(for the pelvis) and epigastric. Two recovered, but one of these had to be drained in the right lumbar region after a few days. In five cases the drainage was suprapubic, epigastric, and right lumbar. Of these, three recovered. In two cases the drainage was epigastric only. Both died. Such evidence as can be gathered from these cases indicates that drainage should be suprapubic (for the pelvis) and right lumbar for the right kidney pouch. But I would suggest that the evidence I brought forward earlier in this paper with regard to the course taken by fluid points very strongly to the right lumbar and the suprapubic regions as the logical sites for drainage-tubes.

The character of the fluid extravasated has been held to give an indication as to whether it be the duodenum or the stomach which has perforated. In the cases which I have seen the character of the fluid gave no help whatever. Bile-staining may be present in gastric or duodenal cases; ill-digested particles of food are present in both; the reaction is markedly acid in the gastric perforation, but so it was in the cases of duodenal perforation in which I have tested it. In fact, it is in the main the gastric contents which escape through a hole in the duodenum. It is true that in some cases the fluid with the onset of peritonitis may become neutral or even alkaline, but this applies equally to both classes.

In concluding, I wish to thank the staff of St. Mary's Hospital for kindly allowing me to make use of their cases. Since this paper was written four other cases of perforated duodenal ulcer have been operated upon at St. Mary's Hospital with three deaths and one recovery.

Spanish-place, W.

CASES OF ERYTHEMA SCARLATINIFORME SENT INTO HOSPITAL AS SCARLET FEVER.

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DURING the last four years we have observed steady progressive improvement as to the accuracy of diagnosis of infectious diseases amongst the cases sent into the infectious diseases hospital, and especially with regard to scarlet fever, but there is still considerable scope for the display of diagnostic acumen in some of the aberrant forms of acute infectious diseases and none the less in those cases where the clinical phenomena manifested resemble very closely acute infectious diseases. It is not our intention to cast reflection upon the diagnostic capabilities of our medical *confrères*, nor is it the object of these remarks to put before the profession an uncommon or rare disease but rather to be a reminder that an incorrect diagnosis has not rarely resulted in long and severe suffering and in many instances caused accidental infections leading to death. Cases not infrequently occur which in many particulars very closely resemble scarlet fever, both in the acute and convalescent stages, but as the profession has at the present time neither chemical nor bacteriological methods to aid them in the diagnosis of this disease, such as can be applied in the case of typhoid fever, diphtheria, &c., one oftentimes has simply to isolate the case and to await developments. During the last five months two cases have been received into hospital suffering from erythema scarlatiniforme which have been notified to the medical officer of health as cases of scarlet fever, and since erythema scarlatiniforme may so closely simulate scarlet fever in its early exanthematous stage as to deceive the most careful observer, we feel that we need not apologise for putting forward the notes of these two cases.

In the diagnosis of scarlet fever there is a tendency shown by practitioners to rely too much upon the character of the rash and to pay too little attention to the consideration of other and equally important factors in the diagnosis—namely, the condition of the tongue (and whether that condition is in the relation which it should bear to the rash and

other signs, having regard to the time which has elapsed from the commencement of the illness), the general characteristics of the throat, the character of the onset, and the past history of the individual with respect to infectious sickness, exposure to infection, age of patient, &c., and, moreover, we are convinced that the two cases which follow, if they had been considered on the above lines, would have been missing from that column of the annual report which deals with cases sent into hospital wrongly diagnosed, and more especially the second of the two cases.

CASE 1.—A male, aged eight years, was admitted to hospital on Nov. 20th, 1905, as a case of scarlet fever. The history given was that he commenced with a sore throat three weeks before and that he had previously had scarlet fever and was in this hospital just 12 months previously for ten weeks. He had had measles when a baby but no other illness since. His temperature on admission was 97° F. On examination he was found to be desquamating upon the whole of the trunk and there were areas of erythema in those portions of the skin where desquamation was completed. The desquamating skin was in large flakes but much thinner and whiter than that found in scarlet fever. The skin of the extremities was quite normal. The throat, the tongue, the nose, the ears, the glands, and the urine were also normal. He was discharged on the tenth day quite free from desquamation and quite well. 12 months before the boy had been in hospital suffering from a moderate attack of simple scarlet fever when, on admission, he had a typical fading general rash, a raspberry tongue with a hyperæmic condition of the throat, and follicular tonsillitis. During convalescence he had otorrhœa, which, however, subsequently cleared up, and he was discharged from the hospital after a stay of 71 days.

CASE 2.—A male, aged 23 years, was admitted into hospital on Jan. 13th, 1906, notified as scarlet fever. The history given was that he became ill two days before with a rash on his chest and a slight feeling of soreness and stiffness about his throat. His temperature on admission was normal. The history he gave was that he had had several similar attacks, that he always peeled profusely, and that he had been in this hospital twice before in the same condition and once in one of the Liverpool city hospitals. On giving this history he was isolated and on examination he was suspected to be suffering from erythema scarlatiniforme. His condition was as follows. On the front and back of the chest there was a well-marked erythematous eruption, but it was not papillated, and the rash on the front of the chest was more marked than on the back. The erythema extended from the suprasternal notch (where it was sharply defined) to about the level of the umbilicus, where it gradually merged into a normal skin. The skin of the extremities was quite normal as was that also of the trunk below the level of the umbilicus. The tongue was slightly reddened and was covered with a thin grey coating but was not characteristic of any disease. The throat was very slightly reddened and the ears, the nose, the glands, and the urine were quite normal. On looking up the record of his previous admissions we found that the diagnosis on both occasions had been amended from scarlet fever to erythema scarlatiniforme. Forty-eight hours later the skin of the whole of the trunk was desquamating in large, thin, white flakes, not only the parts which were on the first examination erythematous, but also the remaining parts of the trunk where no erythema had been observed. The desquamating skin could be readily swept from the body by rubbing lightly with the finger but the most important feature of the condition at this stage was that there were larger areas of erythema, showing a peculiar glistening and greasy appearance, of those parts from which the superficial desquamation had taken place. Next day symmetrical patches of desquamation were seen in front of the elbow-joints, leaving the same erythematous base as observed on the trunk. Later in the day the hands and the adjacent parts of the wrists for about two inches also began to desquamate. The lower extremities did not show any signs of peeling and five days later the man was discharged from the hospital perfectly well.

With regard to the etiology of the disease, there is nothing in the history of either of the two cases to help us. The little boy was fairly well nourished and intelligent and had not suffered from any disease except measles and the attack of scarlet fever 12 months before. The man had not suffered from any other disease but the one he was sent in for, and he said that it was his eighth attack, the last being a few months before, when he did not go to a medical man

because he was always notified as suffering from scarlet fever and he was usually compelled to go into hospital, which he did not like. The affection is said to occur both in a mild and a severe form; in the case of the boy the attack was a mild one, there being on admission no trace of anything abnormal except the desquamation. The adult had had a moderately smart attack as he appeared to have begun with some amount of sore-throat, headache, and general malaise.

The diagnosis of these cases may present difficulties, and especially so if a casual examination of the rash alone be relied upon, for the rash may be general, and if, in addition, it be seen in an unfavourable light may very closely simulate the rash of scarlet fever. Mr. Malcolm Morris in his book on "Diseases of the Skin" writes thus of the diagnosis of erythema scarlatiniforme: "The average duration of the disease is from two to six weeks but in some cases lasts longer. Two types of the erythema may occur and can be recognised clinically, one running a more or less definite course and disappearing after a few weeks and the other type a severe and more prolonged one." Relapse is not uncommon, a fresh crop of eruption coming out before the first has disappeared. Erythema scarlatiniforme shows a marked tendency to recur (*vide* notes on second case), sometimes every year and sometimes at shorter intervals. (In the second case the longest interval was just over four years and the shortest about four months.) "The disease derives its chief importance from its resemblance to scarlet fever which may be so close that the most capable observer may be unable to give a definite opinion as to the nature of the rash during the first few days. The most striking point of distinction is the early commencement of desquamation in erythema scarlatiniforme, which may last for several weeks and sometimes indefinitely. In the case of a person who has had previous attacks the history is helpful, but if there is any doubt the case should be isolated. It is also very probable that some of the cases of so-called recurrent scarlet fever are really due to this disease."

In conclusion, we would again call attention to the important points in differential diagnosis, three of which should be borne in mind—viz., the very early onset of desquamation, the desquamation taking place while the erythema is in the florid stage, and thirdly, the erythematous base observed after desquamation and which remains for some time, with its peculiar glistening and greasy appearance.

Booth.

FATAL HÆMORRHAGE IN OPERATIONS UPON THE CHEST WALL FOR EMPYEMA.

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THE removal of serous fluid from the chest in pleural effusion is usually not a serious operation, and yet, as indicated by me,¹ serious symptoms may arise and even death may occur in cases where puncture of the thoracic wall has been made either for diagnostic or curative purposes. The experience of other physicians expressed in the pages of THE LANCET and elsewhere since then shows that this untoward event is not so rare as at first sight it appears. To Dr. George Carpenter belongs the honour of having first called attention to these risks.² In England Dr. A. E. Russell's paper was one of the earliest communications upon this subject. In the *British Journal of Diseases of Children* for October, 1905, Dr. J. H. Wilks reports a fatal termination to a case in which puncture of the chest wall to evacuate pus was followed by hæmorrhage through the needle and by the mouth. An interesting review of the subject appears in THE LANCET of Dec. 16th, 1905, p. 1802, in the form of a letter from Dr. J. M. Fortescue-Brickdale. To what I published on sudden death from exploratory puncture of the chest I am now desirous of adding a few remarks upon the occurrence of fatal hæmorrhage in patients whose chest wall had been incised in order to give vent to pus

accumulated within the pleural cavity. I shall preface my remarks by giving briefly the details of my last case—one of double pleuro-pneumonia followed by empyema and accompanied by diplococcal arthritis. The patient died from hæmorrhage a few hours after incision of the chest wall.

A young man, aged 19 years, was seen by me in consultation with Dr. J. T. Dunlop of Newcastle on the fifth day of the illness which had begun with a rigor followed soon after by pain in the chest and difficulty of breathing. Two days afterwards there were cough and the expectoration of a tenacious rusty-coloured sputum. When I saw him he was extremely ill, he had an anxious expression, and there were well-marked herpes at the left angle of the mouth and a painful swelling of the left wrist-joint. The pulse was 126, the respirations were 46, and the temperature was 102·5° F. There were dulness on percussion of the chest at both bases, especially posteriorly, well-marked tubular breathing, and here and there coarse friction sounds; also small crepitations were heard over the base of the left lung in front. The vocal resonance was increased. In the expectoration diplococci were found. I had the patient removed into the Royal Infirmary and for the first two days he seemed to improve. The painful swelling of the left wrist subsided, only, however, to reappear several hours afterwards. With the return of the arthritis there was also evidence of the pleuro-pneumonia having extended. On the evening of the eighth day of the illness the temperature suddenly fell from 103° to 98°, the pulse from 138 to 100, and the respirations from 56 to 36. The patient expressed himself as feeling more comfortable but the favourable condition was not long maintained. Two days afterwards the temperature rose to 101°, the pulse to 140, and the respirations to 60. My house physician put a needle into the right chest and drew off a syringeful of pus. Two hours later, under local anæsthesia induced by ethyl chloride, the right chest was incised and forthwith there escaped blood with flakes of purulent lymph but the pus was only limited in quantity. A very short rubber tube was inserted but the patient's pulse became small and rapid and the hæmorrhage continued partly into the pleural cavity and partly through the tube. The patient died 13 hours after the operation from exhaustion and the continued bleeding.

At the necropsy the incision in the chest wall was carefully examined without revealing any injury to the intercostal artery. Subsequently this vessel was dissected out in its entirety and found to be quite intact. The lung was collapsed at one part and covered with purulent lymph. No injury to the surface of the lung could be detected. The lower part of the lung was consolidated. There were consolidation of the base of the left lung, signs of recent pleurisy, and some purulent lymph. The pericardium contained a few ounces of clear fluid. The heart was normal; the brain was slightly cedematous. The left wrist-joint contained pus, of which a culture was made at the College of Medicine by Dr. Horace B. W. Paige who reported the presence of Friedländer's diplococcus and the complete absence of the pneumococcus of Fränkel.

Of fatal hæmorrhage following incision of the chest in empyema I have had experience of two other cases. The first was several years ago, when my house physician, in incising the chest wall of a young sailor, gave vent to a large quantity of pus. At the same time there occurred very free bleeding which was uncontrollable and from which the patient died on the following day. At the post-mortem examination no explanation was found of the hæmorrhage. My third patient was a woman, aged 42 years, who was suffering from an encysted empyema which was discharging itself by the mouth. A needle having been inserted into the chest and pus found, one of my surgical colleagues incised the chest wall. A few ounces of pus escaped, accompanied by a fairly large quantity of blood. Almost immediately afterwards hæmoptysis in addition occurred. Through the external wound there escaped pus and a diminishing quantity of blood for the next three days, when all at once very profuse hæmoptysis occurred and the bleeding from the wound recommenced. The temperature now rose rather quickly, breathing became difficult, and the patient was extremely restless. Death followed after another copious hæmorrhage from the lung and from the incised wound in the chest wall.

The pathology of these cases is obscure. Naturally injury to the lung or to the intercostal arteries suggests itself, a suggestion which the suddenness and the profuseness of the

¹ THE LANCET, Jan. 2nd, 1904, p. 26.

² American Journal of the Medical Sciences, October, 1893.