

There are many matters of interest in connection with the subject of this paper which I have not touched upon, and it would have been a labor of love for me to have dwelt at greater length upon those discussed, had my time permitted. My endeavor has been to contribute an honest mite to the advancement of a cause which well deserves far abler pleading.

## A CASE OF AORTIC ANEURISM TREATED BY ELECTROLYSIS; FAILURE.

BY JOHN HOMANS, M. D.

JAMES M., fifty years old, entered the Carney Hospital July 31, 1876, with an enormous aneurism of the arch of the aorta. The tumor had pushed through the walls of the thorax in the upper left pectoral region, forming an external pulsating swelling as large as a man's fist. The heart was crowded downwards and backwards, and the lung was displaced and more or less compressed by that part of the aneurism within the chest. The patient had always been healthy, and had worked hard. Four years since, one end of a stone which weighed two tons fell upon his chest and crushed him against the side of a ditch in which he was digging. He was released in a few minutes, but was not able to work for a week, and complained of soreness in the left pectoral region for several weeks. During the last two and a half years he has suffered, at times, severe pain in both pectoral regions, running through to the back and down the left arm; lately he has had slight dyspnoea and œdema of the lower extremities. The aneurism began to enlarge externally thirteen months ago.

On August 2d five gilded needles, insulated to within a quarter of an inch of the point, were inserted into the sac of the aneurism; the needles were pushed inwards about an inch and a quarter beneath the skin, and when all were inserted they described a circle round the apex of the tumor. Dr. J. J. Putnam was so obliging as to superintend the battery (Stöhrer's). He connected the needles with the positive pole, and joined the negative pole to a large metallic disk which was covered with a compress wet with salt and water. This was applied to the epigastric region, and was moved about occasionally. The patient was a little excited, and had a flushed face, with a pulse of 124. The following is Dr. Putnam's account of the operation:—

“The battery used was the ordinary Stöhrer's, freshly filled with a solution of bichromate of potash in diluted sulphuric acid. The needles were kept throughout in connection with the positive pole. Sudden interruptions of the current were avoided, and the pad at the negative pole was moved from one part of the chest to another as the skin beneath it became irritated.

"The number of cells employed varied from eight to ten, which was all that the patient could bear without much pain, the aim being to keep the needle of a galvanometer intercalated in the circuit constantly at a deviation of about forty-two per cent.

"The needles were kept in the aneurism during forty minutes, but since, after a time, the skin around some of them became slightly discolored, either bluish or pale, and somewhat sunken over a circle about two millimetres in diameter, these were removed and fresh ones (of steel) were inserted at neighboring points, ten punctures being made in all. Bubbles of gas and a little dark blood followed the needles as they were withdrawn."

The patient was bright and courageous during the operation, but after the needles were removed he became rather pale, and the extremities were cold. A cup of warm tea revived him, however. He stated that the insertion of the needles was the most painful part of the operation. The next day the pain through the back and down the arm was reported to be less than before the electrolysis. The tumor looked somewhat blue. On August 14th the patient reported that the pain above mentioned was very slight. His feet were still œdematous, and he complained of occasional dizziness. There was no albumen in the urine. On August 15th electrolysis was repeated; the tumor was then somewhat larger than when the patient entered the hospital.

"The second operation did not differ materially from the first except that steel needles only, insulated as above mentioned, were used, and one or two of them were removed and were not replaced in the course of the operation. The depths at which the needles had been inserted, measured from their points of junction with the skin, were found to be respectively two, one and a half, one and one fourth, one and three fourths, and one and five eighths inches.

"The insulation used consisted of several layers of a thin solution of shellac in alcohol, which was applied while the needles were as warm as the hand could bear, and this coating was found on the whole to work well, although on the withdrawal of some of the three-cornered needles it was found to have chipped off at a few points along their edges."

The second operation was more painful than the first, the patient experiencing a burning sensation while the current was passing. On August 21st he left the hospital, convinced that his pain was less than when he entered. The tumor, however, was larger, and the impulse was about the same.