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TUMOR OF THE LIVER IN WHICH REMOVAL WAS ATTEMPTED.

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M. F., aged sixty years, was admitted to the Woman's Hospital May 24, 1892, with the following history:

From girlhood she had enjoyed almost uninterrupted health until a comparatively recent time, when she suffered a good deal with indigestion and pain under the right shoulder and left breast. She was a married woman and had borne six children. About four months before applying for treatment she noticed, when undressing at night, a lump in the right side of the abdomen about as large as a fist, which seemed very hard. This growth had, she thought, increased very rapidly, and had extended somewhat to the left side of the abdomen; it was the seat of some tenderness on pressure. The notes, however, do not seem to indicate that she suffered any very great inconvenience from this abnormal condition.

The physical examination of the patient showed nothing abnormal in the lungs or in the heart, except that the latter was rather weak. The urine contained no albumin or sugar; was acid in reaction; had a specific gravity of 1015, and was voided to the amount of thirty ounces in twenty-four hours. It contained amorphous phosphates and uric acid. She had no jaundice. Examination of the pelvic organs showed nothing especially wrong. Palpation of the abdomen disclosed a hard, smooth mass in the right hypochondrium, which did not seem to extend back into the kidney region, and was so prominent anteriorly that it made a distinct elevation of the abdominal parietes, which was evident on mere inspection. The abdomen was not tympanitic, and showed no evidence of intra-peritoneal fluid. The tumor was localized and moved upward and downward during the respiratory act. It seemed, on careful investigation, to be probably connected with the liver, though this diagnosis was not definitely determined. An exploratory incision was recommended and carried out on June 3d, with the ordinary aseptic precautions observed in laparotomy cases.

An incision in the middle line was made, and extended for about seven inches, one-half of which was above and the other half below the umbilicus. Upon opening the peritoneal cavity I found in the right lobe of the liver a tumor resembling in shape a flattened cobble-stone, circular in outline and about three inches in diameter. It was perhaps an inch and a half thick,

and located in the anterior portion of the right lobe of the liver, involving the edge, which was thickened by the infiltrated growth. The mass lay directly above the gall-bladder. There were no adhesions between the tumor and the intestines, omentum, or abdominal wall. The limit of the healthy liver tissue surrounding the tumor was readily discernible, because the growth, though not incapsulated, had a distinct outline where it came in contact with the uninfiltrated liver tissue. The surface of the growth was of a dirty brownish-white color, and showed irregular puckerings of the peritoneal investment of the liver, as though the peritoneum was thickened by chronic interstitial inflammation. No other growth was found in any part of the liver which could be reached by careful exploration with my hand. Although I believed the tumor to be a malignant one, I considered it a proper case for excision, because there was no infiltrated tissue beyond the immediate seat of the tumor.

My intention was to excise the mass with a Paquelin thermo-cautery knife, and I began by separating the gall-bladder from the under surface of the tumor by means of the hot knife. Before I had dissected the gall-bladder loose a quite free hemorrhage occurred from the surface of the liver from a vein the size of a goose quill, which was opened by the cautery. Just at this time one of the rubber bulbs of the thermo-cautery burst and destroyed the instrument for further use. Not expecting to use the Paquelin cautery I did not have a second instrument in readiness; I was, therefore, obliged to abandon the operation because of the evident risk from profuse hemorrhage, which would probably be uncontrollable without the use of the cautery. It did not seem wise to allow the patient to wait under ether with the abdomen opened until another instrument could be obtained. I was also deterred from proceeding by the fact that the operation was, under the best circumstances, grave, and the permission of her friends had been given somewhat unwillingly. To arrest the hemorrhage from the large vein I stitched the gall-bladder in its former position against the liver, so as to close the opening in the vein by pressure. This was done with several silk sutures, and answered admirably. I intended, after the patient recovered from the immediate effects of the operation and gained strength, to reopen the abdomen and, with two thermo-cauteries at hand, make a second attempt at removal of the growth. The patient was put to bed, did well, and the temperature remained about normal. During the time of convalescence, however, she was quite weak, complained occasionally of pain in the abdomen, and had a little irritation of the bladder, causing her urine to dribble. The stitches in the belly wall were removed in a few days, but the patient was not discharged until July 12. There was no marked change in the liver growth that could be appreciated through the flaccid abdominal wall. Her detention in the hospital for so long a time was due to her feebleness and to the fact that in the latter part of June she had what appeared to be a slight attack of pleurisy. This, however, did not cause her temperature to rise much over 100°. She was feeble during the whole time of her stay in the hospital, her pulse varying from 100 to 112; even when she was discharged the pulse counted over 100.

The condition found by the exploratory incision was described to her and to her friends, and an effort made to obtain their consent to a second operation definitely planned for the radical removal of what was believed to be a

malignant growth, which could only have a final fatal issue. The feeble condition of the patient, however, did not permit me or Dr. Fullerton to urge the operation as much as we would have done had the patient been younger and in vigorous health. It was impossible to obtain the consent of her friends to the operation, and the case, therefore, passed out of my hands.

It seemed to me that hemorrhage would be greatly diminished by encircling the growth, before excision, by a series of interlocking sutures of strong silk carried through the entire thickness of the liver. This, as I told the hospital class, would probably be my method of guarding against bleeding. The excision would then have been made with the cautery. There would have been left, of course, a large hemispherical wound in the anterior portion of the liver.

The patient died September 17, 1892, but I was ignorant of the fact until after she had been buried. Her physician, Dr. C. K. Rowe, writes that before death the patient's skin became of a decidedly yellow hue, that the tumor had increased somewhat in size, and that two or three small tumors were discovered on the back and neck. She became very much emaciated, and apparently died from exhaustion.

At the time that the patient whose history is recorded was under my care I was not familiar with the report of Dr. L. McL. Tiffany[1] on his case of removal of a small tumor of the liver, or of the details of Dr. W. W. Keen's case of excision of a cystic adenoma from the liver.[2] I had heard that Dr. Keen had successfully removed a growth from a liver, but I had not seen the report. These two cases, so far as was known to Dr. Keen at the time his paper was written, were the only instances of resection of the liver for the removal of tumor that had occurred in America.

Dr. Tiffany's patient was a man, aged twenty-five years, from whom a small tumor was taken from the left lobe of the liver, leaving a cavity in the surface of the liver an inch in depth and an inch and a half in diameter. Previous to the removal of this growth the parietal peritoneum was stitched to the liver around the area to be operated upon. Excision of the tumor was then performed by means of scissors, and the Paquelin cautery was applied to the bleeding surface. The tumor, which had been a painful one, "was composed of liver tissue in which there was much exudation, while scattered through the growth were many fine grains of sand—no doubt, minute calculi."

The patient operated upon by Dr. Keen was a woman, aged thirty-one years, who had suffered with a slowly-growing lump in the right side of the abdomen for about two years' time. The tumor proved to be a cystic adenoma of the bile ducts; it was three and a half inches

[1] International Medical Magazine for April, 1892.

[2] Boston Medical and Surgical Journal, April 28, 1892, p. 405.

vertically and nearly of the same dimensions transversely; at its base where it joined the liver substance it was two and a half inches thick. Its internal border lay next to the gall-bladder, which had to be dissected loose for one-half inch, in order to afford access to the growth in the operation of removal. Dr. Keen's first idea was to ligate the thick border of attachment before applying the cautery to cut through the liver tissue; he, therefore, put one stitch directly through the liver substance near to the gall-bladder. After this was tied he used the cautery. The cautery knife acted so satisfactorily that he found no necessity for further ligation of the liver substance surrounding the tumor, but removed the growth partly by the use of the cautery and partly by enucleation with the finger-nail. The large veins that he met with while making the incision with the hot metal were ligatured, as they were discovered, before the cautery divided them.* The two flaps of liver tissue left by the removal of the growth were then sutured together, very much as flaps are stitched after amputation of a limb.

The cases of Drs. Tiffany and Keen both recovered, and were in good health months after the operation. Dr. Keen's paper includes a list of twenty reported cases of removal of hepatic tumors, which was compiled by Dr. T. S. Westcott after thorough search through a large mass of literature.

Consideration of these cases induces Dr. Keen to believe that quite a large portion of the liver can be removed without extreme danger to the patient; that the entrance of bile into the peritoneal cavity is not necessarily fatal; and that bleeding can be managed by searing the surface of the liver, by ligation, or by fastening the stump to the abdominal wall in a manner similar to that used by Dr. Tiffany in his case to which I have just referred. Hemorrhage need not be great, as the divided vessels can be tied separately or in mass, or treated by pressure, by the cautery, or by a combination of all of these hemostatic measures. The mortality shown by the cases tabulated by Dr. Westcott is about ten per cent.