Original Articles.

VISCERAL PURPURA AND ANGIONEUROTIC EDEMA.*

BY CHARLES F. WITHINGTON, M.D.,
Visiting Physician, Boston City Hospital.

BEFORE coming to the main body of this paper, allow me, by way of preface, to recall to your minds four skin affections which are more or less commonly met with and which, as will be seen later, have a close relationship one with another.

First, erythema. This occurs in two forms, so-called erythema multiforme and erythema nodosum. The appearance of these eruptions is decidedly different, the former being upon the skin and the latter underneath the skin in the form of hard, dark red, painful nodules. The former is seen occasionally after vaccination, after the injection of antitoxin and other sera. Both, however, are distinctly due to circulating toxins in the blood which may be from within or without the body. Erythema nodosum is very frequently associated with joint pains and with endocarditis.

Second, urticaria. This is the commonest of the group. It occurs in the form of raised patches, often white on the summit, with a surrounding red base, causes intense itching, and the spots of efflorescence are individually of short duration, but successive areas of the skin are usually invaded for some days. This is also due to circulating toxins usually developed within the body, most commonly originating from the alimentary canal, associated in susceptible individuals with some special article of diet. It also follows ptomaine poisoning, certain drugs, intestinal parasites, and is, like the foregoing eruption, erythema, frequently met with after the injections of antitoxin. It is sometimes seen in pregnancy, lactation, glycosuria, jaundice and Bright's disease.

Third, *angioneurotic edema*, Quincke's disease. Osler denominated this phenomenon "urticaria writ large." It is much less common than urticaria, affects limited areas of the body from 2 to 10 cm. in diameter, which suddenly swell to a considerable size, sometimes causing alarm and deformity. The spots of edema, however, quickly subside and frequently reappear in other places. It is especially frequent about the lips and other portions of the face, also the scrotum. It may affect the visible mucous membranes and, what is specially significant with regard to internal medicine, undoubtedly, the deeper mucous membranes. It is painless. It may involve tendon sheaths and cause effusion into joints, in which case it may simulate gout. If it involves the glottis it may cause death by asphyxia, so-called acute edema of the glottis. If it affects the soft palate, it produces a pseudo-croup. Quincke believed that it was the cause of what he calls serous meningitis, which disease, however, is not acknowledged by all neurologists. It has been

held, without sufficient evidence, to be responsible for attacks of epilepsy. There is no doubt that it is a cause of bronchial asthma. It is possibly the cause of so-called periodic vomiting and, as we shall see later, may produce severe gastric and intestinal crises.

Fourth, purpura. This is a name given somewhat loosely to what is not in itself a disease, but a result, perhaps, of several causal factors. It consists of spots of dark purplish color, usually small in size, which may become, in severe cases, confluent over large areas. It may cause a slight raising of the surface of the skin. It is generally divided into two groups, the first of which comprises a number of forms which we shall hardly more than mention in this paper. First, symptomatic or secondary purpura accompanying severe infections, common in cerebrospinal meningitis, constituting the so-called black form of measles, smallpox, scarlet fever and other eruptive diseases, in which it is an evidence of a profound degree of sepsis. It may also be caused by typhoid fever (Hamburger: Johns Hopkins Hospital Reports), gonorrheal endocarditis (Fairbrother), pneumonia (Edel), influenza (Pepper), gall-bladder suppuration (Stengel), grave jaundice, tuberculosis (Gassner and Finkelstein), pregnancy (Scharringen), puerperal fever, toxins from decayed meat (Burcharat), cryptogenetic staphylococcus infection (Stengel), coli communis (Adami), streptococcus (Ewing).

There are also a large group of blood diseases accompanied by purpura, among them leukemia (Edsall, Poisot and Vincent, Labbe and Béaujard). In some of these coagulation of the blood has been delayed (Gerhardt and Larrabee); in others, shortened (Ewing).

The second or essential group of purpuras is usually divided into four classes:

First, simple purpura, affecting the skin.

Second, purpura rheumatica, or Schoenlein's disease, involving the skin and joints.

Third, Henoch's purpura, involving skin, joints and gastro-intestinal mucous membrane.

Fourth, purpura hemorrhagica, or morbus maculosus Werlhoffii, which is painless and characterized by hemorrhage from all mucous membranes. A sub-variety of this form is the so-called purpura fulminans.

These forms are all expressive of toxemia which may be cyptogenetic or from outside the body. Immerman, in Ziemssen, some years ago, expressed the belief that these four were all identical, differing from one another only in degree and intensity of constitutional symptoms. The multiplicity of sites involved is apt to be proportionate to the gravity of the case, but the invasion of certain localities in the interior of the body, for example, peritoneum, meninges, kidneys, etc., produce each a characteristic group of local symptoms superimposed upon the general systemic disturbance.

Is there evidence that these four groups of skin eruption have any relation one to the other? If so, it is helpful, as in other cases in medicine, to bring together apparently diverse morbid

* Read by invitation before the Plymouth District Medical Society, Jan. 18, 1912.

manifestations and show their interrelation and common dependence upon similar antecedents. In this case the antecedents are probably varied, but that all these manifestations are of close kinship is illustrated by such a case as the following, reported by Gordon.¹

The patient, a lad of fourteen, of previous good health but of nervous and sensitive type, was taken suddenly ill with pains apparently of rheumatism in many joints and coincidently with a purpuric eruption of extensive distribution. This was quickly followed by an attack of abdominal pain with a hemorrhage from the bowels amounting to a pint of blood within twenty-four hours. So far the case had appeared at first as a simple rheumatic purpura and then as one of Henoch's purpura.

But then followed a bewildering succession of alternate joint swellings, purpuric eruptions, gastrointestinal pains with vomiting, local edemas of angioneurotic type, typical urticaria, erythema simple and exudative desquamations. The clinical picture sometimes changed in an hour, and the sequence of symptoms ran on for weeks. The rheumatic pains involved the back and leg muscles so that the boy could not move. So for weeks succeeded and accompanied each other colic, purpura, urticaria, edema, erythema. The urinary secretion was diminished.

After four weeks an endocardial infection manifested itself with loud systolic murmur. From this time the rheumatic and colic attacks ceased, but the purpuric outbreaks recurred every night for weeks. It was interesting to note that an erythematous blush could be produced at any time on chest or abdomen by simply letting the patient know that the attention was being directed to that portion. Crops of purpura continued in diminishing degree for five months and finally the patient developed chorea.

J. T. Bowen² calls attention to acute circumscribed edema with hemorrhage in various places.

Mumford³ gives a case of acute angioneurotic edema in a man of twenty, bleeder of marked type, no family history of hemophilia, who, four years ago, had a severe attack of purpura and nearly a fatal epistaxis. On entering the hospital, with a temperature of 103, there was a tumor which had grown in twenty-four hours to the size of an orange, with hemorrhagic spots in the center of the right cheek. There was a discharge of serum and blood from the mouth which took down the edema.

Holmes⁴ gives an account of a patient with angioneurotic edema and purpura, the attack lasting three weeks and the purpura outlasting the edema by five days. It is noticeable in the above cases that in proportion as one variety or locality of manifestations subsides, another shows itself, so that they are successive rather than coincident.

The appearance of joint swellings and pains in purpura is not indicative of the purpura being a complication of acute rheumatism, but the explanation is equally reasonable that both the purpura and the joint swelling are co-ordinate results of a common toxic factor. This is in line with the more recent views of the infectious character of so-called rheumatism, and there is reason to believe that there are several "rheuma-

tisms," the common one, of infectious arthritis, or so-called articular rheumatism; another, gonorrheal arthritis; another, pneumococcal arthritis; and it is significant that arthritic symptoms are quite as common in erythema nodosum as they are in purpura. The tendency of all to the endocardium is well known. The suspected connection of this group of diseases with one visceral symptom, viz., asthma, is illustrated by the following case which I saw last autumn.

A young Jewish boy, aged fourteen, of good physique and athletic habits, but of a neurotic inheritance, who is rather a promiscuous eater, has been subjected to attacks of urticaria. Immediately following one of these, he had a sharp attack of bronchial asthma, which recurred in less degree two or three times, in alternation with further attacks of cutaneous urticaria, and with the permanent relief of the latter symptom the asthma has disappeared.

A case of apparent involvement of the meninges, due to a similar cause, was reported by Osler, with recurrent attacks of active delirium. Several seizures of aphasia and hemiplegia recurred in alternation with cutaneous manifestations of the erythema group, which lasted for thirteen or fourteen years.

Our attention will, however, necessarily be confined for the remainder of this paper to forms of so-called Henoch's purpura, with abdominal distribution of the lesions.

This was first called attention to by Henoch, in his "Lectures on Diseases of Children," vol. ii, page 373, in which he narrated five cases, all in young people (for this disease is one to which the young are especially prone), in which cutaneous eruptions and joint swellings were followed by colic, vomiting, intestinal hemorrhage, pain, moderate fever, without involvement of the heart. From this publication the name of Henoch's purpura has come to be applied to this symptom-complex.

Osler⁵ summarized some twenty-nine cases. In twenty-five of these cases, abdominal symptoms were present; in eight of them the skin lesions were accompanied by colic only and in fifteen there were in addition, gastric attacks, nausea and vomiting. In eight bleeding occurred. Renal complications were present in fourteen cases. Arthritis was present in seventeen cases. The author says: "The relation of the rheumatic poison to the arthritis and the other lesions is clear enough in some cases, but we cannot say that the arthritis is a hallmark by which we can always recognize the rheumatic poison. A great many of the cases of arthritic purpura or the peliosis (purpura rheumatica) have, I believe, nothing to do with the poison of rheumatism. On the other hand, erythema, with or without purpura and arthritis, may be in children, as are endocarditis, tonsillitis and subcutaneous fibroid nodules, manifestations of the rheumatic poison, links in the rheumatic chain."

In the twenty-nine cases the skin lesions were: Purpura in 5; purpura urticans in 7 (purpura with wheals); angioneurotic edema, 5, with or without erythematous lesions; erythematous lesions in

14 (in 2 alone and in the rest purpura or purpura urticaria). In one family acute circumscribed edema had occurred in five generations and gastro-intestinal crises formed a special feature of the attacks.

During the last year the following two cases came under my own observation.

One, H. W., farmer's boy, aged seventeen, entered the hospital March 9. For three weeks pains in the muscles of the right leg, which lasted three or four days, and have not since returned. Soon after, pains in region of stomach, not influenced by food. Slight nausea and vomiting for first two or three days, none since. No blood. No fever, chills nor nose bleed. In bed most of the time. No cough. On day of entrance, for first time, noticed few streaks of blood in the stools, twice. Bowels regular. Temperature, $99\frac{1}{2}$; pulse, 96; respiration, 30. Presystolic thrill at apex of heart; heart enlarged to the left; good action; systolic murmur all over precordia transmitted to axilla and a suggestive presystolic murmur. Abdomen not distended; tympanitic; tenderness about the umbilicus; no spasm or rigidity here or over the appendix. Upper abdomen somewhat rigid. Not tender nor spastic. On the inner side of the right knee and right foot, several purpuric spots. White count, 36,100; following day, 51,000. March 12, pain in epigastrium without vomiting. Marked abdominal distention. Three days later, still considerable pain in epigastrium with distention. Tenderness in the region of the umbilicus. Stools positive for blood by guaiac test. Purpuric rash now over the abdomen and increased the following day over abdomen, knees and feet. Three days later still severe abdominal pain, also pain in shoulders. Purpura remains the same. Temperature rising to 100 in the evening, normal in the morning. On one of these days surgical counsel advised operation which, however, was postponed. On the 23d, another marked increase of purpura in knees and elbows, with some pain; no marked tenderness or distention. He was fairly comfortable during the day, but pains worse at night. On the 25th, purpura profuse everywhere. Pains in joints and also in the back. From this time the pain diminished and the purpura had nearly disappeared April 8.

Second case, M. S., aged fifteen, entered April 28. Ten days previously had sore throat and slight cough, pains in legs and feet. Small dark red rash (purpura) appeared on feet and ankles; has remained ever since. One week ago severe attack of pain around umbilicus, which doubled him up; has had it more or less since, with acute exacerbations, slight fever, no chills; vomited several times. No blood raised. Three days ago passed small amount of blood by rectum. No nosebleeds. This morning had four convulsions, half an hour apart, lasting fifteen minutes, in which he turned purple; seemed clear between convulsions; no headache; no retraction of the neck; no drowsiness. Bowels constipated. Micturition normal. No blood. Condition stupid; herpes on the lip; soft systolic murmur at apex of heart transmitted to axilla. Moderate tenderness over lower abdomen, especially just below the umbilicus; none over the appendix. Slight rigidity in lower abdomen. Purpuric eruption over both feet, ankles and knees. White blood count, 38,600. Few days later, profuse purpuric eruption on feet, legs, buttocks, back and hands. Abdomen held somewhat rigidly, no special spasm or tenderness. Reflexes negative, no more convulsions. Pain in the abdomen relieved by hot applications. From this time on purpura diminished and, with the exception of slight vomiting at one time, the abdominal symptoms disappeared.

Within recent years several writers have reported similar cases, in which the following may be taken as examples.

Orr⁶ shows a case of transition from simple purpura to Henoch's. A girl when fourteen had an attack of purpura simplex rheumatica lasting ten days, with very slight arthritic symptoms. One year later she had another attack, which began like the former, with petechiae, then erythema with slight swelling of the joints. Two weeks after, abdominal pain with fluid blood from the bowels. For the next six weeks there were repeated cycles, as follows: Patchy appearance of tongue, rise in temperature and pulse, vomiting and diarrhea. In only two of these exacerbations, which occurred once a week, did the patient pass fluid blood.

Peter Davidson⁷ cited two cases. One, a girl of nine; vomiting, severe pain, pit of stomach; later passed large quantity of blood and blood clot. Pain and tenderness several days. Previously had purpura in arms and legs. Second, a girl of six and one half; inflamed mouth and throat, nausea, vomiting and constipation. Third day, purpuric spots on knees and ankles. Three days later, convulsions. Unconscious for several hours. Severe epigastric pain. Enema brought some ounces of blood. Fading purpura seen on knees and ankles. Several fresh crops of purpura in five weeks, with colic. Blood from bowels. Hematuria with blood and epithelial casts. Temperature twice rose to 103. Recovery.

Day⁸ Case presented swelling and edema around the joints; purpura; abdominal colic; vomiting; edema of the lax tissues; subperiosteal hemorrhages; hemorrhages of lungs; albuminuria; hemorrhages from the bowel; hematemesis; large quantities of phosphates in the urine. The dominant symptom disappeared as soon as a new one arose, namely, onset of colic, which was accompanied by relief of joint symptoms; onset of lung condition by cessation of colic, etc. As soon as the lungs were clear, the colic recommenced.

Nobecourt⁹ cites, among other cases, that of a boy of ten. Acute abdominal pain localized at McBurney's point, anxious facies, vomiting, intestinal hemorrhage four or five days. Second, a girl of five and one half, acute abdominal pains, retraction of belly, anxious facies, bilious vomiting but no intestinal hemorrhage. Third, a girl of fourteen; abdominal pains, bloody stools for two days.

Howland¹⁰ reports a case of Henoch's purpura with spinal cord symptoms. Girl of twelve, hematemesis, followed by hemorrhagic spots in the skin, swelling of joints, eyelids; bloody stools; lasted fifteen weeks. After convalescence, return, lasting five weeks. For about a year had frequent headaches; at fourteen third attack of purpura which disabled right elbow. During this year first attack of chorea. Two years later there were symptoms of hemiparetic character affecting the right hand. Anesthesia over limited areas in the right. Hot and cold sensation also diminished. These symptoms are given in great detail and the writer questions whether it was not a case of purpura with spinal cord hemorrhages. Joint condition may have been due to joint hemorrhage or spinal hemorrhage. There is a possibility in his mind, however, of syringomyelia with sensory signs and joint conditions.

The question of the operative interference with many of these cases has presented itself and has been differently answered. Obviously, if the abdominal condition is simply one of localized edema, or of purpura, it can be generally trusted,

as in the cases of my own which I have reported, to do without surgical interference. These conditions may, however, have produced other abdominal changes such as are everywhere recognized to be the proper subject for surgical operation. Especially marked among these is intussusception, which, there is reason to believe, is in many cases produced by a local edema involving a portion of the intestine which sets up violent peristalsis, so that the swollen portion of the bowel is invaginated into the portion next below, thereby producing serious obstructive symptoms. As will be seen later, other grave results may follow. I append a list of cases in which operation was performed, some of which were obviously, in view of the findings, unnecessary.

The first case is one of Sutherland. A boy of five had acute abdominal symptoms, consisting of pain, vomiting and bloody discharges. Abdomen was opened with expectation of finding an intussusception. The first thing to attract attention was an enormously distended bowel (descending colon and sigmoid). The cause of the distention was not very clear but was undoubtedly an angioneurotic edema. A portion of the small intestine, five inches long, was dark from extravasated blood, with thickened blood. Separated about half an inch from this was a circular band of red color, evidently a more recent hemorrhage into the wall of the gut, this dark, thickened portion of the bowel appearing exactly like an intussusception that had been reduced. For about five days after this operation the boy did well, then there was a return of bloody discharge and vomiting, and now, for the first time, appeared a few purpuric spots on the skin which afterwards grew more marked, and the usual relapses characteristic of Henoch's purpura showed themselves.

Burrows.¹¹ Boy of eleven taken sick July 6. Diagnosis, intussusception. Fecal vomiting, blood from the bowel, rigid belly, general tenderness all over the abdomen, no distention or lump. Tenderness in the recto-vesical fold. The abdomen being opened, at first showed nothing abnormal. Then small petechial hemorrhages and some irregular patches of congestion in the ileum were found a few inches from the ileocecal valve. Over this area peritoneum was sticky and without gloss. The author characterizes the operation as a useless laparotomy. Next day small purpuric spots appeared on back of elbow, on buttocks, and on each leg over the tendo Achilles and heel. In a few days there was a general eruption of purpura. It was later learned that on June 26, eleven days before admission to the hospital, the patient had walked lame, legs ached and were stiff. "Lumps and red spots" seen by the mother also on the elbows and buttocks. The boy felt quite well. Four days later this rash spread all over the body. After recovering from the operation, on July 25, there was a recurrence of same abdominal symptoms immediately after eating chocolate. At that time he passed one-half ounce of blood from rectum. Intense pain; followed three days later by another purpuric eruption.

Pybus.¹² A girl sick one week, frequent bloody stools. No vomiting, no tumor. Diagnosis at first was intussusception. Later diagnosis, urticaria of the mesentery. Edematous spots in various parts of the body. As the patient grew no better, abdomen was opened. Spots of congestion and edema of small intestine was disclosed. Abdomen was closed up, after examination of rest of bowel. A few days later she had an attack of purpura.

Harrington¹³ reports an operation in a case in which the diagnosis of angioneurotic edema had been definitely made, but where the duration and severity of the abdominal symptoms seemed to indicate surgical interference. A girl twenty-six years of age had had symptoms which were suggestive of gallstones. Subsequent history showed that those symptoms were due to angioneurotic edema. The first attack was fifteen years ago. Swelling was confined to the hands and feet. She has had these attacks ever since, at decreasing intervals, the longest period of freedom being three months. Last few years, however, they would come as often as once in a fortnight. They affected not only the hands and feet, but extended up to the elbows. The face is less frequently attacked but occasionally becomes deeply edematous. Head swelling reaches maximum in one day, lips puff up quickly and remain swollen for four or five days. A similar swelling has been noticed over the scapulae, buttocks and breast. The abdominal pain was not well defined but extended across the lower part of the abdomen without radiating into the back or shoulder. Attacks usually lasted for twenty-four hours, accompanied by nausea, vomiting and headache. There had never been vomiting of blood. On opening the abdomen nothing was found except engorgement of the intestines with blood, which at first suggested a mild peritonitis. There was no hemorrhagic area in the intestinal walls, but within a short distance of the ileocecal valve, there was a cylindrical enlargement of the ileum $2\frac{1}{2}$ inches long entirely surrounding the gut, increasing the bowel circumference to twice its ordinary size. The swelling was evidently in the bowel wall, was elastic to touch and did not pit on pressure. Lower border of stomach was about half an inch below umbilicus, pylorus admitted tip of index finger. Appendix somewhat thickened and was removed, but on examination was found to be normal. Engorgement of intestines and free fluid were explained by the violent peristalsis brought on in effort to force down the lesion which was actually in the intestinal wall. There was no distention above the lesion. Convalescence was uneventful, but before she was discharged, another attack of skin swelling came on as before.

Morris¹⁴ reports two cases, one of which the writer says was the first case of angioneurotic edema in which it was demonstrated that an edema existed in the mucous membrane of the stomach synchronously with an attack of nausea, vomiting and pain.

Smith¹⁵ reports two cases of Henoch's purpura with abdominal symptoms, in one of which exploratory laparotomy showed visceral peritoneum studded with small ecchymotic spots.

Referring to Osler's caution against the performance of laparotomy for Henoch's purpura, under the error of mistaking it for visceral crises, of appendicitis, intussusception, obstruction, etc., Smith says that the history of two fatal cases of intussusception and one of perforation of the stomach which occurred in this disease, did warrant exploratory laparotomy, and that Henoch's purpura is not, therefore, entirely a medical disease.

Jacobson¹⁶ reports an operation for a case of what appeared to be appendicitis of the usual character. He states that the organ was found to present numerous areas of hemorrhage into its substance. Four days after operation the patient developed cough and raised a large quantity of bright red blood. The same night, epistaxis. The next day began to appear spots of purpura all over the body. The case was one of purpura of which the first manifestation apparently was the hemorrhage into the appendix, which simulated appendicitis of the ordinary type.

Cook,¹⁷ on the other hand, operated upon a patient for intussusception in which none was found. The case was a boy, aged twelve, who, three days after attack of rheumatism with purpura, developed vomiting, pain in the region of the navel. The following day hematemesis, diarrhea, tenesmus, blood and mucus in the stools. Dullness and mass felt in left side of abdomen. Stools were frequent and bloody. When the abdomen was opened what at first seemed to be an invaginated intestine was a portion of the small intestine considerably thickened for a distance of six inches; above and below this were normal intestine. Thickening was due to extensive extravasation of blood beneath the intestinal peritoneum. This felt like "worms in a bag." A few inches lower down was a second piece of intestine of precisely similar appearance. No peritonitis was present. Patient died of bronchial pneumonia. Post-mortem examination showed patch of purpuric staining of the right ventricle.

Nobécourt (*loc. cit.*) quotes a case of Calmers. Child of fourteen presented severe abdominal pain, especially at McBurney's point, with bilious vomiting. Diagnosis of appendicitis. Laparotomy showed bloody appendix and hemorrhagic spots in intestinal peritoneum. There were also petechiae upon the elbows and knees. There was a good result from the operation, but a new abdominal crisis developed four days later.

Tonking¹⁸ described a case of intussusception produced by Henoch's disease successfully treated by operation. A boy, five and one-half years, taken sick June 2, earache and vomiting. Temperature rose next few days to 103. June 8, edema of scrotum was noted. June 10, pain in joints, preventing motion of right arm. Hands swollen. June 12, edema of the eyelids. June 13 and 14, purpura of the buttocks. June 18, great abdominal pain; vomiting. Swelling close to the navel detected within two hours. No blood from the bowel. Operation the same afternoon showed intussusception of small intestine several inches in length. Reduction was easy. Apex of intussusception looked like blood clot. Whole tumor was infiltrated with blood. Patient recovered.

Another case, of J. L. Morse and Stone, in a girl of seven. Purpura of the legs, diarrhea; two days later, melena and pain in right side of belly. Operation disclosed ileocecal invagination and seven days later same symptoms recurred without invagination.

Finally, operative cases have occurred in which Henoch's disease has produced perforation.

One case, quoted by Nobécourt; operation on boy of three. Operation revealed an ileocecal invagination which was reduced. Death occurred a few days after and the autopsy showed an enteric invagination with perforation.

Contrasted with this last group of operative cases are the following instances where lesions were produced by Henoch's purpura in which operation was not performed and where fatal result occurred.

The first of these is one of Sutherland's cases, which is to be contrasted with the one previously cited by the same writer, where an apparently unnecessary operation is performed.

In this second case, a girl of seven had a full clinical picture of Henoch's purpura with recurrent abdominal attacks. Finally came an attack more prolonged than usual, but with no signs of intestinal obstruction until the very end. She died in a convulsion, and the autopsy showed peritonitis with an intussusception of the sigmoid and part of the ileum for four inches into the colon, and a rupture of the bowel. The fatal attack was

induced by hemorrhage into the wall of the colon near the cecum, which led to paralysis of part of the intestine and irregular muscular contraction of the neighboring part.

Another case of Nobécourt; a girl of fourteen, who died after an illness of twenty days. On the 14th of January she had gastric pain; two days later, pains in the knees and purpuric spots; three days later, with high temperature, purpura had involved the thighs and legs. Four days from onset of pain, there was bilious vomiting, hyperesthesia with rigidity; red blood passed from the bowels and red blood was vomited. Two days later the old spots had faded, but new ones had appeared, with blood in the urine. Eight days from the onset of the sickness, there was hematemesis and melena, and for the following five days new purpuric spots appeared, with albuminuria. Thirteen days from the onset, the abdominal pain was much increased and there was muscular resistance. Four days later pain had increased. Especially on the left there was muscular contraction of the abdomen. Temperature had risen to 40 C. This was followed two days later by meteorism, the facies became drawn, and there was vomiting of green material. On the twentieth day of the illness, death occurred. The autopsy showed general suppurative peritonitis; extremities of small intestine showed lesions; lower end of the ileum, an engorgement 30 cm. long, and in the duodenum and jejunum, black in color, there was a perforation size of pin head, 15 cm. from the pylorus.

A case of Silverman, quoted by Nobécourt. Child of ten, some days after onset of purpura, had colic, hematuria and melena, which ceased after two days. Fifteen days later there was a new attack with symptoms of acute peritonitis, and death followed operation. Autopsy showed purulent peritonitis consequent upon a gastric perforation.

This last group of cases indicates the extreme gravity which may occasionally attach to Henoch's purpura. In the group of operative cases, some of the operations were apparently unnecessary, but on the other hand there may develop grave lesions which would have been fatal if unrelieved, and the final group of cases, in which no operation was performed, showed similar lesions which did prove fatal.

These facts make it evident that the question of surgical treatment in Henoch's purpura is a very important one and, while we should probably in the majority of cases recognize that the lesion is one which will subside in the intestine, as it usually does in the skin and other mucous membranes, we are not to assume that surgical interference may not, in certain cases, be urgently and promptly required.

REFERENCES.

- ¹ Lancet, Feb. 14, 1903.
- ² Jour. Cutan. and Genito-Urin. Dis., November, 1892.
- ³ BOSTON MED. AND SURG. JOUR., March 5, 1891.
- ⁴ *Ibid.*, May 14, 1891.
- ⁵ Am. Jour. Med. Sc., vol. cxxvii, p. 1.
- ⁶ Practitioner, 1903.
- ⁷ Liverpool Med.-Chir. Jour., July, 1910.
- ⁸ Brit. Med. Jour., Nov. 13, 1909.
- ⁹ Jour. de méd. de Paris, 30, avril, 1910, p. 307.
- ¹⁰ Jour. Nerv. and Ment. Dis., vol. xxxvii, April, 1910, p. 237.
- ¹¹ Brit Jour. Child. Dis., 1904, vol. i, p. 28.
- ¹² Lancet, Oct. 9, 1909, p. 1074.
- ¹³ BOSTON MED. AND SURG. JOUR., March 30, 1905.
- ¹⁴ Am. Jour. Med. Sc., vol. cxxviii, p. 812.
- ¹⁵ Med. Rec., 1904, vol. lxvi, p. 890.
- ¹⁶ *Ibid.*, Feb. 7, 1903.
- ¹⁷ Lancet, November, 1909.
- ¹⁸ *Ibid.*, Dec. 10, 1910, p. 802.