
Schede's Operation for an Old Empyema;
Cathcart's Drainage; Recovery.

A PAPER READ BEFORE THE SURGICAL SECTION OF THE
COLLEGE OF PHYSICIANS, APRIL 9, 1897.

W. W. KEEN, M.D.,

Professor of the Principles of Surgery and of Clinical Surgery, Jefferson Medical
College, Philadelphia.

REPRINTED FROM THE THERAPEUTIC GAZETTE, MARCH, 1895.

DETROIT, MICH.:

WILLIAM M. WARREN, PUBLISHER.

1898.

*SCHEDE'S OPERATION FOR AN OLD EMPYEMA; CATHCART'S DRAINAGE;
RECOVERY.*

BY W. W. KEEN, M.D.

J. F. S., aged twenty-four, was sent to the Jefferson Medical College Hospital by Drs. John and George Potteiger, of Hamburg, Pa., December, 1895. His family and personal history are negative, excepting that at twelve years of age he had an attack of chorea, which lasted for a year and recurred slightly a year later, but has never returned.

In April, 1895, between eight and nine months before his admission, he had a left-sided pneumonia followed by pleurisy with marked bulging of the precordial region. This was incised, and drained on May 30. A second incision was needed at a later date, and a third about the 1st of August. On admission there was no healthy breath sound over the entire left side of the chest. The left chest wall was considerably flattened, especially at the upper portion. The apex of the heart was displaced two inches to the right. Specific gravity of urine 1.032; neither albumen nor sugar.

Three sinuses still existed at the point where the incisions were made (Fig. 1). Evidently the attempt by Nature to cure by approximating the chest wall had not succeeded by reason of the rigidity of the chest wall. This, from the long-continued sup-

uration, I deemed to be probably due as much to the thickened pleura as to the ribs.

Operation December 4, 1895. I first made an incision connecting the various sinuses and removed the diseased tissues around these apertures. An opening into the interior of the chest was found between the fifth and sixth ribs just in the nipple line. A long probe reached upward as high as the clavicle, downward to the diaphragm, and backward to the posterior wall of the chest. A long curved incision was made extending from the first incision to the scapula. The flap covered most of the side of the chest. The incision was made directly down to the ribs, and all the soft parts external to the ribs were lifted. Beginning then at the opening into the chest cavity, by a large pair of bone pliers I divided all the tissues of the chest wall up to, but not including, the second rib, downward to the diaphragm, and at the upper and lower extremities of this incision I divided the entire thickness of the chest wall well back under the anterior edge of the scapula, and vertically between the ends of these last, thus removing the wall of the chest (except the flap) from the third to the eighth ribs inclusive. The pleura was nearly an inch thick and its cavity was filled with pus. The left lung was obliterated and bound to the inner side of the apex of the left chest; the pleuro-pericardium forming a vertical diaphragm about an inch inside the nipple line. The entire surface was curetted and lightly packed with iodoform gauze. The flap was then sutured in position, except at an opening below for drainage. My inten-

tion in suturing the flap except a small drainage opening was to obtain its adhesion to the soft parts as far as I could. I then intended in three or four days to cut the sutures at the apex of the curve so as to get more room for drainage and packing; especially would the drainage be good when he was in the erect posture. No trouble was experienced with hemorrhage. The bone forceps apparently arrested the hemorrhage by crushing. The ribs were adherent to each other.

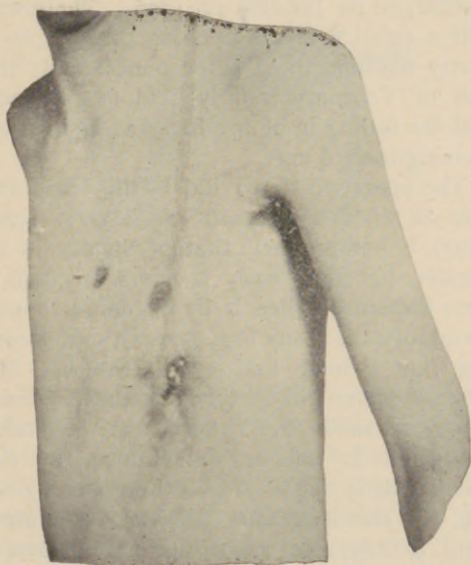


FIG. 1.

After the operation his temperature fell to 95.6° , but by the fourth day had gradually risen to 102.2° . On the sixth day it had fallen to the normal and remained so till he was discharged.

I found, after the first few days, that the abundant suppuration in the old cavity of the pleura was not freely drained by the gauze, and accordingly I applied the apparatus of Mr. Cathcart as modified by myself (*Annals of Surgery*, February, 1896). This kept the cavity entirely free from pus.

At the time of the operation the cavity held considerably more than a quart of pus. In two weeks there had been such contraction that it held less than a pint. He was discharged on January 22, 1896. There was still a small fistulous opening, leading to a cavity holding about three ounces. By the end of February it only held two ounces, and the falling in of the flap was rapidly advancing toward cure.

The operation that I did in this case, and also in another (*Annals of Surgery*, June, 1895), is not precisely that of Schede in its details, but practically is the same, and I have therefore called it by his name, though I employed it in my first case without knowing that Schede had ever done it. His original paper will be found in the *Verhandl. d. Cong. Innere Med.*, 1890, p. 41. Schede's operation is not as well known in this country as it ought to be. Ferguson (*Journal of the American Medical Association*, Jan. 9, 1897) in reporting a case stated that in looking through American medical literature he had not been able to find any other case whatever, overlooking the first case of my own to which I have just referred. Estlander's operation (thoracoplasty) is very well known and finds a place in all the textbooks. Schede's, which is a radical improve-

ment of the same, receives bare mention in the recent systems of Park and Dennis, and is not even referred to in Mr. Treves' System of Surgery or in his Operative Surgery. The American Text-book of Surgery describes the operation quite fully.

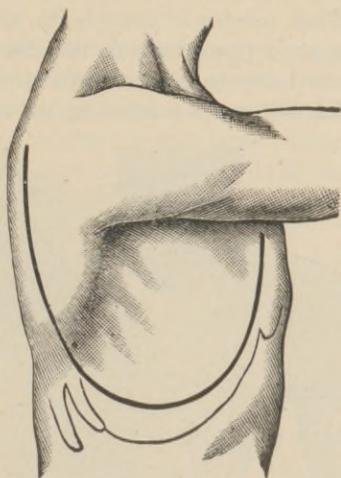


FIG. 2.

The operation of Schede is especially applicable to very old cases in which the pleura, as in the present case, reaches the thickness of an inch or an inch and a quarter. It is very evident that mere removal of the ribs, leaving such a thickened pleura, will do no good, since the pleura is so stout and firm that it preserves the arch of the chest wall and therefore the cavity persists. Accordingly, the principle of Schede's operation is to make a flap of the soft parts down to the ribs, and then remove ribs, intercostal muscles and thickened pleura entirely. The flap,

which has been raised, is then replaced so that the skin and subcutaneous tissues lie directly on the inner side of the old thickened pleura, which should be thoroughly curetted before the flap is replaced.

The incision begins (see Fig. 2) at the level of the axilla in front, extends below to the lower border of the pleura, and then curves upward posteriorly to the level of the second rib between the scapula and spine. The entire soft parts (including the scapula)

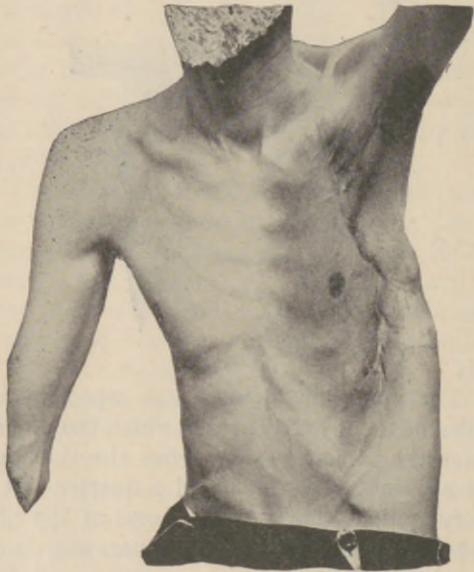


FIG. 3.

down to the ribs are then raised. All of the ribs from the second or third downwards and from the costal cartilages to the tubercles are removed. The thickened pleura is then, in the entire extent of the wound, split, and

with the intercostal muscles are removed with a strong shears. In both of my own cases I have not first resected the ribs and then the pleura as was done by Schede, but I have divided the entire chest wall under the soft parts by a strong pair of bone pliers. If the intercostal arteries bleed they are, of course, ligated. In my own cases I did not have to ligate any of them. Apparently the crushing of the forceps jaws prevented the hemorrhage. After thorough curetting of the visceral layer of the pleura, the flap is then laid upon the lung and pleura where it usually heals *per primam*, with an immediate subsidence of the fever. In both of my own cases I have found it necessary to drain for a considerable period. The best method by far of accomplishing this object is by the Cathcart drainage.

The same free motion of the arm which I obtained in my first case is equally evident in the present case (Fig. 3). The left lung has expanded more than I had believed possible—to the third rib. There is a marked left dorsal lateral curve, so that the vertebral ends of the ribs reach the posterior axillary line. The whole left chest wall is unexpectedly firm and protects well the heart, the pulsation of which is very evident and is still displaced to the right.