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LIVER INJURY INVOLVING RIGHT HEPATIC ARTERY LIGATION, COMPLICATED BY SURVIVAL

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ON THE evening of December 1, 1958, a 26-year-old previously healthy lay brother of a seminary was crushed against some wooden posts of a corral by a bull. He was able to extricate himself by climbing the fence and was then given aid and brought in to the Notre Dame Hospital, North Battleford.

Examination on admission revealed signs of intra-abdominal bleeding, though no fractures were detected nor was there any significant fall in blood pressure. Along with resuscitative measures laparotomy was performed. At operation there was evident intraperitoneal bleeding, and a large split was found in the right lobe of the liver extending up through the central tendon of the diaphragm and the parietal pericardium. The damage was repaired by sutures, but to control the bleeding from the right lobe of the liver ligation of the right hepatic artery was found to be necessary. Retrospectively, we consider that it was a mistake then not to insert drains, the abdomen being closed by interrupted sutures.

The immediate postoperative course was stormy and the patient remembers little of day-to-day events. Signs and symptoms of ileus and bile peritonitis came on slowly, associated with a fall in hæmoglobin value to 11.55 g. per 100 ml., and a rise of serum bilirubin level to 3.3 mg. per 100 ml. and urea to 56 mg. %. Intravenous therapy maintained kidney function adequately.

A second laparotomy was performed on December 17, 1958. Six litres of bile-stained ascitic fluid was suctioned off and a general plastic peritonitis noted. Dilated and twisted loops of small intestine were disentangled and a Miller-Abbott tube was threaded into the duodenum. Penrose drains were now placed in the pouch of Morison and in the pelvis. At this time the right lobe of the liver appeared pale and somewhat green, but liver biopsy was not deemed suitable. In view of the considerable remaining distension, the abdomen was closed with interrupted tantalum wire sutures.

During the next two months his condition remained perilous. Weight loss continued and amounted to over 28 lb. Feeding was never satisfactory nor did his bowels function normally. Even with enemas, urecholine and pitressin, colonic function was minimal. Serum bilirubin level rose to 8.6 mg. % and then fell to 1.4 mg. %. Anæmia persisted and the white cell count fluctuated. The total proteins varied between 4.8 and 6.6 g. % with an almost equal albumin to globulin ratio. These figures were affected by day-to-day therapy with blood, serum albumin, and electrolyte solutions.

Shortly after the second laparotomy, signs developed of pus beneath the left leaf of the diaphragm, associated with a sterile left pleural effusion up to the second interspace, pericarditis, and atelectasis of the right lower lobe. In view of his critical condition the abscess was needled and aspirated through the 9th intercostal space posteriorly in the mid-scapular line. Two aspirations over five days produced 400 c.c. of creamy pus which grew a pseudomonas, slightly sensitive to polymyxin E only. Aerosporin was given in a daily dose of 100 mg. intravenously for nine days. At final laparotomy little evidence of this abscess was seen. The signs of sub-diaphragmatic abscess resolved and a tender mass developed in the hypogastrium and left iliac fossa. This mass disappeared after passage of a large quantity of purulent urine. Only after this event did his bowels start to move spontaneously and oral intake of food increase.

Toward the middle of February, vomiting and jaundice recurred along with leukocytosis, pyrexia, and pain and tenderness in the right hypochondrium. Hæmoglobin value 11.2 g. %; bilirubin 5.50 mg. %; total proteins 7.0 g. %; albumin 3.6, globulin 3.4 g. %. A third, and we trust final, laparotomy was undertaken on February 18, 1959; large inflammatory lymph nodes obstructing the common bile duct were noted in the porta hepatis, and an abscess in the right paracolic gutter was found and drained. Cholecystotomy was also performed. At this time a biopsy of the right lobe of the liver showed regeneration of hepatic cells with inflammatory changes in portal triads; a portion of liver tissue showed gross destruction, scarring and small areas of necrosis. Hereafter convalescence was uneventful and sustained. Appetite increased, and by discharge on April 30, 1959, he had gained 24 lb. At this time the blood picture and protein and bilirubin values were normal. A previous bromsulfalein test had shown 27% retention at 30 minutes, and this was now 5%.

We remain astounded at the fortitude and faith of our patient through five months of varying misfortune.

SUMMARY

The purpose of this short clinical description, unencumbered by the minutiæ of day-to-day events, is to record an instance of liver injury in which right hepatic artery ligation was performed to control hæmorrhage; and to outline the major events during recovery and convalescence.

All of us are intensely grateful to the patient's family and his order for their constant support, and to the Sisters of Charity of Providence and the entire nursing staff of the Notre Dame Hospital for their unswerving help. We thank Dr. W. H. Houston for the pathology reports.

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