The reaction was not the same in all. In three of them the temperature rose to 40° or 41° C.; in nine it remained between 39° and 40°; in ninety-eight it kept between 38° and 39.5°; in eighteen it did not exceed 38.5°, and in five the reaction was insignificant, being scarcely if at all above the normal.

After the second injection, made at the end of forty-eight hours (one milligramme), in three-fourths of the patients, in whom a powerful reaction had followed the first injection, the temperature did not exceed 39°, while a certain number of those who had resisted the first injection, had chills and a temperature higher than that of the previous reaction, may this be due to the accumulation of the remedy, thus justifying Koch's recommendation to make the injections with intervals of several days and proceed tentatively before augmenting the dose.

All these patients presented phenomena of temporary congestion; aggravation of the cough, a notable augmentation of the expectoration after the first injections; later on, perhaps by reason of their having become accustomed to the injections (the true explanation has not yet been given), the reactional symptoms were almost *nil*. The expectoration diminished considerably and almost all expressed themselves as feeling better; this was the case with patients who had received six or seven injections.

There is another category of patients whose condition presents great interest. Dr. Mauritz-Schmidt, an eminent laryngologist of Frankfort — now at Falkenstein — showed me twenty-three subjects affected with laryngeal tuberculosis in different stages; in all the injection produced a recrudescence of the morbid symptoms. In several of these patients, who previously had been treated by curetting and lactic acid, and who had been considered as cured, the injection of one or two milligrammes showed that this was not the case, and caused a reawakening of the disease.

I saw three who were under treatment for tuberculous infiltration of the apices of the lungs, who had never experienced any laryngeal symptoms, and in whom one milligramme sufficed to cause hoarseness of the voice, thickening of the vocal cords, and revealed the presence of tubercle granulations existing in a latent state.

By continuing the treatment, an improvement is quite rapidly obtained. The tubercle granulations become detached at the end of seven or eight days after the third or fourth injection; in their place, we see at first a sort of grayish and glairy coating which gives place to a lively redness in which may be seen cropping out little granulations of a healthy nature; then cicatrization rapidly takes place. Among the subjects whom I had the opportunity of examining with Dr. Mauritz-Schmidt, there were some at various stages of this evolution-process, according to the chronicity or gravity of the affection and the number of injections received, and I had a good opportunity to watch the progress under the treatment.

Two other cases seem to me worthy of being put on record. The first is that of a young man, twenty-seven to twenty-eight years old, with a slight tuberculous ulceration on the right ary-epiglottidean fold. An injection of two milligrammes caused, besides swelling of the diseased region, a congestion of the mucous membrane of the right nostril which extended to the lachrymal sack and to the conjunctiva of the right eye.

The second patient was a Paris physician who for two months has been trying the open-air treatment and was getting along well, having all the appearances of health; was able to walk without getting out of breath, slept well and had a good appetite, and never had any laryngeal trouble. He remained insensible to the two first injections of one and two milligrammes; a third injection of five milligrammes having been made, this patient was taken five hours afterwards with all the symptoms of a violent reaction; chills, nausea, vomiting, dyspnoea, elevation of the temperature, then severe pain in the larynx and loss of voice.

The next day on laryngoscopic examination, we noticed the existence of a tuberculous process in the larynx, a granulation mortified, and fell off about the sixth day. When I saw the patient, the voice was still very husky, and although he had not received any new injection, he was still under the influence of the medicament; he was easily put out of breath, was pale, slept badly, had no appetite, and had lost five pounds of flesh within eight days.

If, as you see, these facts prove to a demonstration the great diagnostic value of Koch's remedy, they also show the uncertainty under which we still rest as to the therapeutic value of this remedy, and the necessity of the utmost prudence and caution in its use.

The doses at the commencement must be very small, and should be very gradually increased, with intervals of suspension to enable us to take account of the particular susceptibility of each patient. That we are justified in entertaining great expectations of this new method of treatment, I fully believe.

Original Articles.

A CASE OF SUPPURATING UNILOCULAR HYDATID CYST OF THE LIVER, WITH MULTIPLE HEPATIC ABSCESS.¹

BY FREDERICK C. SHATTUCK, M.D.,
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JUNE 23, 1890, I first saw Miss B., twenty-three years of age, through the kindness of her physician, Dr. Faunce, of Sandwich, she having come up from the Cape that morning. Her family history was unimportant except that her father died of Bright's disease. I understood that she had never been out of New England except on an occasional visit to New Brunswick; but subsequently learned, on further inquiry, that up to the age of four years she had sailed over much of the world on the ship of which her father was the captain. Her health through life had been good save for occasional attacks of "indigestion," characterized by epigastric oppression and flatulence, often accompanied and relieved by vomiting, generally traceable to carelessness in diet. Early in April last she had one of these attacks which differed in no way from previous ones except in being more severe and prolonged. She has had none since. This was soon followed by a serious head cold attended with much prostration, and this by a cough with white expectoration. Although she lost strength markedly she did not give up or take to her bed. May 24th she was seized by a

¹ Read before the Boston Society for Medical Improvement, November 10, 1890.

sudden and intense pain in the right side, apparently over the liver, and in the right shoulder. Any attempt to cough rendered the pain intolerable. The localization of the pain remained the same for some time, but it gradually became less severe and shifted about from one place to another, being sometimes felt on the left side. Since the above data she has lost flesh as well as strength, and has had diarrhoea off and on. Recently she has had several chills without periodicity.

June 20th, she had very severe pain across the lumbar region, especially on, but not confined to the right side. The catamenia have not appeared for eleven weeks. The urine for the past fortnight is reported as scanty and of a peculiar yellow color. No history of jaundice was obtained.

She was evidently fatigued by the journey to Boston. Pulse 120, small and regular; respiration somewhat quickened; temperature 103.5°; complexion sallow; no icterus. A careful physical examination, repeated the following morning, was negative except as follows: Moderate dullness with diminished vocal fremitus and vesicular respiration over the lower portions of the right chest, especially laterally and posteriorly. Flatness began at the fifth rib in the mammillary line and extended somewhat below the right costal border and into the epigastrium. Friction sounds were to be heard over the dull area near the anterior axillary line. Change of position by the patient caused no change in the percussion lines. The apex beat was in the fourth space, inside of the mammillary line; the abdomen was full and resonant, quite tender at the epigastrium and at a point above the navel and between it and the left costal cartilages; the edge of the liver could not be felt below the rib margin and I was unable to determine whether the dullness there was due to the liver or some other cause. The area of splenic dullness was increased, but the organ could not be felt. The appearance of the urine was suggestive of the presence of bile pigment, yielding a yellow foam when shaken. A specimen taken the next day for analysis was much less bilious looking, but gave the reaction for bile pigment. The specific gravity was 1.026; reaction acid; albumen a very slight trace; the sediment contained some blood, chiefly normal; a few leucocytes; and a few doubtful small hyaline and granular casts.

During the night of the 23d she had sudden and severe pain in the left back, relieved by morphia; the next day the fever was less, and the morning of the 25th the temperature was normal, the patient seeming to be doing well in other respects. In accordance with my request Dr. Faunce came to town that day and we examined the patient together. The surgical aspects of the case were carefully considered and it was deemed clear that there was no indication for any operation at present, at all events. I attributed the signs in the right chest to pleural thickening and believed that there was also some obscure affection of the liver, perhaps a gall-stone which was causing ulceration. The absence of jaundice showed that there could be no notable obstruction of the common or hepatic ducts, and no distention of the gall-bladder was made out though it was sought for. If a gall-stone was the source of the trouble it was, therefore, probably in a moderate sized duct. The next day there was a return of fever and a chill. The morning of the 27th her condition did not appear alarming and it seemed wiser to move her from the hotel to St. Margaret's. The move was accomplished that afternoon. That night she began to fail

rapidly. Dr. Porter saw her with me early the morning of the 28th; about noon she died, the failure in the last twelve hours having been extremely rapid.

The return of fever without obvious cause, and the occurrence of chills in conjunction with the other symptoms and the physical signs led one to modify my first diagnosis and to believe that hepatic abscess was present, impacted gall-stone being the most probable cause. The large amount of bile pigment which was apparently present in the first specimens of urine I saw, led me, in the absence of icterus, to query whether a fistulous tract could have been opened between the biliary and the renal passages.

The autopsy was made by Dr. E. M. Greene, three hours after death. For the sake of brevity negative results are omitted from Dr. Greene's report.

Lungs collapsed readily. The upper portion of the right pleural cavity partly obliterated by old fibrous adhesions. On section the lungs showed nothing abnormal.

Stomach and bowels considerably distended with gas but otherwise normal.

Liver at least twice the normal size, the increase being most marked in the right lobe. The upper surface of the right lobe was united by recent, soft, fibrinous adhesions to the diaphragm. The upper surface of the left lobe showed numerous irregular grayish patches size of thumb-nail and smaller. Section through these patches showed numerous superficial abscesses varying in size from a robin's egg to a pea. The purulent contents of these abscesses was frequently tinged with bile. Similar small abscesses were distributed throughout the left lobe. The right lobe was almost entirely transformed into a large, rounded cavity, the wall of which, over the upper half, consisted of the thickened peritoneal covering of the liver, while below the cavity a thin layer of liver-substance still remained. The inner surface of the cavity was lined with thickened fibrous tissue to which irregular layers of fibrin were adherent. The cavity contained more than a litre of thick, opaque, greenish, foul-smelling fluid and a large number of free cysts varying in size from a small hen's egg to a pea or smaller. The wall of these cysts was a thin transparent membrane and their contents consisted of clear, pale yellow, gelatinous fluid. From the bottom of the cavity there led a sinus about ten centimetres in length extending to the duodenum and sufficiently large to admit the forefinger. The lower end was closed. Into this sinus, which consisted apparently of the dilated hepatic and common ducts, the cystic duct, also dilated; entered. The gall-bladder was dilated to several times its normal size and projected considerably beyond the border of the liver. It contained about 200 centimetres of fluid similar to that in the larger cavity.

Spleen about twice the normal size, soft, and, on section, of a dark red color.

Diagnosis: Suppurating hydatid cyst of liver; multiple hepatic abscesses; acute circumscribed perihepatitis.

It will thus be seen that the clinical diagnosis of hepatic abscess was confirmed; but that its cause was quite different from that which had been supposed, while the enlargement of the liver and gall-bladder was greater than the physical signs had led me to believe. The signs at the base of the right chest, which I attributed to pleural thickening, were really due to the hepatic enlargement, and the friction sounds originated

below, not above the diaphragm — perihepatitis at the superior surface of the liver.

In cases of mistaken diagnosis it is profitable, at least to the attendant, to consider whether the mistake could have been avoided. In this case two questions are brought prominently forward.

(1) Should a more accurate diagnosis have been made?

As far as the presence of so much enlargement of the liver is concerned, I think this question must be answered in the affirmative. And yet, the enlargement being chiefly upward, there was a close simulation of the remains of a pleurisy. Flatness extended somewhat below the costal border, but one must be careful not to attribute this to the liver, unless the edge of the organ, or its surface, can be felt, provided that palpation is not rendered nugatory by tenderness. The enlargement of the gall-bladder at the autopsy was a surprise to me. I can only say that I sought for it, as one would naturally do in a case where, in the absence of icterus, symptoms suggestive of serious disturbance consecutive to gall-stones were present. In order that an enlarged gall-bladder may be palpable, the abdominal wall should be more or less lax — certainly not rigid — and notable tenderness should be absent.

While I am inclined to think that thus far I should, perhaps, have come to more accurate conclusions, I think there are satisfactory reasons why the underlying cause of the hepatic and cystic enlargement was not determined. Echinococcosis disease is rare in this country, and this is the first case which I have seen in life here or elsewhere. The liver, and the right lobe of that organ, is its most frequent seat; the characteristic signs are chronic hepatic enlargement, often local, for which no other obvious cause can be assigned, combined with fluctuation or elasticity and the hydatid thrill; the clinching evidence is furnished by the non-albuminous fluid — if the cyst has not suppurated — containing hooklets, withdrawn by puncture.

In this case the cyst was hidden beneath the ribs and costal cartilages, precluding the detection of fluctuation or thrill. I seriously entertained the question of puncture, but decided to wait until the patient was more suitably lodged, or the local indications seemed more clear. The case was only under observation four days and a half. In the "Index Medicus" I find only thirteen cases of liver hydatid reported in this country and Canada, 1880–1890; of these, nine were diagnosed during life, the other four being found post-mortem. In the nine the enlargement was either local or very great. The only other clinical observation of liver hydatid in Boston, of which I have cognizance, was a City Hospital patient with a very large suppurating cyst of the upper surface of the liver, extending far up into the thoracic cavity. Aspiration gave pus, and empyema was diagnosed. Dr. Bradford made a free incision, through which the daughter cysts escaped in large numbers. The patient survived only a few days.

(2) In this case, if a correct diagnosis had been made, could life have been saved?

This question can be unhesitatingly answered in the negative. The right lobe of the liver was nearly destroyed by the cyst, the left lobe was riddled with small abscesses; drainage of the former would not have affected the latter.

For some reason, which is not clear to me, hydatid

disease seems to be quite common in Australia, and the Australian *Medical Journal* for 1888 and 1889 contains a very interesting and complete discussion of the operative treatment by Dr. Thomas. It is impossible here to do justice to his paper. Suffice it to say that he advocates incision by Lindemann's method; believes many of the reported cures after simple aspiration to be illusory; considers suppurating cysts especially unsuited to aspiration; and states that unruptured cysts of the convexity of the liver present great difficulties in their successful treatment, inasmuch as thoracic incisions show a high rate of mortality.

FURTHER OBSERVATIONS ON PERMANENT TUBAGE OF THE OESOPHAGUS¹.

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SOME months ago I had the honor of reading before this Society a paper on Oesophageal Tubage.² Since that time I have had the opportunity of observing and treating some of the cases then reported, as well as others. I have noticed several interesting points in connection with their treatment, and I have devised some new instruments for the introduction of the tubes, which is my reason for presenting the following paper.

First, I wish to speak of the subsequent history of two of the patients (Cases III and IV) mentioned in the previous article. The first of these wore a tube almost constantly, never being more than two days without one, until his death early in October. There was no trouble from the presence of the tube, and the patient gradually became weaker, suffering some pain in the chest and having the usual troublesome cough during the last few weeks. One very interesting point in connection with this case as well as with some others, is, that on leaving the tube out for even a day the stricture closed and no food could be swallowed. On trying to introduce another tube the greatest difficulty was met with in passing even the guide into the stomach, and a smaller tube had to be used for some days. This patient came to my office about three weeks before his death, a distance of about thirty miles — unfortunately no autopsy could be obtained.

The other (Case IV) is still under treatment, and is now in very fair condition, as may be seen. (Patient shown and tube changed, the instruments further on described, being used.) This man, I have lately learned, was in one of our hospitals just before I saw him first, and as no instrument could be passed through the stricture, he was fed by the rectum, and a gastrostomy was proposed. As he objected to the performance of an operation, he eloped, and soon after appeared at my clinic as previously stated. That was in April, and recovering his strength after wearing the tube a short time, he has been able to work ever since, earning enough to support himself, something he surely could not have done after a gastrostomy.³

I have reported these cases at length as they show perfectly the slight inconvenience caused the patient

¹ Read before the Boston Society for Medical Improvement, November 10, 1890.

² See vol. cxliii, No. 17, of this Journal.

³ This patient has worked regularly up to a week ago when he gave up on account of weakness and entered the hospital, where proper and sufficient food seem to have given him a new lease of life, much to his and our surprise.