

chest bone behind and laterally, and another on the opposite pelvis above the trochanter, the two connected by peculiarly curved steels, one anterior, one posterior. They do not rest on the body to make pressure. The anterior steel is disconnected from the hip pad by a self-retaining catch. The pelvic pad has an arm jointed at the hip which extends down to the thigh band. This arm stands out from the thigh when the thigh band is loose. By the shape of the body steels the leverage is transferred so as to throw the chest forward as well as laterally.

This brace will not take the place of complicated braces and jackets. It will be found efficient for certain postural cases when it is undesirable to weaken the muscles by cumbersome and more extensive apparatus. It does not show through the clothing, remains in place and is adapted for active cases with postural lateral deformities.

Clinical Department.

REPORT OF A CASE OF DISSECTING ANEURISM WITH RUPTURE OF THE AORTA; AUTOPSY.

BY W. E. PAUL, M.D.,
AND
W. A. BROOKS, M.D., BOSTON.

THE textbooks fail to give a good description of the clinical features of dissecting aneurism. Our record of one case may, we hope, be of value if an attempt is made sometime to depict the symptomatology which must necessarily be based on a number of complete histories and post-mortems. Up to the present time both Allbutt's statement that "it is known only after death" and Stimpson's that "it cannot be recognized with certainty during life," seem to hold good.

The patient was a hard-working merchant, fifty-seven years old, of a rugged type, who up to five years ago drank alcohol freely and continuously. He was an inveterate cigarette smoker and used much coffee. Twenty years ago he contracted specific disease. Ten years ago he had pneumonia. Three years ago he had a severe appendicitis and delayed consent to operation till it was most urgent. A fetid, gangrenous, sloughing remnant of appendix in a purulent cavity, walled off by adherent intestines, was found by Dr. Brooks and successfully removed. A large hernia has occupied the site of operation on the right side of the abdomen since, but has been controlled fairly well by a belt.

For a few weeks previous to his fatal attack the patient had complained of being below par, and had a frontal sinus infection treated by Dr. F. C. Cobb. His digestion was not so good as usual, and he thought he was drinking too much coffee.

The day on which the final sickness began he was feeling very well and ate a hearty lunch of oyster crabs, apricot pie and coffee. He then took part in a game of cards, and at the end of an hour's play got up to take another chair, when he was suddenly seized with severe pain across the lumbar region, not more marked on one side than the other, and extending upwards and outwards toward the scapulae, but not going toward the abdomen. He described it as a "red pain." It was so severe that he could not go on with his game and was taken to a bedroom and attended by Dr. Buck. Dr. Paul saw him about fifteen minutes after the onset;

the patient was then sitting in a chair, moving to and fro, and complaining of nausea. The pain continued and was dull, steady and boring in character. There was a sense of anxiety in the patient's look and manner. It was considered probable that acute indigestion accounted for the condition of the patient, and efforts to relieve the stomach (drinking warm water) were rewarded with fairly free vomiting of sour-smelling stomach contents. The pain, though somewhat less, remained in the back, and the patient could not lie down, as that position was uncomfortable. Later there were two or three attacks of vomiting, with considerable vomitus. A glass of Hunyadi water was taken, but was vomited in a short time. As the pain continued severe in the back, about three quarters of an hour after he was first seen a quarter grain of morphia was given subcutaneously. The patient then felt as though a movement of the bowels was imminent, but two or three enemata gave little result and no gas was passed. A half hour after the first dose of morphia, a second like dose was given and in the course of ten minutes the pain was much relieved. About two hours after the onset he was able to go down stairs and drive home in a cab.

During all this time he was pale and his pulse did not change.

At his home he vomited once or twice and expressed himself as feeling more comfortable than at any time since the onset of the attack. He vomited occasionally, and two or three times considerable amounts were regurgitated.

Seven hours after the onset the pain, never entirely absent, had moved up higher in his back, between the shoulder blades, and was more a discomfort and burning feeling than a decided pain. A hot water bag made it bearable.

Two hours later and nine hours after the first pain there was an access of most severe, dull, steady, constant pain in the lumbar region at the site of the first pain. He groaned with every breath and sat up in a chair by preference. A $\frac{1}{2}$ gr. hypodermic of morphia was given as soon as possible, and relief was most marked in the course of ten minutes. It was found then that no gas had been passed, that vomiting had continued at intervals, that the pulse was 100, that there was evidence of shock with marked pallor; and it seemed that instead of a simple case of indigestion, some more serious trouble existed which was obstructing the bowel.

Dr. Brooks was summoned in consultation, and agreed that the case was a serious one and that the trouble might be due to the bowel being caught under some band. Physical examination of the abdomen revealed absolutely nothing abnormal, however, and the limitation of the pain to the back was confusing to our diagnosis in considerable measure. Laparotomy was most seriously considered, but was deemed unwise by Dr. Brooks.

Five hours later a saline cathartic was given, but was promptly vomited.

Eighteen hours after the first pain the pulse was 120 to 140 after going to stool; there was decided pallor and some pain persisted in the back. For the first time there was a slight pain in the abdomen over the descending colon. It was slightly tender, but did not cause the patient to shrink on palpation. Two high enemata brought away a moderate amount of fecal matter, but there was little gas escaping at the same time. The temperature was normal continuously from the onset of the pain. During the morning (some twenty hours after the initial pain) hiccuph lasting a few moments at a time had recurred. Also there had been some spells of dyspnea lasting for a half dozen

breaths at a time. The patient was carried to the Bay State Hospital and seemed refreshed by the trip. Soon after his arrival high enemata were resorted to again, and considerable mucus, some of it stained slightly with blood, was the chief result.

There was now hardly any pain, but the patient said he by no means felt right. That night he slept fairly and was comparatively comfortable the next day. Small quantities of milk and lime water were retained. The day after entering the hospital a high enema was very successful in bringing away considerable fecal material and gas. It was now assumed that at least the bowel's patency was established. A considerable degree of pallor continued, however; the pulse did not fall below 104 and was unsteady at times, though fairly strong. Hiccough and spells of shortened breath recurred. The tenderness on the left side of the abdomen was a little less marked.

Dr. Franz Pfaff saw the patient at the end of the second day and was of the opinion that an internal hernia or intussusception had occurred but had been greatly relieved. The shock he believed to be an indication that the sympathetic ganglia had been pressed on by the affected intestine.

The condition was little changed for the next two days except that the third night in the hospital there was more shortness of breath coming and going in such a way as to resemble the Cheyne-Stokes type. The temperature ranged from normal to 100°. The urine was normal and fairly abundant, in quantity reaching 50 oz. in twenty-four hours.

The fourth night in the hospital there was an uneasy feeling in the back, as though lame. He could not get into a comfortable position; rubbing relieved for a short time only.

The next day hiccough was rather constant, though he ate more and had a satisfactory movement of the bowels and was rather brighter. He was weak and said he was not right. The uneasy grumble continued in the lumbar region, not more on one side than on the other at any time, and was a source of a good deal of uneasiness and restlessness. Later a menthol liniment relieved him and he slept well for the night.

On the morning of the fifth day of his illness he expressed himself as feeling better than at any time since the onset. He ate a fair breakfast and was so comfortable that after the meal he took a short nap. He answered the inquiries of the nurse cheerily. He sat on the side of his bed in the act of passing his water when he suddenly gave a piercing scream, audible all over the hospital, and grasped his right loin with his right hand, exclaiming in agony; he fell forward, but was caught by the nurse, and after one or two gasps, life was extinct.

It was, of course, now realized that a large internal hemorrhage had been the cause of the final catastrophe. Fortunately, permission for an autopsy was obtained, and Dr. Oscar Richardson's record of the aneurismal findings follows:

The intestines were not obstructed. The peritoneal cavity contains a moderate amount of free fluid blood and the retro-peritoneal tissues are swollen, black red in color, and infiltrated with a considerable amount of blood-like material. About the region of the mesentery the swollen, blood-infiltrated retro-peritoneal tissues bulge forward under the transverse colon. The colon on section is not remarkable. The other abdominal viscera show nothing worthy of note.

On opening the thoracic cavity the right pleural cavity is found to contain an enormous quantity of fluid blood and blood clot, and at a point about where the aorta passes through the diaphragm there is a ragged opening in the wall of the aorta through which

the blood has poured into the right pleural cavity and infiltrated into the retro-peritoneal tissues and to a moderate extent into the peritoneal cavity.

On section, the aorta shows, extending along its wall as far down at least as the celiac axis, a black red coat, 2 to 3 cm. thick, which consists of a thick layer of blood-clot-like material apparently resting between the muscular wall of the aorta on the inside and a layer of the adventitia on the outside, limited by the pleura in the thoracic cavity. On section, the intima of the aorta all along its course presents innumerable smaller and larger roughened plaques, fibro-calcareous in instances, and the central portions of many of which show ragged openings which extend into the layer of blood clot and fibrin just beneath the dissected layer of adventitia. At a point in the wall of the aorta just as it passes through the diaphragm there is a ragged opening in the wall margined by arteriosclerotic changed tissue and a ragged interruption in the continuity of the surrounding layer of adventitia, fibrin, and blood clot.

Anatomical diagnosis. — Arteriosclerosis of the aorta; dissecting aneurism of the aorta, with rupture and hemorrhage into the right pleural cavity, the retro-peritoneal tissues, and the peritoneal cavity.

Reviewing the clinical features of the case the pain stands out most prominently of all the symptoms. There were four periods of pain: at the onset, nine hours later, a grumbling discomfort in the back for forty-eight hours before death, and the final death pang. Also there was some pain and tenderness over the descending colon. The pain probably coincided with extension of dissection. Its character and location seem of great significance in differentiating pain originating from dissecting aneurism. The pain was limited to the back and was not more noticeable on one side though it extended across the back and upwards and outwards toward the scapulae. It was severe, dull, deep aching and boring in character; most distressing and giving rise to feelings of anxiety. The slight pain over the descending colon may very well have been due to extension of blood extravasating in the peritoneum. The final pain immediately preceding death cannot be defined.

Next in importance was the condition of shock which did not disappear at any time, though it varied in intensity. He was pale and his pulse was continuously high after the second attack of pain, except in the last twenty-four hours, when it got as low as 88.

Third, the vomiting was a prominent symptom in the first twenty-four hours of the illness. In the absence of any complaint of indigestion before the onset of the pain it seems fair to assume that the vomiting was due to the aneurismal hemorrhage rather than to coincident irritation by the stomach contents. The vomiting was probably reflex and symptomatic. Of negative value as symptoms was the practical absence of abdominal pain, distension, or anything abnormal on palpation.

It ran its course in five days.

THERE has been an enormous increase in the number of rats in San Francisco, and a bonus is being offered for their destruction. — *N. Y. Med. Jour.*