

toneum were coated with a fibrinopurulent scum,—a frank fibrinopurulent peritonitis. The appendix was negative, the gastro-intestinal tract out of the picture. There was no definite change in the mesenteric glands and no definite enlargement made out in the retroperitoneal glands.

There was no fluid in the pleural cavities; a few old adhesions on each side. The bronchial glands were slightly enlarged, and one of them showed fibrocalcereous transformation. There was a patch of obsolete tuberculosis in the apex of the right lung; the left negative. There was nothing else in the lungs.

The circulatory system was negative except that at the junction of the common iliac veins the vena cava showed frank thrombosis which extended down more particularly on the left and was the cause of the swelling of that extremity. There was a slight extension into the right iliac veins, and that accounted for the swelling on that side.

The liver weighed 1660 grams and was negative except for one small tumor about the size of the end of a finger. This tumor so far as we could make out was a hepatoma. We find in livers now and then tumors which arise from the liver substance, called hepatomata or adenomata—what you will. Some of them probably go on to malignancy or are malignant from the first, as you may see fit to think of malignant growths. This tumor we think had nothing whatever to do with the tumor of the pancreas.

The gall-bladder was negative. The common bile-duct was dilated up to 2 cm. in circumference. The hepatic and cystic ducts were negative. Why the dilatation I do not see exactly. The duct at its lower end was about the usual size.

In the situation of the pancreas was a mass 24 cm. long by 16 cm. wide by 8 cm. thick, which was simply a mass of new-growth-like tissue, boggy, with an opening in it, I presume where it was tapped. It was a flattened ovoid mass and of course was in close relation to the organs—the kidney, stomach, spleen, and pancreas—but although there was contiguity there was no continuity except with the pancreas. Microscopic examination showed this tumor to be a sarcoma.

The spleen showed a few old adhesions but was otherwise negative. The kidneys were negative except that the pelves contained a small amount of brownish sand-like material. Was that the injection?

DR. YOUNG: The injection is sodium bromide or sodium iodide. It ought not to leave that.

DR. RICHARDSON: The ureters were negative and the bladder negative except that it contained some brownish sand-like material.

DR. CABOT: Was anything left of the pancreas itself?

DR. RICHARDSON: In the region of the head

there was some pancreatic tissue still left. The duct of Wirsung came up into that all right, but disappeared along the surface of the tumor. The mucosa of the duct was negative.

DR. YOUNG: Would a cyst of that kind tend to contain any of the ferments of the pancreas, or would a growth like that destroy the pancreas as it progressed?

DR. RICHARDSON: I don't think there would be any ferments in the tumor tissue in this case. The growth destroyed the pancreas as it progressed.

DR. CABOT: It is extraordinary that there should be no sugar in the urine although there is only a little bit of the pancreas left. It shows how little will do to carry on the function.

DR. RICHARDSON: It is a very extraordinary tumor. It was difficult macroscopically to be sure as to its relation with the other organs, and where it was associated with what remains of the pancreas it was difficult macroscopically and microscopically to show just where the invasion began.

DR. CABOT: Was it more obviously cystic in life than it appears to be now?

DR. RICHARDSON: It was not so very obviously cystic at necropsy, but perhaps they had withdrawn what gave it something of that character.

DR. CABOT: Of course a liter of fluid must have come from somewhere. They drained it, I suppose.

A PHYSICIAN: Isn't it rather remarkable not to have any metastases?

DR. RICHARDSON: Yes. At first of course I thought that little tumor in the liver was one, but that had an entirely different structure. It was so different that you would at once see that it could not be a metastasis.

CASE 9452

AN American agent of forty entered through the Emergency Ward June 25, 1923, in so toxic a condition that he could give no history. The following history was obtained the next day from his wife.

F. H. Not given, except that his wife's only two pregnancies had ended in miscarriages.

P. H. Negative.

P. I. For four months the patient had looked worried and emaciated. June 19 he complained of pain in the right lower chest caused he said by an injury to the chest. He breathed rapidly, with grunting expirations, and looked very ill, though he did not complain of malaise. The following day he went to work, but was very soon forced to go home. He looked extremely ill, blue and cold, but would not go to bed. For

the four following days he remained at home, walking about the house, with rapid grunting respirations. He had pain in the right lower chest, apparently high fever,—though his temperature was not taken,—slight headache, severe thirst, and moderate malaise, but no cough or sputum. The night of June 23 he became so weak that he was forced to go to bed. A physician strapped the right chest. The temperature the next morning was 104°. That night, June 24, bilateral tender swellings were noticed on the forearms. During the next two days the temperature was over 103° on several observations, and the patient had been mentally confused but otherwise in apparently the same condition. During the past week he had taken much fluid.

P. E. A slender, fairly well developed man of about forty lying on his right side, breathing rapidly with shallow expirations and a respiratory grunt, the nostrils dilating with each breath. Skin hot and dripping perspiration. Lips and fingers cyanotic. Sclerae slightly injected. Tongue dry, heavy white coat. Mucoid secretion in oropharynx. Tonsillar fossae and pharynx diffusely reddened. Discrete cervical, axillary, inguinal, and single epitrochlear lymph nodes the size of a pea to the size of a bean. Chest expansion greater on the left. *Lung* signs as shown in the diagram. Apex impulse of the *heart* in the fifth space. Sounds of

Orders. June 25. Individual precautions. Soft solid diet. Force fluids. Chest swathe for pain in the right chest. Morphia gr. 1/10 s.c. p.r.n. every three hours for restlessness or pain. Soap-suds enema. Alcohol sponge every three hours if favorable reaction and temperature 103° or over. Digitalis leaves gr. iss 2 i.d. for three days, then t.i.d. June 26. Morphia gr. ¼ with hyoscin gr. 1/200 p.r.n. every three hours for restlessness if respiration is above 20. Digitalis one ampule.

The day after admission the patient had a period of excited delirium requiring morphia and hyoscin to quiet him. After it the pulse was rapid and very poor in quality. That day the patient died.

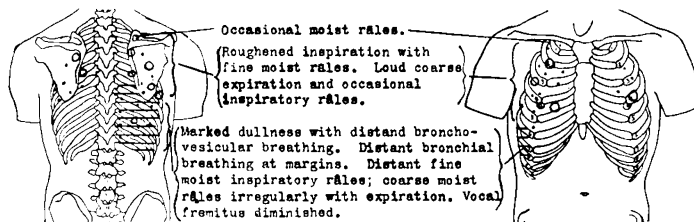
DISCUSSION

BY DR. RICHARD C. CABOT

NOTES ON THE HISTORY

We used to hear a great deal about "walking typhoid." Here is obviously a "walking pneumonia" in a man who would not give himself any sort of show.

I suppose the physical examination will tell us more about the swellings on the arms. I have no idea what they are.



poor quality. A soft systolic murmur at the apex. *Abdomen* distended and hypertympanic. Slight diffuse spasm and tenderness. *Genitals.* Questionable penile scar. *Extremities.* Wide diffuse areas of induration on the dorsum of the forearms, with tenderness and increased warmth. These swellings were divided into larger proximal areas and smaller more elevated and more reddened distal areas extending above the wrist joints. All of the soft tissues and even the ulnar edges of both arms were moderately tender. *Reflexes* not recorded.

T. 103°-104.8° by rectum. P. 130-149. R. 36-39. *Urine.* Amount not recorded. Sp. gr. 1.026. A slight trace of albumin. Sediment loaded with red blood corpuscles. *Urine culture.* Profuse growth of staphylococcus. *Blood.* Hgb. 80%. Leucocytes 5,200-6,800. Polynuclears 79%. Many very young forms. Red cells showed some anisocytosis and poikilocytosis.

One would naturally say that this is pneumonia, unless something more turns up in the physical examination.

NOTES ON THE PHYSICAL EXAMINATION

Vocal fremitus ought not to be diminished. Nevertheless from the lung signs this can perfectly well be a pneumonia, with very possibly some fluid in the chest.

I do not know what these areas on the forearms are. I do not remember having seen exactly that thing. We saw swellings like that in the legs above the knee during the influenza epidemic, and sometimes also in the rectus muscle. I suppose it is part of the same septic process that he has in his lung, but I do not remember having seen it in this position. The only thing other than a septic process that I have ever seen in this position is glanders. I do not believe it is

glands. He would have more "farcy-buds." We have no reason to suppose that he is in touch with horses or that he would have so much in his lungs and so little elsewhere if he had glands, a chronic disease. So I should rule it out.

The leucocytes are notably low. The blood condition is all due, presumably, to the process he has in his lungs and not to his forearms.

He was treated as one would treat any such septic fever, and died the day after admission.

DIFFERENTIAL DIAGNOSIS

I think he died of pneumonia with very possibly empyema and foci of sepsis in the forearm. These foci of sepsis make us wonder whether this is one of the not at all rare cases with acute endocarditis associated with pneumonia, though in the cases I have seen there have not been embolic symptoms. I have not seen emboli coming from a pneumonic endocarditis. So on the whole my impression is against acute endocarditis as a source of these lesions on the forearm.

Aside from his pneumonia I do not see any evidence of disease. I do not see any reason to suspect his kidneys or his heart or any other organ.

DR. YOUNG: Do you think it is a pneumococcus process?

DR. CABOT: The finding of the staphylococcus in the urine and the lesions on the forearm would incline us to think of something else.

DR. YOUNG: Don't you think a "profuse growth" is important?

DR. CABOT: I don't know much about urinary cultures; I have not seen enough of them.

DR. YOUNG: I don't think there is enough known about them. But it is definitely known that in staphylococcus infections apparently the same organism can be obtained from the urine as from the lesions.

DR. CABOT: In a case like this we ought to consider the possibility of tuberculosis. The signs are almost wholly unilateral; they are not at the apices; and he died too soon unless it is of the miliary type. I think Dr. Young's suggestion is a good one.

A PHYSICIAN: Wouldn't you think it would conform more to the type of influenza pneumonia?

DR. CABOT: No, I should not. I don't think we have a very clean cut picture of influenza pneumonia, but the thing that has struck me in it is the amount of blood everywhere, nose bleed, bloody sputum, blood in the trachea and in the lungs post mortem. Nothing is said about that here.

A PHYSICIAN: Is his low white count on account of his low resistance?

DR. CABOT: Yes. We always hate to see a low white count in pneumonia. It is a bad prog-

nosis, but does not in any way exclude pneumonia.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Lobar pneumonia.

DR. RICHARD C. CABOT'S DIAGNOSIS

Pneumonia.

Empyema?

Cellulitis of forearms.

ANATOMICAL DIAGNOSIS

1. *Primary Fatal Lesion*

Staphylococcus septicemia.

2. *Secondary or Terminal Lesions*

Fibrinopurulent pleuritis, double.

Acute pericarditis.

Abscesses of the lungs.

Cellulitis of the forearms.

Acute cystitis.

DR. RICHARDSON: The forearm showed the condition that Dr. Cabot has spoken about,—cellulitis.

There was no fluid in the peritoneal cavity. The appendix was negative. The esophagus and gastro-intestinal tract showed nothing for record. The intestines are mentioned as showing some areas of reddening. In these sepsis cases not infrequently we find hemorrhagic areas in the mucosa of the stomach and intestine, and they may go on from simple areas of hemorrhage to areas of necrosis. In one case of staphylococcus infection which I remember very well there were small abscesses in the mucosa of the intestine the same as in the lungs or anywhere else. They may perforate before death or about the time of death.

Thirty c.c. of thin purulent fluid was found in the right, and fifteen c.c. in the left pleural cavity,—that is, a purulent pleuritis. The lungs showed no definite pneumonia, that is lobar pneumonia; but showed scattered through them smaller and larger areas that were frank enough abscesses.

In the pericardium we found purulent fluid material, with reddening and fibrinous roughening of the surfaces of the pericardium,—acute pericarditis. The heart weighed 280 grams, the valves and cavities frankly negative. The aorta and great branches, the pulmonary artery, portal veins and radicles out of the picture. There was nothing in the liver or gall-bladder; the bile-ducts and pancreas were negative and the duct of Wirsung free. We usually find enlarged soft spleens in sepsis. In this case the spleen was small and a little soft.

The kidneys weighed 300 grams and were frankly negative macroscopically and microscopically. In the bladder just above the trigonum there was a definite patch of hemorrhagic cystitis, and I presume that was the source of the blood in the urine. The prostate, seminal vesicles and testes were negative.

DR. CABOT: Were there any abscesses in the kidneys?

DR. RICHARDSON: No. We obtained a profuse growth of the staphylococcus from the heart blood.

DR. CABOT: Would you hazard a guess as to where the process entered or started?

DR. RICHARDSON: I always do, and I think you take the other one. It is quite difficult in this case to know whether to think of his arms first, or whether to think, as some do, that these processes come by the genitourinary tract or by other roads. He has a cystitis. I think on the whole his arms came first.

DR. CABOT: It is not a clear case for any one place. The lungs certainly were secondary?

DR. RICHARDSON: One would think so. The whole thing inside looks secondary.

DR. CABOT: It is interesting that apparently he did not say a word about his arms. He was complaining about his chest.

DR. RICHARDSON: Against the arms as a starting point, of course, is the fact that the cellulitis seemed to be deeply seated.

DR. YOUNG: I do not believe it started in the bladder. I think the absorption from the urinary bladder is very slight.

DR. CABOT: In general this organism starts in the skin or subcutaneous tissue as often as anywhere?

DR. RICHARDSON: Yes.

A PHYSICIAN: The symptoms in his arms are not referred to until five days after his pulmonary symptoms.

DR. CABOT: Yes, that sticks in my crop a good deal.

Therapeutically we do not know anything to do for these things. People recover from slighter degrees of staphylococcus sepsis, boils, carbuncles, which represent this infection in slighter form. The point that chiefly interests me is whether we ought to have followed up our urine cultures harder, so that we ought to have said at once, this is staphylococcus sepsis.

DR. YOUNG: I think there is enough in it so that we should follow it up. Apparently the staphylococcus does come through in a fair proportion of cases at least, if not in a large proportion. Whether that would be of value I don't know.

A PHYSICIAN: Can you tell me how often cases of staphylococcus septicemia recover?

DR. CABOT: No. I was not speaking just now of staphylococcus septicemias but of staphylococcus infections of the body. I should suppose that almost all carbuncles are staphylococcus. Of

course we know that many of them recover. My guess is that there are a good many staphylococcus processes in the kidney with recovery.

DR. YOUNG: Yes, I know there are. The so-called coccus kidney, which is a hematogenous infection, is seen not infrequently, and the great majority get well.

DR. CABOT: And often without operation. Whether we should call that septicemia or not I don't know. In the carbuncle, for instance, I think it is in the blood before it is in the neck. So I suppose with the kidney, it is always started in the blood. But if a septicemia is meant which is proved during life by a culture, I never knew a case that lived.

A HOUSE OFFICER: We had a case a few weeks ago in the wards where we recovered the staphylococcus from the blood. It started with an abscess in his neck; he developed a pneumonia and an abscess in his foot, and we recovered the staphylococcus from his blood about four times.

DR. CABOT: That was quite like this, a lung infection and then a skin infection. Was this a yellow staphylococcus?

DR. RICHARDSON: Yes. We presume it is yellow unless it is otherwise stated.

DR. CABOT: I suppose it often depends on how long the culture is kept whether it is called yellow or not.

CASE 9453

AN American of seventy-three, formerly a deep-sea fisherman, was sent from the Out-Patient Department August 22, 1923, complaining of pain in the epigastrium of eight years' duration.

F. H. His mother died of tuberculosis, one brother of "stone cutters' consumption." Another brother was now ill, possibly with the same disease.

Habits. Good.

P. H. He was strong, healthy and active until the beginning of his gastric trouble eight years ago. Since the onset of this illness he had had dyspnea on exertion, and an occasional attack of sharp precordial pain localized in an area about the size of the end of a lead pencil just below the left nipple. Five years ago he had an attack of urgency and frequency, D every half hour. Recently the stream had

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lessened in caliber and force.

P. I. For eight years he had had attacks similar to the present one, occurring every three or four months and lasting five or six weeks. Be-