STAFF CONFERENCE

Thursday - March 13, 1930

CASE I

Acute Gangrenous Appendicitis.

The case is that of a boy, 16 years old, admitted to the University Hospital 2-27-30 and died 3-6-30 (7 days). Chief complaints: Frequent sore throat (1 yr.), cold and sore throat (1 wk.) pain in epigastrium (2 day), localized pain in right lower quadrant (2days), anorexia (2 days). Patient has been out of school but not in bed for one week with a cold. One day before admission (Feb. 26th), patient woke up with a stomach ache, which he thought was due to eating black walnuts the evening before. He remained in bed and pain seemed to diminish during the day. Was restless and feverish during the night. At 4:30 A.M. (day of admission), he called his mother because of sharp, localized pain in right lower quadrant, and told her that he knew he had appendicitis. A physician was called, who advised immediate hospitalization. Patient arrived here about 6 P.M. and was operated upon at 8 P.M. No previous history of any abdominal disease. Past history - measles, whooping cough, chicken pox. Slight injury in childhood. Has been quite well all his life, but not as rugged as other children. Family history - no tuberculosis, diabetes, epilepsy. Good record in school. Played basketball (1 yr.); no injury. Led normal boy's life. Frontal headaches, especially with colds. Frequent nose bleed, usually associated with colds. Once had to call a physician to stop the bleeding. Parents state that he never had a real healthy color.

Physical examination: Head and neck negative. Chest negative except for an occasional rale on the right side. Marked muscular rigidity, tenderness in the right lower quadrant. Slight muscle rigidity on the left side. Rebound tenderness present. Superficial tenderness present. A mass seemed to be palpable in right lower quadrant. Rectal showed slight tenderness. Diagnostic impression: Acute suppurative appendicitis.

Laboratory examination: Urine negative. Hemoglobin 83, wbc. 11.9, P. 78, L. 15, M. 7, group 4. Nose and throat culture negative. Culture from peritoneum - gram negative cocci and a few bacilli. Smear - gram positive diplococci and a few bacilli, few gram negative bacilli, few streptococci. X-ray of chest negative.

Operation (2-27-30) 8 P.M.): Anesthesia - spinal. Long appendix with tip and distal third, gangrenous and necrotic, having perforated. Bound down retrocecally by short mesentery. Adjacent cecum was indurated and injected. Incision - McBurney. Free pus encountered when peritoneum was opened. The peritoneal cavity did not seem to be much involved although the abscess was not walled off. The appendix dissected free and amputated. Three drains inserted, one base of cecum, one to lateral gutter, and one to pelvis. The abdomen closed in layers.

Returned from operating room in fair condition. Hypodermoclysis (2000cc. started. Blood pressure 132/86. 2-28-30, very pale, pulse weak, feeble. Given 1000 cc. glucose intravenously. Had short chill after radiation. Time of administration 45 min. to 1 hr? Pulse rapid, good quality. Chest exam. revealed coarse breathing throughout both sides, especially at bases. Mucous rales over bronchi. Had 3500 cc. of fluid during the day, nauseated, but retained all fluids by mouth. 3-1-30, Fair day, perhaps a slight improvement over yesterday. Does not take fluids by mouth very well. 2500 cc. subcutaneously and 1000 cc. of 10% glucose intravenously. Wound dressed and two stitches below drains removed to facilitate drainage. Abdomen somewhat distended and rebound tenderness present throughout. 3-2-30, Condition fair, temp. rose up to 100 degrees. Fluid intake yesterday 3800 cc., output about 800. Thin serous drainage coming from wound. This is moderate in amount. 3-3-30, Has had

getting along fairly well. Color good. Blood pressure 128/90. Drainage from wound still serous and very foul smelling, but not as copious as desired. Had an S. S. enema, followed by good results, but abdomen became very painful. Groaned constantly. Blood pressure fell to 84/50. Given 2200 cc. of fluid. 4 A.M., again went into a shock-like state. Extremities cold and clammy. Restless, somewhat irrational. Glucose 1,000 cc. at 5 A.M. followed by 2000 cc. of subcutaneous fluid. Given morphine sulphate for severe abdominal pain. Went into collapse at 6:30 P.M., pulseless, cold, breathing shallow. Seemed to improve after 1000 cc. of glucose and adrenalin. 3-6-30, Following administration of glucose, patient quited down, but in a few hours became violent and irrational. Complained of abdominal pain. Relapsed again into shock-like state. Tried to get out of bed. Respiration - Cheyne - Stokes. Exitus 12:55.

Medication: Morphine sulphate, nasal oil, codeine sulphate, elixir terpine hydrate (3-5-30) pituitrin, adrenalin.

Nurses' notes: Semi-Fowler's position, seems to have a bad cold (hyperventilated), very uncomfortable, ex elling flatus, semi-concious, perspires a great deal, nausea, no vomiting, liquid stool, complains of distension, dizzy, weak, slight nausea, external heat, cough, emesis, expectorates considerably, emesis, enema returned with considerable color, fecal material, very weak, having intense pain after enema, two large emesis of 300 cc. each greenish fluid, emesis, temperature 105, pulse 130, very irregular, chill lasting ten minutes, very restless, small emesis, breathing very labored, cyanotic, exitus. Temperature 99 to 105. Pulse 100 to 160. Respiration 16 to 40. Temperature of marked septic type, marked elevation on 1st, 2nd, and 3rd days and on 5th and 6th and 7th day. Intake 5200 cc., 3800 cc., 3850 cc., 3275, 4000 cc. Output 1200, 800, 950, 900, 1000 cc.

Autopsy: Group I - (1) Acute gangrenous appendicitis.

Group II - (1) Operation wound (drainage) (2) Acute generalized fibrinopurulent peritonitis (3) Ileus (4) Acute confluent bronchopneumonia (bases) (5) Cloudy swelling of heart, liver, and kidneys (6) Acute splenitis (7) Acute fibrinopurulent pleuritis (8) Absence of appendix

Group III - (1) Abrasions of sacrum (2) Sordes (3) Axillary lymph-adenopathy (4) Cyanosis of lips and face

Comment: (1) Association with upper respiration infection (2) Rapid onset (3) Stormy postoperative course (4) Chills following glucose injection (5) Development of pneumonia (6) Pain following enema.

CASE II

Acute gangrenous appendicitis

The case is that of a man, 47 years old, admitted to the University Hospital 1-5-30, and died 1-10-30 (5 days). Has had chronic dyspepsia for years, epigastric pain off and on, relieved by Pfunder's tablets and soda, but not by food. Has been anemic for the past year, growing progressively worse. January 2nd, and 3 days before admission, patient felt sick to his stomach after supper and vomited. Had eaten some nuts for supper, also had moderate pain in lower part of abdomen, more on left than on right, which radiated in to the testicle. Was able to sleep after midnight. The next day he ate nothing. His abdomen was sore in the above location, no distension. No disturbance of urination or pain. The next day, ate milk and crackers. In the afternoon, ate milk and oatmeal. This caused him to vomit, and he had severe pain in the lower abdomen for about half an hour. Physician called, who found patient with a weak pulse, very pale. Patient too sick to move at this time. Abdomen retracted and too tense for examination. Pain radiates into left testicle. Today, patient feels better, abdomen still tense. No history of urinary trouble.

Physical examination: Temperature 101.2, pulse 70, respirations 20.

Tall, hyposthenic individual, not well nourished, flushed face, lying in bed, mentally clear, no great pain. Head negative. Slight decrease in hearing. Mouth - pyorrhea and dental caries; right tonsil enlarged. Chest - emphysematous, asthmatic wheezes, and groans over entire chest. Heart negative. Abdomen - rigid, more so in upper abdomen than in lower, and more in lower right than upper right; tenderness generalized on palpation. Rectal - tenderness on both sides.

Laboratory examination: Urine - few hyaline casts, no reds, no whites Hemoglobin 57, rbc. 4.17, wbc. 5.25, P. 87, L. 13, group 2. 1-8-30, Wbc. 7.90. 1-9-30, Wbc. 8.40. Wassermann negative. Smear from peritoneum shows pus cells but no bacteria Culture shows heavy growth of B. coli and B. subtilis, and a few gram positive diplococci. X-ray of abdomen, 1-5-30, showed marked dilation of small bowel with gas, appearance suggesting obstruction. There is some broadening of the margins between the loops which might indicate peritonitis, Cannot distinguish between obstruction and peritonitis in these films, No definite evidence of free gas in peritoneal cavity, but this could not be ruled out. Small amount of opaque substance, resembling barium, in gastro-intestinal tract. Diagnosis: Possible obstruction or peritonitis, dilated small bowel.

Operation, 12-5-30, 9:12 to 9:40 A.M.: Spinocain. Purulent exudate throughout peritoneal cavity with no attempt at walling off. Few fibrinous adhesions around site of appendix, but no localized abscess. Appendix gangrenous in its proximal half. Appendix merely ligated and cut across above ligation. Four drains inserted, one to pelvis, one lateral to ascending colon, one under diaphragm, and the fourth into the left and upward to the coils of the intestine.

Returned from the operating room in fair condition. Later stated as precarious. Patient responds but is sluggish. Lies perfectly quiet. Given hypodermoclysis and glucose. Blood pressure 112/62. 1-6, Condition fair. Wbc. and temperature do not indicate very good resistance. Patient appears toxic and looks dehydrated. 2000 cc. Hypodermoclysis, 1000 cc. 10% glucose. Asthma bothers patient considerably. 1-7-30, Condition still about the same, very toxic, moderate rebound tenderness all over abdomen. Chest full of rales and rhonchi, mostly expiratory. Probable bronchopneumonia at right base. 1-8-30, Temperature gradually rising, rebound tenderness increased with more respiratory difficulty. Attacks of asthma no longer controlled by ephedrine. 1-9-30, More toxic, does not respond. Abdomen not distended. Cannot determine tenderness as patient does not respond. 1-10-30, Pulse rapid, fairly good quality, respiration labored, given adrenalin, pulse weak and thready, caffeine sodium benzoate, adrenalin intracardiac, slight response but not maintained. Expired 5:35.

Summary: Patient had generalized peritonitis at time of operation according to history and findings of home physician and probably became a generalized condition about 30 to 36 hours before operation. A bad prognosis was given at the time on account of generalized peritonitis and low white count.

Therapy: Morphine sulphate, hypodermoclysis, intravenous glucose, ephedrine, hyperventilation, hot packs to arms, adrenalin, caffeine sodium benzoate,

Nurses' Notes: Pale, semi-concious, improved following intravenous medication, perspires profusely, does not complain of any pain, no complaints, fairly comfortable night, slept fairly well, takes fluids and retains them well, breathing much better, nervous and restless, breathing labored, no response to stimulants, exitus 5:35 A.M. Temperature 98.6 to 100.7. (gradual rise from day of admission when it was 101) Pulse 70 to 160. Respirations 20 to 30. Fluid intake 3,000, 3,000, 2500, 2500, 3050. Output 1300, 1300, 2025, 700.

Autopsy: Group I - (1) Acute Gangrenous appendicitis

Group II - (1) Acute fibrinopurulent peritonitis (2) Ileus (3) Acute bronchopneumonia (basal) (4) Acute fibrinopurulent pleuritis (5) Cloudy swelling of heart, liver, and kidneys (6) Acute splenitis (7) Recent operation wound (8) Old operation scar (9) Absence of appendix.

Group III - (1) Puncture wounds (2) Hemorrhages (3) Benign melanoma

Comments: (1) History of dyspepsia (2) Differential diagnosis between perforated gastric ulcer and appendicitis (3) Acute peritonitis before operation (4) History of asthma, hernia, and hemorrhoids (5) Profound toxemia (postoperative).

CASE III

Acute gangrenous appendicitis

The case is that of a 17 year old girl, admitted to the University Hospital 1-28-30 and died 1-29-30 (1 day). About December 25, 1929, patient developed a dull pain in the mid-abdomen with a feeling of fullness and some nausea and vomiting. Has had some pain and constipation since then. January 25th, took sick with nausea and vomiting. The pain localized in the right lower quadrant; vomited only four times since onset. First day, temperature 101?; now only 99 plus. Anorexia for a few days before onset of illness. History states that patient also had diarrhea and cramp-like pain with attacks. January 26th, pain was very severe, but patient did not vomit. January 27th, pain remained about the same, and the patient vomited again. Was taken to another hospital where she remained for one day and then was sent here. Has had some burning urination and frequency for the past month. Last menstrual period was January 7th, associated with severe abdominal dramps, much more severe than usual. Patient denies exposure to veneral infection since one year nine months ago. At that time, she was sent to the State School where the smears were negative. Says she has been on probation from the School and has not been exposed.

Physical examination: Head and chest negative. Abdomen seems distended. Diffuse abdominal tenderness, no rebound tenderness on left, tenderness in right kidney region and right flank and in right lower quadrant, also in right upper quadrant, somewhat less in left lower. Pelvis - uterus small, movement causes pain. Rectal examination - not especially tender in usual appendiceale area. Differential diagnosis of pelvic infection and appendicitis was made. The most likely diagnosis was considered appendicitis with a lateral appendix.

Laboratory examination: Urine examination none. Blood - hemoglobin 86, wbc. 11.25, P. 91, L. 6, M. 3. Most of the pmn. show a shift to the left. Cervical and urethral smears show no G.C. Smears from appendix show B. colli predominating, few staphylococci, and occasional streptococcus, and occasional B. subtilis. Cultures of pus show B. colli and pleomorphiccocci. Wassermann negative

Operation, 1-28-30, 7:15 to 8:30 P.M., spinal anesthesia. Appendix retrocecal and perforated in middle portion. Distal portion was gangrenous. Meso-appendix edematous. Entire omentum edematous. General peritoneal cavity filled with turbid, foul smelling fluid. No attempt at walling off. Appendix clamped across base and divided. Stump inverted. Five Penrose drains inserted, one in lateral gutter, one at site of appendiceale stump, one in right upper quadrant, one leading to left lower quadrant, and one in the pelvis.

Prognosis - 75% for recovery.

Postoperative treatment: Blood pressure 76/60. Given adrenalin. Foot of bed elevated. Had several injections of adrenalin. 1000 cc. 10% glucose intravenous. Blood pressure went down. Pulse became very weak and rapid. Respiration labored. Patient irrational. Expired 10:20 A.M., 1-29-30.

Therapy: Morphine sulphate, adrenalin, hypodermoclysis, intravenous glucose, external heat.

Nurses' notes: Face flushed, complains of slight abdominal discomfort, admitted 4:30 P.M., to operating room 6:40 P.M., cold and cyanotic, pulse weak and imperceptible, bed in semi-Fowler's, resting more comfortably, talks irrationally, pulse very weak, respirations labored, extremities cold and clammy exitus.

Temperature 99.6 to 103.8; pulse 70 to 140; respiration 18 to 34.

AUTOPSY: NONE

CLINICAL DIAGNOSES: Group I - (1) Acute Gangrenous appendicitis
Group II - (1) Acute fibrinopurulent peritonitis

Comment: Differential diagnosis from acute pelvic infection (G.C.) (2) History of probably previous attack (3) Delay in operation (4) Terminal condition at entrance. (5) No postmortem examination obtained.

CASE IV

Acute appendicitis (drainage), bowel obstruction

The case is that of a female, 29 years of age, admitted to the University Hospital 11-9-29 and died 12-6-29. Chief complaints - severe crampy pain all over abdomen for past 18 hours. About 8 weeks ago, operation was done in another hospital for ruptured appendix. Convalescence normal until third day, when she had a miscarriage of six months fetus. After miscarriage, opened up again and the drains put on the other side. There has been a draining sinus since then. November 4th, had a normal bowel movement. Since then, has had almost no movement. Perfectly comfortable until 11-8, at 12 o'clock when she began to have steady cramp-like pains over the entire abdomen. Physician called at 2 A.M., and she was given an enema. No fecal material was obtained. Only gas was expelled. Has had no vomiting at any time. She was given a hypodermic injection, and when she came to the hospital was not having any pain. Had typhoid fever six years ago, and has been a carrier ever since. Has infected many individuals. No previous operations. Family history - one brother died at 24 of typhoid, one child has typhoid at the present time. Has had three miscarriages between the sixth and the seventh month, said to be (one) due to typhoid, (one) to operation, other cause unknown.

Physical examination: Patient is pale and listless, looks sick. Head and chest negative. Blood pressure 130/88. Slight tenderness and distension of abdomen, two draining sinuses in the right and left lower quadrant. Abdominal distension was not marked, and there was no visible peristalsis. Peristalsis was audible on auscultation. Rectum was empty but ballooned out. There was a definite mass, very tender, in the pelvis. Soap suds enemas were given on admission with difficulty, patient being able to retain only about one-half the enema. This was expelled with no fecal material and very little, if any, gas. The crampy, colicy, pain persisted. Patient vomited several times in the afternoon, and the abdominal distension increased.

Laboratory: Urine negative. Hemoglobin 57, rbc. 3.2, wbc. 30.5, pmn. 74, L. 26. Urea nitrogen 18.6, van Slyke 44, Blood chlorides 509.4. X-ray of abdomen showed marked dilation of colon, especially in proximal half, with gas, also some dilation of the distal half of the colon and of the rectum. There was a considerable accummulation of fecal material, especially shown in the transverse colon, splenic flexure, and somewhat in the descending colon. Some dilation of the small bowel with gas was also shown, and in the upright position distinct fluid levels in the small bowel could be made out. The appearance was not characteristic of small intestinal obstruction because of the large amount of gas in the large bowel.

Because of increasing pain and distension, operation was done on the day of admission, November 9th, 8 hours after patient came to the hospital and approximately 20 hours after the first pain. Spinal anesthesia, Battle incision on left. Pus was encountered on going through the abdominal wall. Complete exploration was not done. Several loops of small bowel were seen plastered into the pelvis with exudate, apparently the site of the obstruction. Large catheter passed into the dilated loop of small bowel which presented itself. This relieved the obstruction, total drainage being 2300 cc. the first twenty-four hours. Given subcutaneous fluid, and also fluid by mouth. Comfortable until

11-14-29, when again complained of gaseous distension and abdominal pain. Noble's enema immediately with no gas or no fecal material. X-ray examination showed a drainage tube in place. Considerable dilation of small bowel above. It was coiled and markedly dilated with gas, appearing as if there was something obstructing the drainage. Was given 1 cc pituitrin. Within 10 minutes, complained of tingling sensation over body, feeling of weakness, perspired freely and went into shock. Pulse became rapid and barely perceptible. Caffeine and adrenalin were given with poor response. Abdomen was still distended and metallic tinglo heard on auscultation. Taken to operating room and transfused with 500 cc. of whole blood. Symptoms of shock disappeared.

Evening of 11-15-29, patient again complains of abdominal pain and slight amount of distension. Attempt at irrigation failed. Explored under spinal anesthesia. A tremendously dilated coil of intestine was found just proximal to the point at which the enterostomy had previously been made. A plastic mass of exudate apparently caused the obstruction. A loop of small intestine collapsed was found immediately adjacent to this loop. With some difficulty, the distended loop was delivered and a catheter inserted and tied. Catheter also threaded into collapsed loop, such that the content of the distended bowel could be collected and drained into the collapsed loop. Wound closed. Patient stood the procedure very well. Following the operation, the drainage material from the proximal loop was filtered and allowed to run into the distal loop. Glucose solution was also administered by the same route. 11-19-29, Barium was injected into the distal collapsed loop of the second enterostomy. One of the loops communicated with the terminal ileum, and from there the barium entered the cecum and filled the entire colon as far as the sigmoid. The loop of jejunum into which the tube entered appeared to be somewhat dilated. 11-20-29, Patient had a bowel movement of normal well formed stool. 11-23-29, Increasing abdominal pain and distension again. Explored under spinal anesthesia through a midline incision above the umbilicus. There were several adhesions present. Only a loop in the left quadrant could be seen, which was dilated and apparently obstructed. The bowel into which the catheter had last been placed was also isolated and the catheter could be felt to be present within the bowel. This was a segment which previously was felt to be the segment distal to the point of obstruction and a catheter had been fitted in it with the purpose in mind of feeding the patient. Subsequent to that operation, even this loop had become partially obstructed, for at any rate, it was somewhat dilated. The catheter was inserted into the obstructed loop. There was some free fluid in the peritoneal cavity. The lower half was obscured by plastic exudate.

11-28-29, Blood urea nitrogen 27.5, van Slyke 48, chlorides 365 m.g. Cultures from abdominal wound showed many types of bacteria, including streptococci, staphylococci, and B. coli. From this time on, patient gradually went downward with daily temperature elevations to 103, increasing malaise, and loss of weight.

Treatment: Daily subcutaneous intravenous glucose solutions, irrigations of abdominal wound, which became infected from discharge of feces. 12-5-29, Urea nitrogen 39.8, van Slyke 51, chlorides 297. 12-6-29, Patient expired, apparently of toxemia from peritonitis.

Autopsy: Group I - (1) Acute appendicitis (acute fibrinopurulent peritonitis)

Group II - (1) Intestinal bostruction due to adhesions (2) Enterostomy (3) Draining sinuses (4) Operation wounds (5) Abscess of pelvis (6) Gangrenous bowel (7) Absence of appendix (8) Acute diffuse bronchopneumonia (9) Cloudy swelling heart, liver, and kidneys (10) Acute splenitis (11) Decubitus ulceration

Comments: (1) Typhoid carrier (2) Mortising (3) Multiple draining sinuses (4) Bowel obstruction due to adhesions (5) Persistent attempts to relieve obstruction (6) Death due to toxemia and systemic infection (7) Note blood dyscrasia.