TRANSACTIONS
OF THE
PHILADELPHIA ACADEMY OF SURGERY

Stated Meeting, held April 3, 1916

The President, DR. CHARLES H. FRAZIER, in the Chair

SUBACROMIAL BURSITIS, SHOWING RECOVERY FROM OPERATION

DR. JAMES K. YOUNG exhibited a man, aged thirty-five years, referred to him by Dr. Thomas A. Erck, on account of a painful condition of the shoulder-joint. Eight months before the man had a fall from a height of 26 feet, and caught on something with his right hand, injuring the shoulder; since that time there has been noted severe pain in the shoulder-joint, especially beneath the deltoid muscle.

Examination showed considerable disability of the shoulder-joint, with inability to lift the arm shoulder high. The X-ray showed a shadow due apparently to a localized infiltration of the soft parts just below the tip of the acromion process on the right side. A diagnosis of subacromion bursitis was made, and the Codman operation was performed by him, following the technic accurately. An incision was made on point of shoulder about 2½ inches in length, extending down to but not beyond the centre of the deltoid, at which point the circumflex nerve winds around the neck of the humerus. The fibres of the deltoid were separated, the bursa was exposed and found to be adherent to the muscle, these bands were separated, the sac was opened and a white fluid evacuated; there was no calcification of the sac and no loose fragments of bone; there was one firm band of adhesion in the upper part of the sac which was divided. No deep sutures were used and the wound was closed with silk gut sutures. The arm was elevated to a right angle and suspended in bed for forty-eight hours; primary union occurred; four weeks later the arm was manipulated and massaged, and perfect recovery resulted.

The interesting features of this case were: (1) Prolonged and ineffectual treatment which he had for eight months before applying for operation; (2) the possibility of making a diagnosis from the X-ray in a bursa in which there was no calcification; (3) the simple character of and prompt recovery from the operation.

There are many such cases in every large orthopædic clinic, some are

simple without injury to the bone, and in some which he operated upon recently, there were fragments of bone lying beneath the bursa, which required attention after the bursa had been opened. It has been said that manipulation is more important in these patients than operation, but in this particular individual the operation seems to have been more important than the manipulation itself. It has also been stated that these patients recover within a given space of time without any operation, but in this particular individual there was no improvement whatever eight months after the accident and he was totally incapacitated for work. It has been a question whether time is shortened by operation, and it appears in this patient that the time was distinctly shortened by the operation.

DR. GWILYM G. DAVIS said that Dr. Young's case of subacromial bursitis brought up the question of the advisability of operating in cases of disability in which restriction of motion of the shoulder-joint is present. He thought the disability to be due to the normal motion being restricted by effusion or contraction or by bands; and, if by some means the causes which limit the motion are eliminated, there will ensue a return of function. That being so, if these cases were treated by some method of persistent stretching, by some form of exercise, by free movement of the joint under anæsthetization; or, if the patients were put in bed and weight traction made to increase abduction, or by any means to obtain a normal range of motion, the symptoms will be eliminated. In these cases of disability the question arises as to whether or not the improvement is due to the operation itself. He was inclined to believe that the improvement is not due to the cutting part of the operation, but to the improved position in which the limb is placed after the operation is completed; in other words, to the freer motion and the placing of the arm during the process of healing in the most extreme position. If this be true, then the same result ought to be brought about by persistent conservative methods which will stretch the adhesions; or by radical movements under an anæsthetic, which will rupture or stretch adhesions and increase the range of motion, this to be followed by exercise of the parts.

DR. A. P. C. ASHHURST said that he saw a great many stiff and painful shoulders, but it is impossible to secure hospital accommodations enough to operate on even a small proportion of them. He never saw but one patient that he thought he could certainly diagnose as a subacromial bursitis without other lesion, yet at operation on this patient, no bursa at all was present, but under the thinned deltoid he did find inside the capsule two osteophytes, which he removed; and the patient's

disability was completely relieved (ANNALS OF SURGERY, 1916, I, 174). If one could treat these patients with periarthritis of the shoulder in the manner Dr. Davis suggests, without operation but by persistent abduction in a plaster case, retained for from four to eight weeks, one might be able to cure them; but it is difficult to induce an adult patient to have his arm fixed so long in this position. Operative treatment, therefore, is not entirely to be condemned if it will get a patient well in a shorter time. He asked Dr. Young how long he kept the patient in bed, whether the time of treatment was lengthened or shortened by operation, and whether, if he had given an anæsthetic and instituted abduction and done no operation, he would not have kept the patient in bed the same length of time.

DR. DAMON B. PFEIFFER had been trying for some time to get some information regarding stiff and painful shoulders. He had been impressed with the uncertainty in the etiology of stiff and painful shoulders and with the lack of a definite underlying pathology. Dr. Ashhurst's case of a spur of bone which seemed to be the cause of disability reminded him of a case on which he operated about six months ago: a man fell into a hole, receiving an injury to the shoulder-joint; following the injury he had a very rigid shoulder, the arm could not be abducted to a right angle, and was almost without power. The man was under observation for two months, the X-ray showing absolutely nothing, but the patient's condition nevertheless demanded relief. There was a peculiar grating in the shoulder on motion which he attributed to subacromial bursitis. Making the usual incision, he found a small triangular gap in the capsule of the joint, evidently due to a rupture at the time of the accident. At the base of the triangle there was a rough protruding ridge of bone from which the capsule had been torn, and this gave the grating sensation by infringing upon the acromion. He attempted to close the defect, first chiselling away the bone and making it smooth, but was unable to do this because the tissue was detracted and dense. He then mobilized the capsule by undermining it and shifted it across in order to close the defect. A plaster dressing was applied and the arm kept in hyperabduction for four weeks. The arm was much improved when he left the hospital, but he had not been seen since. These cases emphasize the uncertainty of the underlying pathology prior to operation and the fact that here, as in the abdomen, the exploratory incision is justified in certain cases.

DR. T. TURNER THOMAS had seen the same condition described by Dr. Pfeiffer of a perforation in the joint capsule and overlying rotator tendons. It would seem to be due to the tearing away of the capsule

and the overlying tendons from the greater tuberosity to which they are attached. He thought the tearing away of the capsule with the fragments of bone gives the calcification that we hear so much about in connection with subacromial bursitis.

TUBERCULOUS AND LUETIC INFECTION OF KNEE-JOINT

DR. JAMES K. YOUNG also reported a case of a youth fourteen years old suffering from mixed infection of the knee-joint—tuberculous and luetic. Three months before he first saw him he fell, striking his right knee, and acute inflammation and swelling occurred, and two weeks later he was taken to a large general hospital where he remained three weeks. He left the hospital because amputation was advised.

Examination at this time showed the right knee greatly enlarged, indurated and flexed to 10 degrees; the joint could be flexed but could not be extended. The family history was negative. The X-ray showed a large amount of periosteal inflammation with some enlargement of the bone; the disease did not extend into the cartilage of the knee-joint. The tuberculin test was positive and the Wassermann test was slightly positive. The limb was straightened by dividing the hamstring tendons and forcible correction under an anæsthetic. Subsequent to this operation an abscess formed and a sequestrum was removed. Later a circular seat brace was used to take the weight off the joint, and the limb was kept in an extended position. In addition to the mixed treatment he was given local applications of the X-ray. The result has been most gratifying, there is a complete restoration of all the movements of the joint and entire freedom from pain. The interesting feature of this case was the diagnosis which was confirmed by the Röntgen examination. The pathological condition present has to be distinguished from sarcoma. There was marked periosteal thickening in the negative taken four months after the onset of the disease, the striated appearance being characteristic of specific disease.

Specific osteomyelitis shows more sclerosis and less infiltrating destruction of the bone than occurs in acute pyogenic osteomyelitis.

In sarcoma the ossification progresses in an irregular and ragged way, the effect in the X-ray being not uniform but spotted quite different from the regular bony layers observed in chronic specific periosteitis. The exudate has a smoky appearance.

TOXIC GOITRE IN GIRL TEN YEARS OLD

DR. A. W. SAWYER, by invitation, described the case of a girl, ten years of age, who was admitted to Dr. Frazier's service, University

Hospital, March 8, 1916, with a complaint of goitre and nervousness. She is a school-girl, ordinarily industrious and does well in her studies. She sleeps well, but gets easily tired and excited. She has had measles, mumps, pertussis and scarlet fever. She is subject to colds. Menstrual periods have not begun.

Father is an alcoholic and on many occasions had returned home in a drunken condition threatening to either turn the family out into the street or kill them all. Naturally, this has always greatly upset the child, and may be a possible etiological factor in her case. At present the father is suffering from tuberculosis at Mt. Alto, so that disturbing element in the family life is eliminated. The mother, four sisters and one brother are living and well. Two brothers are dead, one dying at birth, the other in infancy of unknown cause. Two aunts died of cancer of the breast and one of toxic goitre.

With reference to the present history, two years ago, patient developed shortness of breath upon exertion, and attacks of palpitation of the heart. At this time a swelling was noticed in the neck. Nervousness came on shortly after and dyspnœa, and palpitation gradually increased. For the past year and a half she has had pain about the heart which becomes marked upon exertion. This is not always severe, but it is discomforting. At times she is cyanotic upon exertion and for the past two years has had night sweats and becomes easily excited.

There is no cough or other symptom referable to the lungs. Appetite is poor and at times she suffers from indigestion. No vomiting. Bowels are regular. No difficulty in breathing or swallowing. No swelling of the ankles. Former headaches have been relieved by glasses. Mother stated that child was unusually thin and had no desire to work or play.

She was a thin, rather poorly nourished young girl, with flushed cheeks and watery eyes. Pupils were slightly dilated. They reacted to light and accommodation, there was no widening of the palpebral fissure, no exophthalmos or von Graefe sign. Voice was husky. Laryngoscopic examination was negative. Upon admission pulse ranged between 90 and 105.

Thyroid gland is moderately enlarged. Both lobes about equal. There was an expansile pulsation felt over the gland, also a slight thrill, and at times a bruit was heard. There was slight enlargement of the posterior cervical lymphatics. There was a marked systolic pulsation in the vessels of the neck and in the episternal notch, and a systolic murmur was heard in the carotids.

The chest was thin, lungs normal, except for the right apex, which

showed increased harshness of the breath sound both anteriorly and posteriorly with slight increase of vocal resonance. No whispered voice sounds or râles were heard.

Heart was slightly enlarged both to the right and left, muscular qualtity good. Rate was somewhat rapid and there was a marked respiratory arrhythmia. At the apex there was a soft systolic murmur and a harsh systolic murmur at the aortic area transmitted to the vessels of the neck.

Abdomen negative. Hands and feet were sweaty. There was no tremor and no œdema of the ankles. Reflexes normal.

With the exception of a slight trace of albumin, urine was negative.

Blood showed 18 per cent. of lymphocytes in the differential. Blood-pressure, systolic 114, diastolic, 48.

Fluoroscopic examination of the chest revealed no substernal thyroid or thymus. She was put to bed at once on routine anoci treatment in preparation for operation, which was performed twelve days later. During this time she improved but slightly.

Operation was performed by Dr. Frazier under anoci technic. Both lobes were found to be enlarged, but because of the child's age, it was thought wise to do only a single lobectomy. The right was removed, together with the isthmus as far as the left side of the trachea, leaving the posterior capsule behind. Wound was closed with drainage which was removed in twenty-four hours, stitches were taken out in seven days, wound healing by first intention.

Patient is making an uneventful recovery with gradual improvement in the symptoms. She feels better, is not so nervous and does not flush up as easily. Heart rate is about the same, although the chart shows that it has not reached the high points that it did previous to operation.

Blood-pressure, systolic, 108; diastolic, 68.

The signs which were present in the heart before operation have disappeared so that there are now no abnormalities. Electric cardiograph tracings made both before and after operation show a change in the temperature wave which might perhaps be taken to mean that the ventricular action of the heart is somewhat lessened. Blood picture is approximately the same as on admission.

Pathological report gives a diagnosis of colloid and exophthalmic goitre, the toxic hyperplasia being secondary.

Except as to the age of the patient the case was not an unusual one, but because it was the youngest case of goitre with which they had had to deal it was deemed worthy of note. Dr. Frazier has had one case of sarcoma of the thyroid in a boy of eleven years, and he recently saw a

girl of twelve years who had a non-toxic goitre of several months standing. In this case there was also an etiology of a drunken parent upsetting the nervous mechanism of the child.

The reporter referred to an article by Dr. Coleman Buford, of Chicago, in which he speaks of the condition as rather common. To be sure, Chicago is in a goitrous territory, and therefore many more goitres of all ages are seen.

Dr. Buford divides the cases into three groups: (1) Those of infancy under one year of age; (2) those of childhood from one year to adolescence; (3) those of adolescence.

In the first group, namely those under one year of age, he finds that they are not so frequent. He cites a case of an infant under one year at the Cook County Hospital, who had a goitre but this was accompanied by an enlarged thymus. Reference is also made to a case of goitre in a 6-months' fœtus, and he says that there are other scattered references through the literature of goitre in infants under one year. No reference was found in the pathological records of late years. Dr. Joseph B. DeLee has seen goitre present at birth, one in an infant born of a goitrous mother, in which the goitre was so large that the child's head was forced backward because of it. He says it is not uncommon for goitres to appear in children the second or third day after birth, and then in a few days to quickly disappear.

In the second group, namely from one year to adolescence, to which this case belongs, goitres occur with increasing frequency, according to Dr. Buford, and between six years and adolescence they are very numerous, at least in the region about Chicago.

They are usually goitres involving a well-defined area of the gland, and 9 out of every 10 will show the lesion in the lower pole of the right lobe. From this Dr. Buford assumes that possibly the thyroid gland has a division of function. They are usually benign adenomas with varying degrees of toxicity. Some are very toxic. Unilateral thyroidectomy is not often indicated. Usually, removing the encapsulated nodule or mass is sufficient, while the majority are benefited and relieved from symptoms by thyroid feeding, removal of focal infections, such as badly diseased tonsils, adenoids and teeth, and proper hygiene. He finds goitres often associated with diseased tonsils; the sort that look innocent enough until the pillar is pulled aside and the tonsil turned out of its bed.

The symptom-complex which he gives indicates a low grade of health and the case just recited falls under this list very readily. The children, mostly girls, are frail and thin with soft muscles

which easily fatigue. They are irritable, do not enjoy play and are slow in school. The eyes are usually bright and watery. No exophthalmos. Hair is gritty and dry. There is a faint flush of the cheeks, complexion is muddy and skin frequently shows eruptions. Extremities are cold and the pulse ranges between 80 and 120. The heart is tumultuous but shows no tachycardia in the usual sense. Occasionally fine tremors of the choreiform type are present.

No characteristic blood picture and no chlorosis. The history of this ten-year-old patient fits into this syndrome very well.

Out of about 3000 cases of goitre in the Mayo Clinic, 10 per cent. were under twenty years of age and only *five cases* were below ten years. The youngest was four, who showed a typical exophthalmic type. There were 3 cases of seven years, and one of eight. All were girls.

PERFORATION AT THE STOMA TWO YEARS AFTER A GASTRO-JEJUNOSTOMY FOR DUODENAL ULCER

DRS. GEORGE G. ROSS and WILLIAM B. SWARTLEY reported the case of a man, thirty-three years of age, who was admitted to the Germantown Dispensary and Hospital, November 3, 1912, and discharged December 12, 1912, as improved. He presented the symptoms of duodenal ulcer, and was so greatly improved by dietetic treatment that he was discharged after five weeks.

He was readmitted to the surgical ward of the Germantown Dispensary and Hospital, January 27, 1913, in the service of Dr. G. H. Ross, stating that two weeks after discharge from the hospital his previous symptoms began to recur with increased severity. He treated himself as before in order to get relief, but the symptoms were so extreme that he returned to the hospital.

Operation (January 29, 1913).—The peritoneal cavity was opened by an upper right rectus incision, and an ulcer found on the duodenal side of the pylorus. A posterior gastrojejunostomy was performed and the pylorus was plicated and the abdomen closed in the usual manner. Patient had a satisfactory recovery from this operation and was discharged as cured on February 21, 1913.

He was again readmitted to the surgical ward of the Germantown Dispensary and Hospital on the service of Dr. Francis T. Stewart, April 28, 1915, with the following history: Three weeks after his second discharge from the hospital, he noticed a burning persistent pain in his lower abdomen just above the pubis. Diet and " Sprudel salts " gave relief. He would have a period of malaise, nausea and vomiting almost every month. The pain would often come on about one-half

to one hour after a heavy meal, and as a rule was accompanied by pain shooting to both shoulders. Most often he had a gnawing and burning pain on an empty stomach, most pronounced about 5 P.M. These symptoms continued; always has gas and an oily fatty taste upon belching and a great deal of "heart-burn." In the morning of April 28, 1915, he did not feel well and ate nothing, but took a dose of salts with temporary improvement. He carried a bucket of coal from the cellar and on his arrival upstairs he had a sudden, sharp, stabbing and cramp-like pain in his upper abdomen, most severe around the umbilicus, and soon becoming general. This pain was accompanied by cold sweats. The physician who saw him then said he had board-like rigidity of the entire abdomen and was greatly shocked. He did not vomit, but was nauseated. His bowels had been regular and three weeks before admission they were a tarry black color. When admitted the abdomen was somewhat distended and absolutely quiescent. Respiration was entirely thoracic. The abdominal muscles were in a condition of tonic rigidity. The entire abdomen was tender, but tenderness was most marked in the lower abdomen and at a point one and a half inches to the left and on a level with the umbilicus. This point was the location of the original pain. Some dulness in the flanks upon percussion but mostly in the left side. No audible peristalsis. Four or five hours after the initial pain, the abdomen was opened by an incision 2 cm. to the left and parallel to the previous incision. The belly wall was very thin. There were many adhesions to the old scar of the previous operation. On opening the peritoneal cavity, gas and free seropurulent fluid escaped. The adhesions to the old scar of the previous operation were so dense that examination to the right of the incision was impossible. The transverse colon appeared under the incision. This and the small gut were greatly inflamed. Search revealed a perforation to be on the jejunal side of the anastomosis and just at the point of anastomosis. The perforation was about 8 to 9 mm. in diameter and of a typical punched-out type. There was no suture material found at the site of the perforation. The perforation was invaginated with a purse-string suture of linen thread. A second suture of linen thread was used to reinforce and cover over the perforated area. A counter opening was made in the midline, midway between the umbilicus and the pubis, and a large rubber tube was inserted into the pelvis for drainage. Seropurulent fluid escaped from the pelvis. The wound was closed by layer suture and four tension sutures. One long piece of gauze drainage was allowed to remain at the lower end of the upper incision. The abdominal cavity was not flushed out with salt solution. Patient was placed in

the Fowler position and given proctoclysis. He was given nothing by mouth until the fifth day, when he had a few fluid drachms of albumin water. This was increased until he was given liquid diet without milk and soft diet on the tenth day. The rubber drainage tube in the pelvis was removed on the fourth day, while the gauze drainage in the upper incision was entirely removed on the seventh day after operation. All stitches were removed on the tenth day and the patient allowed out of bed in a wheel chair. The highest temperature was 102° F. on the day after operation. The temperature gradually returned to normal and remained so until the fifteenth day, when it rose to 101 4/5°. This temperature was reactionary, after shock due to a profuse hemorrhage from the bowel and stomach. After the bowel movement, which consisted almost entirely of blood, the patient fainted and was put back to bed, having all the symptoms of shock. After being returned to bed, he began vomiting large quantities of fresh blood. The bleeding was so severe that adrenalin chloride (1 to 1000) in two fluidrachms of water was given by mouth and morphine sulphate, gr. ⅙, by hypodermic. The vomiting of blood decreased gradually and after three days they again began to give patient water in small quantities by mouth and peptonized milk by rectum. On the eighteenth day after operation he was again given liquids, and on the nineteenth day allowed out of bed with no recurrence of complications. He was discharged as greatly improved on June 11, 1915. Since patient has returned to his home, he has been working regularly and has had very little pain in the stomach. After eating a big meal or after eating fried foods, he has had discomfort and vomited several times, but is now feeling better and has gained weight. Ten days after his discharge from the hospital the patient was married, and is now the happy father of twins.

Statistics show that jejunal ulceration occurs in 1.5 per cent. of all gastro-enterostomies. Keen states that all of these cases were of the perforating character, and therefore were not recognized, causing death by abscess, or in other ways in which adhesions and complications so obscured the parts that even an autopsy failed to reveal the true nature of the disease. Mikulicz says that in 34 instances in which the location of the gastro-enterostomy anastomosis was mentioned, it occurred 25 times by the anterior and 6 times by the posterior method. In the posterior operations the jejunal opening is about 9 inches distant from the beginning of the jejunum; in the anterior it is from 16 to 20 inches distant from this point. It would appear, therefore, that the lower the point of anastomosis in the jejunum, the more susceptible the mucosa to digestive action of the peptic juices.

The jejunal ulcer develops most frequently within the first six months following the original gastro-enterostomy. Of the 146 cases collected by Schwarz in 1914, 50 developed within this period, 22 within the second half of the year, 20 between the second and fifth years, and 13 between the fifth and tenth years. As a rule, the ulcer lies close to, and is exactly on the line of, the anastomosis, but sometimes it may be an inch or two away in the bowel, at either side of the anastomosis.

In 58 cases Van Roojen found the position to be:

In the closest proximity to, or exactly upon, the suture line in....	42
In the proximal limb of the jejunum in.....	6
In the distal limb of the jejunum in.....	8
In or near the point of an entero-anastomosis in.....	2

AMŒBIC ABSCESS OF THE LIVER

Dr. A. C. Wood had a paper with the above title, for which see page 335.

MESENTERIC THROMBOSIS

Dr. George M. Laws reported the case of a boy of ten years, who on January 1, 1915, was seized with acute abdominal pain soon followed by vomiting. He was taken home on a train by his mother and during the hour's ride went into collapse. A course of calomel was administered and followed by the passage of a large quantity of blood. A few hours later there were two small bloody stools. He continued to have severe colicky pains and vomiting and showed the effect of hemorrhage when seen by the reporter, four days after the onset, with Dr. H. L. Sinexon of Paulsboro, N. J. At that time the abdomen was moderately distended and decidedly rigid and tender, especially below and to the right of the navel. Peristalsis was increased. Rectal palpation revealed nothing except the presence of old blood. No attempt had been made to move the bowels since the first day. The patient had a tuberculous history and had never been robust. For several years he had often complained of abdominal pain in the early morning, for which no cause could be discovered. Three months before this attack he had swallowed a penny which was never found, but gave rise to no apparent trouble. He was removed at once to the University Hospital. On admission blood examination was: red blood-cells, 3,350,000; white blood-cells, 17,600; hæmoglobin 46 per cent.; differential polymorphonuclears, 86 per cent.; lymphocytes, 11 per cent.; leucocytes, mononuclear, transitionals 1 per cent.; temperature, 99. Pulse, 107. Respirations, 32.

Dr. Laws, with the assistance and counsel of Dr. J. B. Carnett, opened the abdomen by a right rectus incision; a considerable quantity of bloody fluid poured out of the peritoneal cavity. About two feet of the small intestines presented, distended, œdematous and purplish in color. The line of demarcation was fairly well defined at both ends. Delivery of the loop seemed to straighten out an obstructing kink at the distal end which, however, was regarded as secondary rather than the cause of the trouble. Below this point the intestine was collapsed. The mesentery was studded throughout with hard lymph-nodes of various size, evidently tuberculous. The mesenteric veins corresponding to the damaged segment were thrombosed. It was decided not to resect because of the well-known high mortality, the technical difficulties presented by the condition of the mesentery, and the fact that the gut was still viable after four days, and the patient had not grown progessively worse. The appendix was normal and was not removed. The wound was closed without drainage. The boy was very ill for two days. Vomiting then ceased and distention gradually subsided. After recovery he improved decidedly in general health and has had no return of the former abdominal pain, which was probably due to the tabes mesenterica and may have been benefited by exploratory laparotomy and subsequent treatment.

STREPTOCOCCIC PERITONITIS COMPLICATING ERYSIPELAS

DR. LAWS related the case of a man, aged nineteen years, who was admitted to the Phila. General Hospital, service of Dr. A. C. Wood, Feb. 19, 1916, with the following history. After a prodromal period of four days the patient developed a rapidly spreading facial erysipelas on February 16. At its height the temperature was 101° F.; the pulse 90. The duration was short and by the third day was rapidly subsiding. During the evening of February 17 he had slight pain over the splenic area, but did not call attention to it until the following morning, when it became worse. Abdominal examination was negative and an ice-bag was applied and the pain relieved. In the evening of the eighteenth he complained of pain in the region of the appendix. There was slight tenderness but no rigidity. Temperature 99; pulse 88. The next morning he began to vomit and had slight abdominal rigidity. Temperature normal; pulse 100. At 4 P.M. he had grown worse—temperature 97°, pulse 120, pain most marked over appendix. He was then sent to the hospital with a diagnosis of appendicitis. By evening he had general abdominal rigidity, tenderness and distention. Peristalsis was absent. Examination of the chest disclosed a pleural friction

at the left base and evidence of an inactive tuberculous process at the apex. Under the diagnosis of perforative peritonitis the abdomen was opened by a right rectus incision; free fluid, turbid and flaky, escaped. The appendix was partly covered with inflammatory lymph and was removed. It was not perforated and the fluid was odorless. A large quantity of fluid was present in the pelvis and in both flanks. Assuming that there was a perforation high up in the gastro-intestinal tract, the pyloric region, duodenum and gall-bladder were examined without one being found. A drain was placed in the pelvis and another in the right side. Temperature, pulse and respiration rose steadily until the patient died fourteen hours later. A culture made at operation showed streptococci.

Autopsy.—The intestines for the most part are smooth and shiny but many flakes of fibrin are scattered over their surface and several hundred c.c. of reddish turbid fluid occupy the dependent parts of the abdominal cavity. The appendectomy site is perfectly closed and in good order. There are no adhesions or other disturbances referable to the operation. The intestines were examined from end to end and showed no sign of perforation, nor did the stomach, duodenum, gall-bladder and other viscera. Both pleural cavities contain one hundred to two hundred c.c. of fluid, on the left side cloudy, and slightly blood stained; on the right side clear. The pericardial sac contains a normal amount of fluid. Heart negative. Left lung is attached to the diaphragm by a liberal coating of yellow fibrin. It is highly œdematous and there are scattered groups of minute miliary tubercles in the upper lobe. In the right lung the upper and middle lobes are œdematous. The lower lobe is solid, bright red, flabby, airless, and on section highly glazed and brilliant red, resembling the red hepatization of croupous pneumonia, but differing from it in not being swollen, friable or firm. The spleen is large and contains a considerable number of yellow infarcts of hæmatogenous and pyogenic origin, some on the surface and some deeply situated. The adrenals are quite œdematous, the cortical substance being yellow, the medullary substance bright red. The kidneys present the swelling of the cortex supposed to signify acute parenchymatous nephritis. Ureters, bladder and prostate normal. Duodenum and pancreas normal. Liver appeared normal, but cut surface was highly glazed and has a peculiar orange tint for which no explanation is apparent.

DISABLING MUSCULAR ANOMALY OF HAND

DR. D. B. PFEIFFER described a case of supernumerary extensor of the digits which had interfered with the work of a pianist.

DR. ADDINELL HEWSON said this condition is very rare. The difficulty resembles, in a measure, the bridle between the middle, ring finger and little finger on the extensor tendon of the ring finger and proceeding to the two others named. This bridle prevents the act of trilling with the ring finger, when the middle and little finger must

hold the piano key down. The operation as done by the late Dr. W. S. Forbes of this city, in dividing this accessory tendon of the ring finger, has been reported in the literature. The fact, however, that it does give great relief in this mechanical movement of the pianist and flute player, is very evident. Quain's *Anatomy*, page 231, indicates the possibility of the occurrence of the fasciculi as outlined by Dr. Pfeiffer. It seems possible, from the attachment of this accessory muscle to the long extensor tendon, to divide its attachment to the long extensive tendon and thus relieve the bridle effect, or checking effect, upon the tendon in question.

TRAUMATIC SPONDYLITIS

DR. L. W. FRANK, by invitation, presented a man, aged forty-two years, who in May, 1914, tripped and fell, striking his back on a tree. The injury was not severe and he continued his work. That evening he noticed a small lump on his back which later practically disappeared. He could walk, and continued work, though at times he had slight pain in the back with neuralgic pains radiating around both sides of the abdomen. About four months later the pain in his back became quite severe, so much so that he could not lie down and had to sleep in a chair. Turning or twisting caused severe pain in the back radiating down the legs.

Eight months after the accident, the pain was so severe he could not move. He remained quiet for two months, spending most of his time in a chair, after which he got up and wore a brace. Since then he has gradually improved. At present he has no pain while lying down but the slightest jar or twist produces very severe pain in the back radiating down both legs, and he still has neuralgic pain radiating around his abdomen. He has no paræsthesia in the legs or abdomen. Since the accident he has had gradual loss of sexual desire and power. Since the accident patient has had swelling of the right leg which develops during the day and diminishes at night. At times the leg becomes very large indeed. There have been no gastro-intestinal or pulmonary symptoms.

Examination reveals a thin, stoop-shouldered man who holds himself quite rigid, though he has some tendency to bend forward. He walks slowly and with great care. The spine of the twelfth dorsal vertebra is prominent and quite tender to pressure. Below this level there is slight curvature of the spine to the left, and the spine is held rigid and immobile. Above this point the vertebræ are movable. The patient cannot stoop over, and when picking objects off the floor he does

so by flexing the thighs and knees. There are no sensory disturbances in the back, abdomen or legs. Both knee-jerks and Achilles jerks were slightly exaggerated. There is no Babinski nor ankle clonus.

The rest of the examination is entirely negative. Urine analysis is negative. Blood count reveals 5,000,000 red blood-cells with 75 per cent. hæmoglobin and normal leucocytes and differential count. Wassermann is negative. Von Pirquet is negative at the end of thirty-six hours. X-ray reveals bone destruction in the lumbar and lower thoracic vertebræ, with curvature and ankylosis of the lumbar spine.

This case conforms with the 3 points characteristic of traumatic spondylitis or Kümmel's disease. First, the injury. Second, period of practical freedom from pain during which neuralgic pains are frequently present. Third, reappearance of the pain with development of cord symptoms and kyphosis.

The only condition from which this disease must be differentiated carefully is Pott's disease. This differentiation is extremely difficult to make. In Pott's disease there is frequently a history of trauma followed later by pain in the back, kyphosis and ankylosis. However, in Pott's disease often other foci of tuberculosis are found, and this condition is more frequently found in children than in adults. The radiogram cannot aid very much in making a differential diagnosis in our case, as the condition had gone on to ankylosis and the X-ray picture of this case cannot be differentiated from that seen in old Pott's disease.

In 1891, at the Congress at Halle, Kümmel described a condition which he called traumatic spondylitis. This condition is always caused by trauma to the spine, either direct or indirect, producing a compression of the vertebral body. At the time of the trauma, patient experiences some pain in the spine, but later this disappears for days, weeks, or months, though in some cases it persists from the time of the trauma, gradually becoming worse. Several weeks or months after the accident, the patient again suffers pain in the back, accompanied by intercostal neuralgia, motor disturbances, sometimes slight in the lower extremities, with some uncertainty of gait. Later he develops a gibbosity and an associated kyphosis.

Kümmel does not attribute the condition to a fracture of the body of the vertebra for the trauma is always too slight to produce that. He considers that as a result of the trauma there develops a disturbance of nutrition (rarefying osteitis) which leads to atrophy of the two surfaces by compression ulceration. Kümmel considered such cases to be types of traumatic spondylomalacia. Similar cases have been

described by Henle, Heidenhain, Schultze and others, and in 1910 Mme. Temkin was able to collect 64 such cases.

DR. A. P. C. ASHHURST said that in the second volume of the *Episcopal Hospital Reports* (1914) his assistant, Dr. R. L. John, has recorded several cases of traumatic spondylitis. In these cases the diagnosis was based upon the fact that the original injury was very severe, causing the patient to come to the hospital and be laid up for some time. The first patient had fallen out of a third story window, landing on his feet. The second patient put his head in an elevator shaft and the elevator came down on him. The third patient fell nine feet from a ladder, landing on his head. The fourth patient was knocked down by a trolley car. The subsequent disability developed gradually weeks or months after the original injury, and it was necessary to exclude tuberculosis and syphilis as possible factors in the etiology. In the fourth patient, with disease in the lumbar region, about two years after bone transplantation was done for the kyphos which gradually resulted from his traumatic spondylitis, he developed a gumma following another recent injury over the former site of the disease. Though there was no history of syphilitic infection, he had a plus four Wassermann, but that did not change the opinion that the original trouble was traumatic spondylitis, the syphilitic infection being independent. He had been entirely relieved of his spinal symptoms since the operation, and the appearance of the gumma did not cause them to return.

It is a well-known fact that following a single severe traumatism one may get bone atrophy, as is especially seen in fractures of the neck of the femur, which almost universally terminate in shortening even when bony union occurs, and it is quite reasonable to suppose that a severe injury in the vertebral bodies, even without fracture, will produce bone atrophy also. In the cases observed in the cervical spine (Cases II and III), in which region the vertebral bodies are of insignificant size, the bone changes have been confined chiefly to the articular processes, where apparently most of the injury had spent itself.

ENDOTHELIOMA OF THE SPINAL CORD

DR. CHAS. H. FRAZIER reported a case of endothelioma removed from the spinal cord at the level of the second cervical vertebra. A lady in her sixty-fourth year, first complained of pain in the right shoulder eighteen months before her admission to the University Hospital. The initial period of root irritation continued eight

months before the second period was introduced with numbness of the right fingers and hand, and two months later weakness at first, and later complete paralysis of the right upper extremity. The examination elicited, briefly, tenderness in the neighborhood of the third cervical vertebra, spastic paralysis and sensory disturbances of the right upper extremity, paræsthesia of the left arm and leg, total loss of sensation for touch, pain and temperature in the left leg, and partial loss in the right; spasticity of both lower extremities and weakness of right leg and ankle. The biceps and triceps reflexes were exaggerated, and there was ankle clonus and a Babinski reflex on the right side.

The operation, performed under local anæsthesia, included the removal of the second, third, fourth and fifth spinous processes and the laminæ of the second, third and fourth cervical vertebræ. The tumor, when exposed, in the upper portion of the exposed canal, appeared at first to be intramedullary, but when an enveloping membrane, possibly the pia, was removed, the tumor was found to be extramedullary, attached to the dura, from which it probably originated. The cord was displaced to one side, and appeared to be reduced to one-half its normal diameter. The tumor was removed by sharp dissection, and with it one sensory root, which, surrounded by the growth, had to be sacrificed. The wound was closed with five layers of sutures, one each in the dura, muscles, aponeurosis, superficial fascia and skin. Convalescence was uneventful and by the time the patient left the hospital, thirty-five days after the operation, some power had already returned to the paralyzed arm and the patient could stand and walk with a little support. The interesting features of the case were the characteristic history, the accurate localization, the unusually high location of the tumor, the uneventful recovery, and the rapid restoration of function.

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