but devel-  
oped ulcerated throat and inflamed  
condition of mucous membrane.

Prescribed - Gargle. Soda Bibor

P. R. Chloratis

Glycerine.

and Misturae Tr. Jerni Mar & P. R. Chlor.

28. Throat better, but very parched.

Prescribed P. R. Chloratis 60grs. in

(27.)

a quart of barley water.

This was repeated several days,  
with milk ad libitum.

Nov. 3 He is now doing well.

Prescribed - Iunij Sulph.

Visited now every three days

17. Stomach deranged Prescribed -  
- Bismuth Carb. and Pulv. Plicis.

Dec. 8 Prescribed Ferri et Iunij Cit.

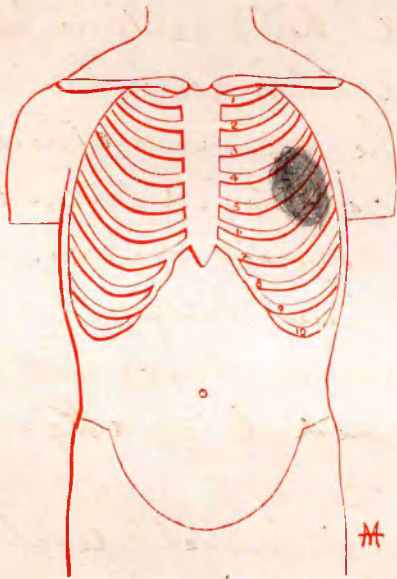
after this period was able to  
walk out of doors, but one day  
got a "chill" and had a return  
of the pleuritic pain in the same  
place, followed by increased dul-  
ness and some fulness

Prescribed Pot. Iodid. grs. for dose  
and Painted with Tr. Iodini

This condition became worse, and  
reduced to lying in bed; and the  
area of dulness had increased,  
though circumscribed, and limited  
to a space 3 in in diameter, the  
circumference involving the nipple  
He had profuse sweatings.

30 Performed Thoracocentesis with

W. B. B. B.





Aspirator in the 5<sup>th</sup> intercostal space 2 in. external to line of nipple, on the left side. Discharge of pus, so, enlarged the aperture and introduced drainage tube. After the first day, the same method of dressing with carbolyzed tow was adopted as in the former cases.

Prescribed Quin Sulph.

He was down stairs in a week and continued to make steady progress.

There was not much discharge of pus after the first 2 or 3 days, and gradually changed to serum, and the tube was cut short as the capacity of pleural cavity became less, and finally taken away in the following April, four months from first introduction. He resumed work a few weeks later, and has continued well, and says he never feels any inconvenience from side.

Mrs. C. No. 22 Fair complexion, a little below the middle height. She had borne one child which was now 12 months old and at the breast. Her condition was lowered from suckling and insufficient feeding.

1883. Sep. 28. Came under my care with symptoms of a bad cold — hot and feverish, cough, pain in the left side of chest. Prescribed:—

R Liq. Ammon. Acetatis (℞) }  
 Vin. Ipecacuan ʒj }  
 ℥ Ether Nitrosi ʒij }  
 Aquae acd ʒij }

℥ Two table spoonful every 4 hours

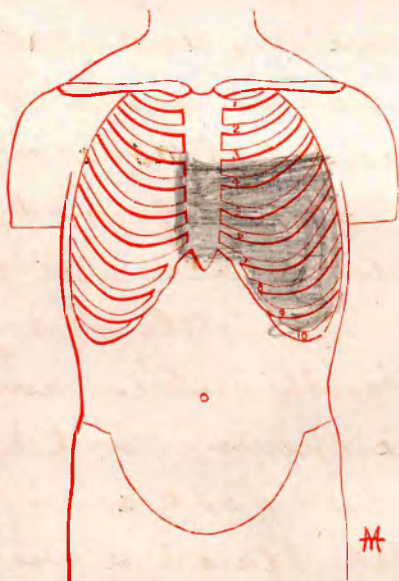
30. Pain most severe in lumbar region. Urine very high coloured. Prescribed—Pot. Bicarb. and Lithia Cit. and pil Morphia gr. ʒ.

Oct. 1. Repeated the medicine, and in addition an aperient.

3. A little dulness of side of chest, and wheezing in other parts.

Prescribed—Soda Bicarb. & Vin Ipecac.  
 ʒ Sweatings and a lowered con-

Mrs. C. K. 22.



dition of body. Temp: 102°. Pulse 120.

Prescribed - Quini Sulph & ac. Sulph.

11. Repeat. Mixture and Pal Oil  
for sleeplessness

13. To paint with Zn Iodine

18. Absolute dulness of side from  
the base to above the nipple  
having come on, and bulging of  
intercostal spaces, with some oedema,  
it was decided to aspirate.

Perforation was performed in the  
7<sup>th</sup> intercostal space, 2 in. external  
to nipple. The bottle of aspirator  
filled up with rather thin peas

Made free opening and introduced  
drainage tube; and as in former  
cases recorded, placed a pus basin  
by the side of patient.

19. Adopted the tow dressing retain-  
ed with broad bandage.

Prescribed Inf Cinchon & Sp. Am. Ar.

20. Called out before breakfast to  
see her. she had alarmed her  
husband by saying she was sure  
she had only an hour or two to

live, which she repeated to me.

The physical signs were no worse and she did not complain of any pain; it was evidently hysteria. Prescribed - Kther Sulph on Sugar.

She gradually improved, both chest and general condition.

Nov. During this month she was visited every 2 or 3 days, and in Dec. once a week.

The discharge diminished in quantity and changed to serum when the tube was taken away in the following May. There was a little trouble with Eczema of the breast around the aperture and she showed a puffiness of face and a small amount of albumen was found in the urine which however disappeared.

But I was attending her again in the following Nov: (1884) when I noticed a trace of albumen in the urine. I have not attended her since, but I have request

ed the husband to supply one with urine twice since for examination, the last time was at Midsummer, but no albumen was found.

I have seen her recently and she looks remarkably well, and expresses herself as being very well.

### Remarks.

The first case reported was undoubtedly the severest. From the commencement the attack on the system seemed to me like the fury of a storm attacking chest, kidneys & liver, finally spending its fury on the pleura. But those of Wm. F. Parrotto, and Mrs. C. were rather similar in the outset, though milder.

As stated in my remarks after the first case, I was much impressed with necessity of not delaying thoracocentesis, in that, it was 6 weeks from commencement of illness, in the 2<sup>nd</sup> (Wm. F.) it was 17 days, and in Mrs. C. 20 days.

But it is not altogether a question of length of time, but also of the symptoms and the evidence of the nature of the fluid — a serous exudation will not have the ill effects that a purulent one, in compressing the lung; and of course if serous it may become absorbed. The symptoms that I consider point to a purulent fluid are hectic sweatings and relaxed bowels, elevated temperature ( $102^{\circ}$ ) after acute symptoms have passed. And the signs — the density of dulness, with bulging of intercostal spaces and oedema of parietes of chest. I consider the oedema an important sign in favour of the fluid being pus rather than serum. We might have dulness with oedema from malignant disease of lung or pleura. but then the history of the case would guide one.

I have not performed Thoracentesis when the fluid has been serum.

but I was asked to see a case, with a neighboring practitioner, of pleurisy with effusion of right side, in a man, of the age of 30 years. The dulness extended as high as the third rib, with dyspnoea. He was seen in the morning in this state, and it was arranged we should aspirate in the evening, and we met for the purpose, but the dyspnoea seemed less and on percussing the chest the dulness did not extend as high by a finger's breadth, so it was decided to wait a little longer, but the dulness continued to decrease and he got quite well. And I took the Aspirator to a case of my own, a boy of 11 years, with considerable effusion of right side when I found he had had a turning point, did not operate and he went on all right. As regards single or double openings for one drainage tube, I am in favour of the single opening.