

I knew that the bone would probably have united readily enough under the old form of treatment, but with these hitherto uncontrollable fragments held in exact apposition by the depression in the plaster, I felt sure that the union would be accomplished with the minimum of deformity and the result, as it proved, justified my expectation.

This same method of using the depressed plaster, instead of pads was employed with excellent results in two cases of Colles' fracture at the Hospital; but, as this is a fracture which, after impaction has been broken up, is usually satisfactorily treated by ordinary splints, or, as some surgeons claim, by no splints at all, I do not use these cases as evidence in favor of the method here spoken of.

The plan, as carried out in the first case, was certainly highly satisfactory, and I see no reason why it should not be of use in certain fractures in other parts of the body, where the fragments cannot be kept in position by the ordinary methods now in use. Dr. T. A. DeBlois tells me that a modification of this method has been occasionally used in treating fractures of the nose; but at the time the cases here reported were treated, I was not aware of its ever having been previously used in any case.

One of the attractive features of this method of applying pressure is that the fracture can be reduced after the bandage has been applied, and the fingers and thumbs can thus regulate the degree and distribution of the pressure to a nicety.

It seems to me that Messrs. Wynne and Duel have suggested a new and simple expedient which may occasionally be found of great use in the treatment of certain troublesome fractures after the ordinary means have failed.

Clinical Department.

CASES OF PNEUMOTHORAX.¹

BY H. F. VICKERY, M.D.

On May 24, 1892, I was called to see Miss D. L., a rather delicate girl of nineteen, who had suddenly become very ill. As to the family history of the patient, her mother was robust; her father was not vigorous, but yet not suffering from any particular chronic disease; one sister had died of diphtheria, and an aunt of consumption.

Twelve days before I saw her, my patient noticed that she had to clear her throat oftener than usual; but she had no cough. Ten days later—two days before my visit—she had a slight hæmoptysis, followed in a few hours by a profuse one. She was apparently recovering from this as rapidly as could be expected, when in the night of the 23d–24th, she became suddenly cyanosed, and greatly distressed for breath. When I arrived, the heart was feeble and rapid, and demanded active stimulation. The chest presented the following condition: The left lung was normal, except for excessive, vicarious action. The heart was not displaced. The base of the right lung in front was tympanitic, and over it very little respiratory murmur was to be heard; but the heart-sounds were unusually audible in this region. The patient was too feeble to allow of examining the back. Dr.

E. N. Whittier now saw the case in consultation with me. He also was struck by the remarkable transmission of the heart-sounds to the right, without any evidence of a consolidated lung. Nevertheless he concurred in a probable diagnosis of right pneumothorax, and he joined me in urging the removal of the patient to the Massachusetts General Hospital.

Accordingly, she was transferred thither, and entered Dr. Whittier's wards; where he very kindly invited me to see the girl with him, once more, in the afternoon of the same day. Hoping to relieve the dyspnoea, we inserted an aspirating needle in the lower part of the right chest. It entered a cavity, in which it could be freely moved about, and it is probable that we drew some air out of the thorax; but no fluid was obtained, nor was the patient rendered any less uncomfortable.

She did, however, benefit greatly by inhaling the oxygen which was ordered for her immediately upon her entrance to the hospital. It was given more or less continuously for the first twenty-four hours, and I think no one around her bed could doubt that it saved her life, at least for the time being.

After considerable improvement, however, fresh hæmorrhages occurred, the cough increased, tubercle bacilli were found in the expectoration, and on August 13th, after three months' illness, she died of pulmonary tuberculosis.

Around this case I should like to group a few others, some of which I have had the privilege of observing, but none of which have been under my own care. With one or two exceptions, to be hereafter noted, they have all been in charge of the Visiting Staff of the Massachusetts General Hospital, to whose courtesy I am indebted for permission to report them. It should be premised that it is not my endeavor to write a monograph upon the subject of pneumothorax, but merely to bring out a few interesting points.

One striking fact about the case just narrated was the abrupt onset of the trouble. The patient had had no real cough and only for ten days a slight hacking, when the hæmoptysis occurred, to be followed within forty-eight hours by the pneumothorax. A still more remarkable event is recorded by Lundie in the *Edinburgh Medical Journal*.² A lawyer's clerk, aged twenty, with a tubercular family history, but in apparent health, while sitting quietly at home after dinner, was seized with sudden severe pain in the left chest, and obliged to take to his bed at once, with left pneumothorax.

As regards etiology, my patient is an example of nine-tenths of all cases. Tubercular infiltrations, breaking down, open a communication between the bronchi and the pleural cavity. The tubercular focus need not necessarily be on the surface of the lung, however, for it may be connected with the pleural space by a sinus.³

The next most common cause is empyema, ulcerating into the lung. This was probably the mode of origin of a case of Dr. Gannett's: Case 2, Elizabeth S., whose father died of probable phthisis, had influenza in January, 1890, followed by pneumonia; after which it was said there was fluid in her chest. In May, she became much worse and had profuse expectoration, raised suddenly by mouthfuls. She was brought to the hospital June 7th, when the left chest

¹ Read before the Suffolk District Medical Society, April 29, 1893.

² *American Journal of Medical Sciences*, February, 1892.

³ Powell, quoted by Donaldson, *Pepper*, iii, p. 575.

presented the characteristic signs of amphoric breathing and metallic tinkling.

That violent exertion is often the immediate cause of pneumothorax is, it seems to me, illustrated by the fact that four times as many men as women suffer from it. In the first case reported in this paper, its development may have been precipitated by the coughing occasioned by the hæmoptysis, or by violent vomiting, which repeatedly occurred after the blood appeared. Strümpell has seen it after hard rowing, and after hanging out clothes. Child-birth sometimes causes it. A phthisical patient who was in Dr. Gannett's wards last October, was attacked while laughing. A painter (Case 3) also tuberculous, aged thirty-four, who was under the care of Dr. S. L. Abbot in April, 1882, when I was a house-pupil, was carrying either a ladder or a sign-board, when he experienced the peculiar sudden pain and dyspnoea.

Another man, (Case 4), Fred P., aged twenty-two, who worked in a stable, and who came under Dr. Whittier's care, had been well till one month before he entered the hospital, when he began to have a slight cough, with scanty, yellowish-white expectoration. These symptoms had lasted three weeks when, as he was engaged in washing carriages, left pneumothorax developed.

His case, by the way, illustrated the capacity of the thoracic cavity, which a valvular pneumothorax is calculated to test very thoroughly. Upon his being tapped with a trocar and canula, to which a rubber tube was fastened, with its other extremity under water, a considerable volume of air rushed out, and also sixty ounces of serum. Eighteen days later, seventy-six ounces were removed.

In Dr. Abbot's case, also, the distention became enormous, driving the heart under the right nipple, and urgently demanded interference. It did not get it, because the patient's friends forbade any "operation" — so that a sudden syncope ended the poor fellow's sufferings.

While in the vast majority of cases, pneumothorax ensuing upon over-strain is really due to an antecedent pathological condition,⁴ it exceptionally occurs in those who were perfectly healthy before and who make a good recovery. This was true in both of Strümpell's cases, already referred to.

Another cause of the condition is traumatism. A perforating wound of the thorax may produce it; but it is much more likely to do so if the lung itself is pierced.⁵ It must have been in this way that the two cases quoted by Osler⁶ were caused by a hypodermic needle. Thus also contusions, without external wounds, may occasion pneumothorax; or old pleural adhesions, being wrenched asunder, may tear into the pulmonary parenchyma, as shown by Professor Zahn of Geneva.⁷

Often these traumatic cases do well.

Matt H. (Case 5), aged twenty-two, born in Finland, came into Dr. Fitz's wards June 27, 1891. Two weeks before, a knife-blade had been thrust into the upper right front. There were tympany, absence of respiration, and depression of the upper limit of hepatic dulness, with displacement of the heart to the left. There was no interstitial emphysema. He was discharged, well, at the end of two months.

Michael V. (Case 6), a Dane who could speak no English, entered the hospital May 27, 1891, with a small bruise low down in the right axillary region. There was much air in the subcutaneous tissues; and there seemed to be air and a small amount of fluid in the right chest. He was discharged, well, in fifteen days after entrance. At no time could any fracture of the ribs be made out.

As a rule, no abnormal condition causes so great a displacement of the heart as pneumothorax. Yet in neither Case 1 nor Case 2 was the heart dislocated. The same is true of Case 7, Annie G., sent in by Drs. Fifield and Fitz, and under the care of Dr. Whittier. When seven months pregnant, she had pneumonia, miscarried, and was delirious for five weeks. She entered complaining of cough with expectoration, and tenderness in the left axilla. The heart was in its normal place. No metallic tinkling nor succussion sound could be obtained, but tympanitic resonance extended everywhere below the fifth rib in the left axilla and the same level in the back, with very feeble, distant respiratory murmur. Over this same area it was noted that the heart-sounds were universally audible. This patient was discharged a month after coming in, improved, and wrote, twelve days later, that she was "gaining fast," and able to do a little work.

For the heart's remaining stationary, an easy and natural explanation is that pericardial adhesions have already been formed, in these cases, before the pneumothorax occurs. In Lundie's case, above-mentioned, the heart was pushed backwards.

Why heart-sounds should be occasionally transmitted through spaces filled with air, as in cases 1 and 7, is not very clear. It might be attributed to conduction along the ribs; but if so, it does not require any great intra-thoracic pressure, for there was evidence of none in the first patient. Possibly the concave thorax, with the air beneath it, acts as a sounding-board.

With regard to the detection of pneumothorax, I have been much impressed by the latency of some cases, and the comparative comfort some individuals enjoy, while the victims of this serious disorder. If only one's suspicions are aroused, however, it is seldom difficult to make a diagnosis.

Cornelius D. (Case 8), a hod-carrier, twenty-eight years old, entered the hospital May 28, 1887. He was a patient of Dr. Shattuck. For a year he had had a cough, and some pain in the lower part of the left chest, but he had worked till two weeks before entrance, when a sudden aggravation of the pain drove him to bed. He had noticed a swashing sound in his chest for six weeks before he took to his bed — that is, he had been working as a hod-carrier for six weeks while suffering from hydro-pneumothorax. On one occasion, by the way, just after this patient had been tapped, a bubbling sound could be heard at the end of inspiration, between the lower angle of the scapula and the vertebral column, suggesting that the hole in his lung was situated, not at the apex, as usually happens, but low down.

The most remarkable instance of latency in this disease, of which I am aware, is familiar to a great many, for it is related in Flint's "Practice of Medicine" (Ed. 1881, p. 154). An accountant, eighteen years old, had had a slight cough for a year, but so slight that he had thought nothing of it, and regarded

⁴ Matas: *Hare's System of Therapeutics*, II, p. 683.

⁵ Niemeyer: *l.*, p. 277.

⁶ Osler: *p.* 694.

⁷ Schmidt's *Jahrb.*, August, 1891.

himself as being well, when he was taken ill with acute pneumonia, and was found to present, in addition, the signs of hydro-pneumothorax. He lived four days. An autopsy entirely confirmed the diagnosis and it revealed, beside, several phthisical cavities in the apex opposite the pneumothorax.

In the matter of prognosis, the phthisical cases are very apt to die in a month or two, but still they need not abandon all hope. Früntzel has lately emphasized this point.⁸ It is also illustrated by a case of Dr. Cutler's (Case 9). Patrick S., age twenty-three, entered the hospital July 23d of this year. He had had a "kind of a cough" for six months, and had lost sixty pounds. There was pneumothorax on the left side, and tubercle bacilli were present in the sputum. Yet, at the end of a month, he had gained seven and a half pounds, could climb stairs very well without much dyspnoea, and left the hospital "much improved."

The value of tubercle bacilli as a factor in prognosis is self evident; but a negative result of a search for them will not, of course, enable us to exclude tuberculosis. Thus (Case 10) Wm. H., who came under Dr. Shattuck's care March 9, 1891, with pneumothorax, had his sputa examined twice for bacilli, and none were found; while at the fatal termination of his disease the autopsy revealed a cavity in the upper lobe on the affected side.

As to treatment, for the most part it is symptomatic. Morphine is often necessary. And oxygen may be invaluable. Aspiration must be employed with some discretion. We can not afford to delay when the intra-thoracic pressure threatens to paralyze the heart, and on the other hand we must beware lest too zealous efforts cause a re-opening of a newly-healed communication between the bronchi and the pleural cavity.

Reports of Societies.

MASSACHUSETTS MEDICAL SOCIETY. SECTION IN SURGERY.

C. L. SCUDDER, M.D., SECRETARY.

MEETING, Tuesday, June 13, 1892, DR. C. B. PORTER in the chair.

DR. A. G. GERSTER, of New York City, read a paper on

HOW SHOULD THE GENERAL PRACTITIONER DEAL WITH STRANGULATED HERNIA?¹

DR. C. C. ODLIN, of Melrose: It has always seemed to me that he who participates in a public discussion, even if he be devoid of the necessary oratorical accessories to hold the attention of his audience, should at least have a thorough knowledge of the subject under consideration. This I must at once disclaim. It has seemed to me perhaps that the only reason why Dr. Porter asked me to take part in this discussion was that the words of wisdom which we have heard might shine more brilliantly in comparison with my ignorance; but if that be the case I shall endeavor to forgive the doctor, and try to make some remarks on the interesting paper which we have heard from Dr. Gerster upon how strangulated hernia should be treated by the general practitioner from the standpoint of a general practi-

tioner. I remember very well, indeed, with what a sinking of the heart I was in the habit in my early days of responding to a call to see a person afflicted with irreducible hernia. I revolved in my mind the different coverings of the hernia — integument, inter-columnar fascia, fascia propria, etc., — and by the time I got to the house those were a muddle in my brain. That was all nonsense: I know now it was, but I didn't know it then. Had I known it then, I should have been saved a good deal of mental anxiety and worry. It seems to me that when the general practitioner is called to a case of hernia he should go to that case with just two ideas in his mind, one is to reduce the hernia without operation if possible, the other is to reduce that hernia any way. Of course, we all understand that taxis is the first thing to attempt. Taxis, it seems to me, should not be prolonged, and should not be severe lest the subsequent bruising may interfere with the recovery of the patient if operation be finally necessary. Taxis may be assisted very much by the use of ether and the ether spray; and it seems to me also by placing the patient in the Trendelenburg position. If my memory serves me aright, this was first attempted by Dr. William J. Allen, a practitioner at White River Junction, Vt. He mounted the bed, lifted the hips and body, and allowed the head and shoulders to rest on the bed. The gut returned with that gurgle which is so pleasant for the practitioner to hear.

If taxis is unsuccessful, of course the question of operation at once comes up. I want to speak of three points which have occurred to me in the cases upon which I have operated. One is the point Dr. Gerster has spoken of: to be sure of the diagnosis. Quite a number of years ago a gentleman who was a patient of mine a long time, came into my office and showed me a very small bunch about the size of a pea in the left groin. I examined that as carefully as I could, and told him I was unable to determine whether it was the commencement of a hernia or whether it was an inguinal gland. As this gentleman was going into the city every day, I asked him to call upon a surgeon who made the subject of hernia a specialty. A few days afterwards he came to my office and said he had visited the gentleman, and had been told it was an enlarged gland and that no truss was necessary. Nearly a year later, while getting out of his buggy, this little bunch broke through, forming a protusion about the size of a hen's egg. I was summoned immediately, and found it impossible to reduce it. As I was called in the late evening, I packed the tumor in ice, thinking the cold, perhaps, would enable me to reduce it when morning came. As it was impossible to do so, I operated the next morning. There was no difficulty at all in returning the hernia; but the gentleman sank and died, apparently of exhaustion. That is a case in which I have felt, had I been acute enough to have distinguished that hernia in its commencement, a human life might have been saved.

Another point I wish to touch on may be spoken of perhaps in connection with another case. I was asked to see a woman about thirty years old afflicted with strangulated hernia. I advised immediate operation, and operated. The bowel moved freely after the operation, but the woman commenced to vomit; and she died, I think, on the fourth day. It seems to me, in the light of later experience, that the proper thing to do in a case like that is to perform laparotomy, feeling

¹ See page 61 of the Journal.