CASES OF
RUPTURE OF THE LIVER OR SPLEEN.
WITH REMARKS.

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THE following Cases came under my notice whilst House-Surgeon to St. George's Hospital in the year 1845.

CASE I.—*Rupture of the Liver and Right Lung. Death almost immediate.*—John Pratt, æt. 25, was brought to St. George's Hospital on the 4th of April, 1845, having fallen from a scaffold about thirty feet high, a short time previously. He was perfectly sensible when admitted; but was in a state of extreme collapse, with very exsanguine features, and complained of intense pain in the abdomen, which was swollen and tense: there was also much difficulty of breathing, with dulness over the right lung. He never rallied; but died in about an hour.

On examination of the body after death, a large quantity of blood, not coagulated, was found in the cavity of the peritoneum; it had proceeded from an extensive laceration of the liver, penetrating deep into the structure of this organ, and principally situated at the upper surface of the right lobe; the structure of the liver was healthy.

The cavity of the right pleura also contained a large quantity of blood, and the right lung presented two very

extensive lacerations penetrating deep into its structure. None of the ribs were fractured; but the costal cartilages, from the fourth downwards, were separated from their connections with the sternum, and in one or two places the parietal pleura was torn through.

The left arm and leg were also fractured.

CASE II.—*Extensive Rupture of the Liver, with Effusion of Blood and Bile into the Peritoneum. Death on the third day.*—James Lucas, æt. 40, admitted into St. George's Hospital under the care of Mr. Cutler, May 20, 1845. This patient, shortly before his admission, was knocked down by a horse, and the wheel of a carriage passed over his belly. He was in a state of extreme collapse, with bloodless features, and complained of intense pain over his abdomen, which was considerably distended; some of the ribs on the right side were felt to be fractured. He was placed nearly in a sitting posture, by means of a bed-chair;—a roller applied round the ribs, and a draught containing morphia ordered every four hours.

The pain gradually subsided, though he remained very exsanguine, and he appeared to be gaining some strength, when he died suddenly, three days after the accident, on attempting to raise himself up, to get upon a bed-pan.

The post-mortem examination disclosed the following appearances:—There was a bruise over the anterior wall of the abdomen. The cavity of the peritoneum was filled with a large quantity of blood, the greater part of which was fluid. The convolutions of the intestines were glued together by the fibrin of the extravasated blood, which had partially lost its colour, and formed slender adhesions, which were easily destroyed by separating the parts. After the removal of the blood and fibrin, the parts underneath were found to be discoloured, but presented no increase of vascularity. There was an extensive rupture of the liver, extending through the whole thickness of the right lobe, as well as through the lobulus Spigelii. The ruptured parts were well adapted to each other, and pretty firmly united

by the fibrin of the extravasated blood. The whole of the blood contained in the peritoneum was deeply bile-tinged. The other abdominal viscera were healthy.

The fourth, fifth, and sixth ribs on the right side were fractured near their posterior extremities.

CASE III.—*Extensive Laceration of the Spleen, with slight Laceration of the Liver. Death on the third day.*—John Jolliff, æt. 32, admitted into St. George's Hospital, August 14th, 1845, under the care of Mr. Tatum. This patient was reported to have fallen from a height of thirty feet, striking his side against a pole. When brought in, he was in a state of complete collapse, with blanched skin, and complaining of excruciating pain in the abdomen, which was hard and swollen; one of the lower ribs on the left side was found to be fractured. He was placed in bed, with his shoulders raised on a bed-chair, and doses of morphia in camphor mixture given occasionally. He still continued very pale, and in the evening was slightly sick.

The pain gradually subsided, and with the exception of being troubled occasionally with flatulence, he appeared to be going on well till the night of the third day after the accident, when, contrary to the directions which had been given, he got out of bed for the purpose of having it made. He was almost immediately seized with faintness, and died in half an hour.

Examination after Death.—The cavity of the abdomen contained a large quantity of bloody fluid, mixed with dark coagula of blood; these had proceeded from an extensive laceration of the posterior margin of the spleen, which was of a pale colour, soft and grumous, and in several places mixed with circumscribed extravasations of blood. A small laceration also existed at the upper surface of the left side of the liver near the spleen. The other viscera were healthy.

The tenth rib on the left side was fractured in two places.

CASE IV.—*Extensive Ruptures, perfectly united, about the*

Liver and right Kidney. Death from Fracture of the Spine, three weeks after the accident.—James Doyle, æt. 38, admitted into St. George's Hospital under the care of Mr. Hawkins, having fallen from a hay-rick about thirty-five feet high, striking his back against a log of wood. There was complete loss of voluntary motion and sensation in the parts below the nipples of the breast, respiration being carried on by means of the diaphragm.

The right arm was completely paralysed, and the left partially so: he complained of much pain in the arms, and also in the abdomen (which was a little distended), although the parietes were quite insensible. He was also in a state of considerable collapse, which continued for several hours.

The urine, which was regularly drawn off, contained considerable quantities of blood. Sloughs gradually formed upon the back and other parts subjected to pressure; the respiration became impeded, and he died exactly three weeks after the accident.

Sectio Cadaveris.—The body of the seventh cervical vertebra was found broken up into several fragments, blood was effused upon the external surface of the spinal dura mater, and the spinal cord in this situation was softened and diffuent to the extent of about an inch and a half. The lungs were gorged with red frothy serum, and their tissue a little softened.

The cavity of the peritoneum contained a little bloody serum, and some blood was found extravasated in the sub-peritoneal areolar tissue of the right loin, extending from the right hypochondrium into the pelvis; this extravasation had evidently existed for some little time, as the blood had lost a large portion of its colouring matter. An extensive rupture was found on the upper surface of the right lobe of the liver; this rupture, which measured five inches in length, was perfectly united, with the exception of some few points where the peritoneal coat still remained broken; but no lymph was found on the serous membrane, which retained its polished appearance. The rupture did not extend very deeply into the organ. Another smaller rupture, also per-

fectly united, was found in the neighbourhood of the large one.

Several ruptures, beautifully united, but not extending more than two lines in depth, were found on the anterior surface of the right kidney; no inflammation existed about this organ, or in the surrounding areolar tissue.

CASE V.—(*Supposed*) *Rupture of the Liver.* *Recovery.*—Emma Mason, æt. 6, was admitted into St. George's Hospital under the care of Mr. Keate, on the 5th February, 1845. She was in a state of complete collapse, but sensible, and complaining excessively of extreme pain in the abdomen, which seemed full and tense:—there were some slight graizes of the skin over the situation of the liver, produced by the passage of the wheel of a cart over the belly shortly before admission.

The patient gradually recovered from the collapse, but remained very pale and exsanguine, and continued to complain for some days of pain in the abdomen, especially about the right hypochondrium; no febrile symptoms, however, supervened, and the pain gradually subsided. She was removed home by the mother about the ninth day after the accident. I continued to see the child, who remained weak and pale for some time after the accident, but gradually regained her health and strength.

REMARKS.—I have ventured to bring these cases before the Society with the view of illustrating a kind of accident of not very infrequent occurrence, as is shown by the fact that these five, together with four other cases, came under my care as House-Surgeon in St. George's Hospital during a single year.

The general character of the symptoms in all the cases which I saw, was very similar:—Extreme collapse, combined with the very exsanguine appearance of the patient; intense pain in the abdomen, especially in the region of the liver or spleen, coming on immediately after a severe blow in that situation; together with the more or less distended state of

the belly, the distension not being entirely tympanitic ;—were usually sufficient to induce me to suspect that such an injury had occurred. That the pain which is usually so much complained of in the first instance is not inflammatory, is, I think, shown by the first four of these cases ; for in these instances, though some days had elapsed from the time of the injury, no appearance of inflammation was found ; the pain being due, I believe, at first, rather to the laceration and sudden stretching of the peritoneum, largely supplied as it is with nerves from the sympathetic system.

The principal point of interest, however, about these cases, is, I think, as respects the prognosis. This, of course, is very unfavorable, but still I believe that the injury, if of moderate extent, is not necessarily fatal ; this, I conceive, being satisfactorily shown by the fourth case, which appears to me to be a very interesting one, as, in this instance, an opportunity was afforded, by the patient dying from the effects of a totally distinct injury (fracture of the spine), of demonstrating, by a post-mortem examination, that the liver, as well indeed as the kidney, had been lacerated, and that union had taken place, without, apparently, any amount of inflammation having been set up.

I believe fully myself that the liver had also been ruptured in the fifth case ; and such was the opinion expressed at a time when there appeared every probability of the child dying. As, however, the patient recovered, and no opportunity, consequently, was afforded of demonstrating that such an injury had actually taken place, this case is not of so much value as the previous one, as many might fairly doubt whether some error had not been committed in the diagnosis.¹

¹ Since this paper was read at the Society, Mr. Macilwain has directed my attention to two cases of incised wounds of the liver, which, although not exactly in point, are interesting.

One (recorded by Fab. Hildanus) of a Swiss, who received a wound with a broadsword ; hæmorrhage *ad deliquium* followed, and the surgeon, finding a piece of the liver protruding at the wound, removed it. The man seems to have had a difficult, but still a perfect, recovery. He died three years

With regard to the treatment, it was directed to the following points:—

1st. Instead of hastily administering brandy and other stimulants, rather to favour the state of collapse, guarding, of course, against its going too far, in the hopes of checking the hæmorrhage at the time, and allowing coagulation to take place so as to arrest it in a more permanent manner.

2d. To keep the patient in a state of the most perfect rest, not allowing him to make any exertion himself, and to place him in such a position that breathing might be carried on with the least possible disturbance of the abdominal viscera. The bowels also ought not to be disturbed for some days.

In the Second and Third cases related, it was owing to some imprudence on the part of the nurse or the patient, that fresh and fatal hæmorrhage appeared to have occurred.

And 3dly. To prevent the patient from tossing about, as he is inclined to do from the violence of the pain, and so tending to produce fresh bleeding, opiates were freely administered. Of these morphia, given in full doses, with a little

afterwards of fever, when the remaining portion of the liver was found to be healthy.

The other case was related by Mr. Scrivens at the London Medical Society in 1828. A man stabbed himself with a carving knife: he bled *ad deliquium*; but rallying, went on very well for eleven days, when he went out and drank freely of spirits. Peritonitis supervened, which proved fatal. On examination there was found a “considerable” wound of the liver perfectly healed.

I might also refer to some experiments on rabbits performed by Dr. Monro, as quoted in Hennen’s ‘Military Surgery,’ in which it appeared that considerable portions of the liver might be removed without injuring the health of the animal, the wounds cicatrizing as in other parts.

Mr. Macilwain observes very justly, that so many of these cases prove fatal from adventitious causes, that it is extremely desirable to adopt every means of improving our diagnosis; this, he considers, would be materially assisted if those varieties which are observed in the nature, duration, and other details of that stage, which we now designate by the general term “collapse,” were more particularly recorded.

ether and camphor mixture, if the collapse were excessive, seemed to agree the best.

I may mention, in conclusion, that I have looked over several books upon the subject, but am not aware that any case has been published to prove that union has actually taken place after rupture of the liver or spleen, without any external wound.