

# TRANSACTIONS

OF THE

## PHILADELPHIA ACADEMY OF SURGERY

STATED MEETING HELD NOVEMBER 4, 1929

The President, DR. ASTLEY P. C. ASHHURST, in the Chair  
CALVIN M. SMYTH, JR., M.D., Recorder

### BLEEDING ŒSOPHAGEAL VARICES, DUE TO HEPATIC CIRRHOSIS

DR. RALPH GOLDSMITH, by invitation, reported the case of a printer, aged fifty-six years, who was admitted to the Jewish Hospital May 4, 1929, in the service of Dr. William H. Teller, to whom the speaker was indebted for the opportunity of operating upon him. The previous history was irrelevant except for the fact that he had been a heavy drinker for about thirty years. December 28, 1928, he had a sudden feeling of weakness and shortly afterward noticed that his stools were tarry. Occasionally thereafter he observed a little blood in his stools, but paid no attention to it. On the day of admission he hurried for a car and suddenly collapsed. He vomited a large quantity of bright blood and continued to do so after admission to the hospital. So profuse was the hæmorrhage that his hæmoglobin fell to 23 per cent., with a corresponding drop in erythrocytes, and his condition was so critical that it was impossible to carry out any gastro-intestinal studies. Physical examination revealed nothing that threw further light upon the case. There was no splenic enlargement. The test of hepatic function showed a normal dye retention. After repeated blood transfusions his hæmoglobin rose to 50 per cent. and operation was performed on May 25, 1929.

The abdominal cavity was entered through an upper right rectus incision. Examination of the stomach and duodenum failed to reveal evidence of any lesion. The stomach was not opened. The liver was definitely cirrhotic, the cirrhosis appearing to be a moderately severe Laennec's process. Additional corroborative evidence was found in that the veins in the gastrohepatic omentum and along the lesser curvature were dilated and unduly tortuous and that the same was true of the veins in the falciform ligament. Accordingly the gastrohepatic omentum was divided between ligatures from as close as possible to the cardia all the way to the pylorus. Its freed edge was then sutured to the anterior parietal peritoneum in the neighborhood of the incision. The operation was done with ease and was well borne by the patient.

Convalescence was entirely uneventful and the patient was discharged in good condition. He has been interrogated at intervals in the interim and has remained well. He was last interviewed on November 1, 1929. At this time he was found to have gained about fifteen pounds. He has been working steadily for several months. He has at no time experienced any discomfort referable to his gastro-intestinal tract, nor has he vomited blood nor passed it by bowel. There was no discernible ascites nor œdema of the legs or feet. He continues to use alcohol, though in moderation as compared with his past indulgences. He considers himself to be in excellent health. It has been impossible to arrange with him to submit to further investigation.

This case was presented with a full realization that the diagnosis of bleeding œsophageal varices was made inferentially rather than by direct evidence, but it is believed that it is as soundly established as is usually the case. It was also realized that the period which has elapsed since operation—five months—is insufficient upon which to base a presumption of permanent success. On the other hand, the rationale of the procedure as well as its apparent safety is such as to warrant the hope that it may be completely successful and to justify the further application of the method.

The reporter remarked that the majority of deaths in patients suffering from portal cirrhosis are undoubtedly caused by hæmorrhage, and the fatal hæmorrhage invariably results from the rupture of varices in the lower portion of the œsophagus. Treatment of this condition has always been unsatisfactory, although a certain number of cases have been benefited by operations of which the Talma-Morrison is the best known and most successful. Rowntree, in the proceedings of the Staff Meetings of the Mayo Clinic, vol. iv, No. 16, April 17, 1929, reported a new procedure in the management of this disease, and presented a case in which it had been utilized. Walters, in discussion, mentioned that it had been carried out in a second case. It is believed that the case herewith presented may be the third to be recorded.

The principle upon which the operation is based is that of preventing the blood dammed back by the portal obstruction from reaching the œsophageal varices. McIndoe, of the Mayo Clinic, injected and removed *en bloc* the portal system and the chief collaterals in some patients who had died of cirrhosis, and found that the bleeding point was practically always situated at the lower end of the œsophagus or just within the cardia. He found, also, that the varices invariably "lie between the coronary vein of the portal circulation on the one hand, and the intercostal and azygos minor veins of the caval system on the other. The coronary vein normally drains the lesser curvature of the stomach from pylorus to cardia, and then turns abruptly to the right within the gastrohepatic omentum to open into the portal vein proximal to its juncture with the splenic vein. Coincidentally with the development of the collateral circulation the flow of blood in this vein is reversed and the full force of the portal current is directed against the cardiac and œsophageal anastomotic venous plexus. A localized area of submucosal varicose veins is produced, which owing to its unprotected situation is particularly exposed to trauma."

The operation proposed by Rowntree on the basis of this mechanism described by McIndoe was successfully carried out in two cases by Waltman Walters (*loc. cit.*). It consists of interrupting the flow of blood from the coronary veins to the varices by ligating the former. This is accomplished by ligating and dividing the gastrohepatic omentum throughout its length, care being taken to go as close to the gastric cardia as possible. The divided edge of the gastrohepatic omentum is then sutured to the anterior parietal peritoneum, either incorporating it into the abdominal incision or anchoring it in the region of the falciform ligament of the liver, in the hope of estab-

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lishing collateral circulation through the para-umbilical veins to the cava. Thus it is planned to increase the anastomotic routes as well as to prevent further hæmorrhage from the varices.

DR. DAMON B. PFEIFFER asked whether the condition of the spleen was noted at the time of operation. Several years ago in reviewing the literature of gastric hæmorrhage with special reference to the spleen as a cause, he was surprised to observe with what frequency hæmatemesis had been reported by surgeons of the highest qualifications who had nevertheless failed to mention in their reports whether the spleen had been examined at the time of operation or had in any way been considered as a possibility. He reported at that time two cases of massive gastric hæmorrhage due to splenomegaly and based on his observations in those cases made the suggestion, which so far as he can determine was original, that hæmorrhage in these cases is usually due to erosion of the submucous varices in the fundus of the stomach. In that obscure paper he called attention to the fact as stated by Mall that 40 per cent. of the blood in the splenic artery goes to the stomach, and that there is a corresponding venous return. Enlargement of the spleen with its immense demand for blood would probably result in a greater supply to the fundus of the stomach as well, and the well-known capacity of the spleen to contract under certain conditions would from time to time shut into the stomach even greater quantities of blood which would have been carried off by the veins. This would seem to be an efficient cause for the varicosities observed in the fundus. He noted, also, that the vasa brevia were obviously enlarged. He is calling attention to these points in order to induce surgeons, who make reports of operation upon cases of massive gastric hæmorrhage, to note and report also the size and condition of the spleen.

DR. I. S. RAVDIN said that Dr. T. Grier Miller, Dr. Harold Austin, and himself had been engaged in some experimental work on the relation of ligations of the splenic artery and vein to venous pressure in the gastro epiploic veins. They had evidence which indicated that when the splenic artery or vein were ligated at a point distal to where the blood from the stomach emptied into the splenic vein, that pressure rises in the gastro epiploic veins. The speaker suggested that in splenic disease where a condition of this sort might be stimulated within the spleen itself, the rise in pressure in the gastro epiploic veins might produce varices and that this rise in pressure might result in gastric hæmorrhage.

DR. HUBLEY R. OWEN called attention to a recent report of a case by Dr. Dewitt Stettin, of New York, in which he did remove the spleen. The interesting point of his case was the remarkable return of the blood picture to normal within a very short time. Recently the speaker discharged from the Woman's College Hospital a patrolman who had had two overwhelming gastric hæmorrhages while on duty. The diagnosis was bleeding gastric ulcer. However, it was impossible to operate at that time. He was readmitted to the hospital on September 1. He received practically no treatment

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but four or five blood transfusions, after which paracentesis removed considerable fluid from his abdomen. Doctor Owen asked Doctor Goldsmith the blood picture of his patient when he operated. In the speaker's case the hæmoglobin was 40 per cent. with about 2,000,000 red cells.

DOCTOR GOLDSMITH reported that his man was thoroughly explored and his spleen was substantially normal in size, perhaps slightly enlarged. The veins along the lesser curvature of the stomach were enlarged. His liver did not show very marked change; none the less he had these violent hæmorrhages. The speaker had thought of having an examination with the œsophagoscope at some later date, but has been unable to arrange it. The blood picture was 30 or 35 per cent. hæmoglobin which was raised by transfusion until it was in the neighborhood of 50 per cent. The operation itself is extremely simple and was followed by little or no reaction.

### SUBACUTE HÆMORRHAGIC PANCREATITIS

DR. RALPH GOLDSMITH reported the case of a man, aged forty-five years, who had always been in what he considered to be good health. For two years, however, he had been troubled at times by attacks of indigestion which took the form of a feeling of abdominal distention and discomfort. This he attributed to constipation and was able to obtain relief by enemata and carminatives. His appetite was always excellent and he was not particularly distressed by the taking of food. There was no loss of weight or strength. He was very nervous, and when agitated for any reason whatever was in the habit of vomiting. This vomiting sometimes occurred coincidentally with the attacks of indigestion, but was just as likely to happen independently of the latter.

In February, 1929, the patient, in order to ward off a cold, purged himself thoroughly. He was awakened that night by severe cramp-like abdominal pain accompanied by vomiting. He was treated by his physician and the pain wore off gradually, but he felt weak enough to remain at home for two or three days. X-ray examination on March 1, 1929, was reported as follows:

"Röntgenographic study of the abdomen made six and twenty-four hours following the inspection of an opaque meal reveals evidence of an abnormal spastic type of colon. Fluoroscopic examination shows evidence of a localized tenderness over the shadow of the contrast filled appendix. Cholecystography shows evidence of chronic gall-bladder disease. There is still retention of the contrast meal in the caput coli and appendix at forty-eight hours following the ingestion of the meal and still a well defined tenderness immediately over this area. There is undoubtedly röntgen evidence of chronic pathological changes about the appendix."

March 7, 1929, the patient was again awakened by an attack similar to the one described above. The pain was described as "crampy, knife-like and as though a belt were being pulled tightly around the abdomen". It was rather more intense than in the first attack, and was most marked in the right lower quadrant. It was again accompanied by vomiting and sweating, but no fever nor chills were noted. A hypodermic of morphine was administered with considerable relief. A diagnosis of appendicitis was made and on March 17, 1929, the patient was admitted to the Jewish Hospital.

The patient walked into the hospital. He made no complaints and appeared to be entirely comfortable. His temperature, pulse and respirations were normal. Blood pressure was 124/84. Physical examination revealed

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diseased tonsils, a lipoma of the shoulder and a very obese abdomen with moderate tenderness of the right side, particularly in the lower quadrant. There was no rigidity, no masses were felt, peristalsis was active, and the matter of shifting dullness was not noted. Examination was otherwise negative. An electrocardiogram showed a simple tachycardia only. The urine was negative except for a trace of albumen. Examination of the blood revealed hæmoglobin 92 per cent., neutrophiles 75 per cent., erythrocytes 4,650,000; lymphocytes 25 per cent., leucocytes 9100. The Wassermann reaction was negative. Blood sugar was .091, blood urea nitrogen 13 milligrams. A diagnosis of chronic appendicitis and chronic cholecystitis was made and the patient operated upon on March 19, 1929. Upon opening the peritoneum there was a gush of creamy pinkish-white fluid containing recognizable globules of fat. So much of this escaped that it was impossible to measure it, but there must have been several pints. There was necrosis of the omental fat and of the appendices epiploica. The peritoneum was reddened and exhibited white fatty plaques. Exploration revealed a rather small, free appendix, not acutely inflamed. The gall-bladder was thickened but contained no stones. The pancreas was enlarged and hard, with areas of boggy softening and necrotic spots. The patient took the anæsthetic very badly and at all times during the operation his condition was a cause of grave concern. For this reason, and on account of the fact that he had been practically asymptomatic prior to operation, it was considered inadvisable to subject him to any prolonged surgical procedure. Therefore drainage was instituted through the original incision and through a stab wound in the left lower quadrant and the abdomen closed. His convalescence was uneventful.

The patient was examined October 30, 1929. His wound was firmly healed, and there was no hernia. He had been working steadily since shortly after his discharge from the hospital and had suffered no inconvenience. His digestion was rather better than before operation and he had had no further attacks of pain. He considered himself well.

Doctor Goldsmith remarked that it seems reasonable to suppose that this man had suffered an attack of acute hæmorrhagic pancreatitis on two occasions prior to operation. The etiology was probably a chronic bile-tract inflammation with extension along the pancreatic duct. It is likewise probable that he would have recovered without operation, since the acute symptoms had subsided before he came to the hospital. It is recognized that because of the non-removal of a diseased gall-bladder he may have a recurrent attack of pancreatitis, but it was felt that a cholecystectomy would have jeopardized his life at the time of operation. He has since refused to have this procedure carried out.

The clinical picture of hæmorrhagic pancreatitis is ordinarily so striking and presents features of such gravity that it is properly considered to be one of the most dangerous of intra-abdominal lesions. That this is not always the fact, however, is indicated by the subjoined case, which is interesting for the reason of the disparity between the clinical symptoms and the pathological findings.

This case is presented to indicate the difficulty in making a diagnosis of pancreatitis on the evidence obtainable, as well as to call attention to the fact that the peritoneum has higher powers of resistance to the pancreatic enzymes than is generally realized. It is likely that many cases of pancreatitis of this character recover spontaneously and are never recognized.

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RECURRENT TUBERCULOUS LYMPHADENITIS OF THE  
AXILLA AND NECK

DR. DAMON B. PFEIFFER presented a man aged thirty-one years, who first noticed several small enlarged nodes in the axilla and the neck on the right side in the Fall of 1923. They were not painful or sore to touch. On account of their gradual enlargement several months later one of them was removed for examination. The microscopical diagnosis was tuberculosis.

The patient was exceptionally robust and healthy. The family history was negative, and there had been no known exposure to tuberculosis. He had had no illnesses except measles, chicken pox and possibly diphtheria in childhood. Examination of the lungs was negative and has remained so up until the present. The axillary nodes were larger than the cervical, varying from barely palpable nodules up to one or two centimetres in diameter. No history could be elicited of a wound or sore on the hand, arm or adjacent trunk which might be construed as a portal of entry. The tonsils were moderately enlarged and injected. The palpable glands in the neck were all in the supraclavicular triangle. None could be felt in the submaxillary region, though his stocky, thick neck could easily have caused one to overlook moderate enlargement of the deep glands. It was decided to have the tonsils removed, which was done together with some adenoid tissue October 10, 1924. Microscopical examination was not made. It seemed likely that such an exceptionally healthy appearing individual would be able to deal with the glandular infection after removal of the troublesome primary focus.

He was readmitted to the Abington Hospital, January 27, 1927, slightly more than three years later. His general health had continued to be excellent. The cervical nodes had diminished in size and were entirely quiescent. The axillary nodes now formed a conglomerate mass as large as a lemon. The mass was removed *en bloc* and there has been no recurrence in this region.

Two years later he was readmitted with marked enlargement of the cervical glands on the right side, which had begun suddenly two months before. There were many glands in all the lateral triangles. They were tender and quite highly inflammatory in character. One in the post auricular area had evidently undergone partial softening. The general health was still excellent. The throat appeared normal. January 24, 1929, the glands were removed by what amounted to almost a bloc dissection. A part of the sternomastoid was involved and was removed. The spinal accessory nerve had to be dissected from an inflammatory mass which completely enveloped it. Fortunately, no paralysis resulted. Enlarged glands were present in the substance of the lower pole of the parotid gland which was resected. A temporary partial facial palsy followed which rapidly cleared up. Recovery was uneventful.

Four months later, May 12, 1929, he was again admitted on account of glandular swelling which had suddenly come on in the submaxillary triangle on the left side. Realizing from previous experience that spontaneous subsidence could not be expected a wide excision was made of the infected glands and of the adjacent lymphatic bearing tissue as well. There has been no recurrence on this side.

Three weeks ago a sudden enlargement began just below the mandible on the right side. This is in a spot which was spared in the former dissection because of danger of damaging the submaxillary branch of the facial nerve. Doctor Pfeiffer decided to try the effect of a few X-ray exposures on this single isolated gland. The diagnosis in this case has been verified by two guinea pig inoculations from glands removed at the second and third operations.

## RECURRENT TUBERCULOUS LYMPHADENITIS OF AXILLA AND NECK

DOCTOR EIMAN expressed the opinion that the infection is probably of the bovine type. If so, this disease may have come originally through tonsillar infection from milk or butter.

DOCTOR PFEIFFER remarked that this patient is an example of a surgical condition, once common but now rather rare. The reasons for this decreased frequency are (1) the diminution in all forms of tuberculosis, (2) the sanitary precautions thrown about milk and dairy products, (3) the common removal of tonsils and adenoids which are the usual primary foci and (4) the idea that glandular tuberculosis, even if present, is not a surgical disease. It is well to sound a note, now and then, that this latter idea is not altogether correct. It is true that many cases of tuberculous lymphadenitis particularly in children, will regress, become symptom free and quiescent after removal of primary foci, and institution of the well-known hygienic measures directed towards the control of tuberculous infections. The use of the X-ray, ultra-violet light, tuberculin and local measures such as aspiration of softened glands have all enjoyed at times considerable popularity as adjuvants in treatment. The X-ray has established itself as a valuable agent in certain cases, ultraviolet light as well as X-rays are often successful in clearing up simple persistent tuberculous sinuses. Tuberculin has not fulfilled the early hopes. Aspiration of softened glands and injection of various substances has met with no favor in this country. Local applications and counterirritants have been found to hasten softening in many cases. In the multiplicity of measures available and at times successful, it would appear that the profession is not clear upon the relative values of the various methods. There can be no question that it is of paramount importance to remove the primary focus in all cases of glandular tuberculosis. In cervical adenitis this usually means tonsillectomy and adenoidectomy. Also, it is equally important to institute the recognized antituberculosis regimen. There can be no objection to ray or light therapy for a reasonable trial. It must not be overlooked, however, that not all glandular infections can be disposed of in this manner and one should be alert to note those which continue to progress or are lagging unduly under such measures. Dowd, long ago, showed incontestably that the removal of tuberculous cervical glands, while they are still confined to the earliest involved groups in the superior deep cervical chain is almost invariably followed by complete and permanent cure. Hanford more recently has confirmed this experience. This year, Miller and Shedden in reviewing the cases for the Massachusetts General Hospital have pointed out an additional reason for early removal of these glands. They were able to trace 132 of 204 cases and found that 29 (22 per cent.) had died of some form of tuberculosis. They quote the recent opinion of experts in tuberculosis that glandular tuberculosis is often associated with a mild bacteremia. The path is from the primary focus to the nodes, thence to lymphatic trunks and onwards to the venous system, then to the lungs and in many cases to the systemic circulation. While the incidence of glandular tuberculosis is greatly lessened at the present time, it is worth while to call attention again to the

serious results that often follow delay and neglect of these lesions and to remind the profession that in early surgical removal of primary lesions and primarily infected glands, we have the best insurance against local spread and systemic involvement.

DR. JOHN H. JOPSON said that this case raised the question as to the point of infection. In tuberculous glands of the neck, of course, the point of entrance is generally in the throat, but in tuberculous lymphadenitis of the axilla and groin the hand or foot may be the site of the initial lesions. The speaker recalled a case which had come under his care in which axillary involvement was traced to an injury to the finger and the connection between the injury and the condition of the axilla was shown with sufficient clarity to convince an Indemnity Insurance Company. The patient had been engaged in unpacking pottery which was surrounded by straw; an injury to the finger by a thistle in the straw was the apparent portal of entrance for the tuberculosis. This man quickly developed a large mass of tuberculous glands in the axilla with mixed pyogenic infection which Doctor Jopson removed. The infection was probably of the bovine type. Doctor Jopson agreed with Doctor Pfeiffer that these cases were best treated by surgery which as C. M. Dowd has shown will cure 85 per cent. of the cases in one operation. At least in children. Although tuberculous lymphadenitis is not seen nor discussed with anything like the frequency of a number of years ago, Doctor Jopson remarked that it was still very common in the colored race and that in his service at the Graduate Hospital, where a large number of colored patients are treated, he still sees the very worst type of cases.

DR. GEORGE M. DORRANCE said that in his experience years ago surgery alone had been extremely unsatisfactory. He has had excellent results since using X-ray and surgery and X-ray combined with local removals and not radical excisions. It is taken for granted that these patients must have all foci of infection in the mouth removed and must be treated with sunshine, fresh air and forced feeding the same as any other tuberculous patient. The speaker did not believe that the results, including a certain mortality, justify radical excision.

DR. JOHN H. JOPSON said that this question of the treatment of cases of tuberculous lymphadenitis in the neck especially is an old quarrel between Doctor Dorrance and himself. The fewer of them are being operated upon because fewer cases occur. The same is true in London where the present statistics show a marked reduction of the number of such cases observed and operated upon. This is apparently due to the fact that the milk supply of the city of London has been cleaned up and fewer patients become infected with the bovine type of tuberculosis. Doctor Dorrance's optimism is hard to understand, especially in view of the fact that one finds no such attitude in consulting the best X-ray men of this city. Doctor Jopson reiterated his position by stating that he believed the condition to be essentially a surgical one in the stage in which the majority of cases were encountered and that operation was justified and indicated.



## CHEMICAL STIMULUS IN WOUND HEALING

### THE NATURAL CHEMICAL STIMULUS FOR CELL DIVISION

DR. F. S. HAMMETT, by invitation, remarked that a fundamental discovery would be that of the chemical differences between a cell in mitosis and one resting. The work at the Research Institute of the Lankenau Hospital began with this problem. It was known that lead would retard cell division, from the work of Blair Bell and his assistants. How it did, remained to be investigated. Growing root tips of onions, corn and beans in standard cultures containing a small amount of lead nitrate showed that the lead was precipitated in the region of active cell division and that further, this precipitate was very much more abundant within the nucleus than at any other place. Chemical analysis under the microscope brought out the fact that this was a compound of lead with the organic radicle —SH. Numerous compounds were tested in pairs, one containing —SH and the other exactly similar except that another radicle, usually —OH, was contained within its molecule instead of —SH. It was found that the compounds containing the available —SH group stimulated mitosis in plants, in paramecia and in rats. Experiments with the latter were done in this way: Two equal-sized pieces of skin were excised from a rat, one on each side of the flanks. Thio-glucose was placed on the right wound and glucose on the left. Those wounds treated with thio-glucose healed more rapidly than the others. That is to say, the thio-compound stimulated cell division to healing. The use of this radicle in man was then undertaken with the results as outlined below.

These results are to be found in detail in "Protoplasma," 1928:1929, and the Journal of Experimental Medicine, 1929.

### THE USE OF THE NATURAL CHEMICAL STIMULUS FOR CELL DIVISION IN WOUND HEALING

DR. STANLEY P. REIMANN, by invitation, said that a colored man, seventy-eight years old, with an ordinary varicose leg ulcer of twelve or more years' duration was first treated. One-half of the wound was flooded with thio-glucose; the other half was painted with mercurochrome. At the end of twenty-four hours about two square inches of epithelium had grown on the thio-treated part. No progress was made on the other half. This wound healed in two weeks sufficient to allow the application of a plaster case for a fractured thigh for which the patient had been admitted to the hospital.

Similar experiences were encountered in several other leg ulcers and in several bed sores.

The thio-glucose, as prepared by Doctor Toennies, Organic Chemist to the Institute, was used in a one to ten thousand slightly acid solution and applied as a wet dressing.

There can be no doubt that these thio-compounds stimulate the rate of cell division. But much further clinical experimentation will be necessary to determine the most advantageous compound to use; whether it is better to use as a wet dressing, or by the drip method, to use it constantly or interruptedly, etc.

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Thio-glucose also stimulates bacterial growth and it was thought that perhaps coupling the thio-radicle to a substance like phenol or cresol would overcome this objection. Later experiments, using thio-cresol, bore out this idea, for several leg ulcers and a bed sore treated with these substances showed a minimum amount of surface pus. Once again, however, the most advantageous concentrations and means of application require further investigation. For further details of this work see 1929, Reimann, S. P., and Hammett, F. S., Proc. Soc. Exp. Biol. & Med., vol. xxvii, pp. 20-22.

DR. ASTLEY P. C. ASHHURST confessed to more or less ignorance, regarding SH and OH groups, etc., but said that he was aware of the fact that rest in bed, elevation and strapping with adhesive plaster would cure leg ulcers.

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### HÆMOLYTIC ICTERUS; SPLENOMEGALY, MULTIPLE ABSCESSSES OF SPLEEN, SPLENECTOMY

DR. NORMAN S. ROTHSCHILD presented a young woman, aged twenty years, who was admitted to the Northern Liberties Hospital, in the service of Dr. Leonard Averett, September 14, 1928, with the history of having had a three months' pregnancy interrupted six days before. This condition was accompanied by severe hæmorrhage. The patient complained of severe pain in the left lower abdomen and pelvic examination revealed a uterus somewhat larger than normal, enlargement being due to subinvolution and not to retained products of conception. The left tube was enlarged and tender; the involvement of the right was the same, but to a lesser degree. The abdomen was not distended; there were visible pulsations. Liver dulness was increased about two inches below the costal margin. The spleen was palpable. A soft systolic murmur was transmitted to the vessels of the neck and to the axilla. The heart sounds were weak. Her skin was greenish yellow in color. Temperature was  $103 \frac{2}{5}$ , pulse 118, respirations 28. Blood pressure, 100 over 60. The blood count was erythrocytes 1,700,000, hæmoglobin 28 per cent. and 8,100 leucocytes. The urine showed albumen and twenty erythrocytes to the field.

Her previous medical history was very interesting. She stated that she had been a patient in the Children's Homeopathic Hospital two years ago, suffering with jaundice, anæmia and an enlarged spleen. This jaundice was noted by her sisters and brothers for many years and she was constantly the subject of teasing because of her yellow color. A report from the hospital stated that she was admitted with a severe anæmia, jaundice, and an enlarged spleen, which extended into the left iliac fossa. Her blood count at that time was as low as 2,200,000 erythrocytes and 48 per cent. hæmoglobin. The Van den Bergh was direct; delayed and indirect; bilirubin slightly positive. Fragility of red corpuscles, complete hæmolysis in 0.44 per cent. salt solution.

The following day she was given 200 cubic centimetres of blood and showed a slight improvement. The temperature began to approach normal and 400 cubic centimetres of blood was given two days later. Eleven days after admission her temperature rose to 104, then to  $104 \frac{4}{5}$  with some remission and then to 106. Her pulse and respirations increased with the temperature rise. She was again transfused, 300 cubic centimetres of blood being given. The transfusions were not attended by reactions. Blood cultures were sterile. The blood counts showed but a slight increase in the erythro-