exhibit by the kindness of the Council of the Royal College of Surgeons in Ireland, compression had been tried sedulously by the gradual instrumental method, without chloroform, with and without distal pressure; by the rapid method under chloroform; and by digital pressure on the common iliac, kept up for five days by relays of students; in addition to the internal treatment. Some operation became then necessary, and the choice was exactly that put by Mr. Syme, who would undoubtedly have punctured this tumour, with the confident expectation of finding the artery opening out of its centre, and of being able to dissect the vessel away from the sac and to tie it above and below its aperture in healthy parts. If this course had been followed, the anatomical disposition of the parts would have been found quite different from that presupposed. The external iliac artery, instead of opening by a single aperture into the centre of the tumour, is deficient in the whole extent of the sac, and must have been secured at its upper and lower ends, a distance of not less than five inches by measurement. This would of course have involved an enormous wound—not so long, however, as is often made in ovariotomy, nor implicating such important parts. Having the whole sac freely exposed, and the circulation perfectly commanded by the abdominal tourniquet, I see no reason why there should have been much difficulty in finding the two ends of the vessel. The external iliac vein communicates below with the aneurismal tumour, and this communication with the vein was diagnosed during life, as is clearly stated in Mr. Hargrave's account. This complication seems to have entirely precluded the hope of a sound cure from the ligature of the common iliac artery, and in fact, on post-mortem examination more than ten weeks after the operation, the sac was found to contain "at its superior two-thirds a very soft greyish fibrinous clot, and in the inferior third a soft black blood-deposit, scarcely to be considered a coagulum, being so friable." The close contiguity of the orifice between the vein and aneurism to the mouth of the epigastric artery, through which the chief collateral stream must pass, obviously precluded all chance of sound consolidation by laminated fibrin. Enormous as the difficulties of the old operation would have been in this case, it really seems to me that it would have held out the only prospect of cure. With regard to such difficulties we must recollect that the ligature of the common iliac artery is not in itself an operation to be entrusted to a tyro, and surgeons have now ample experience from the practice of ovariotomy how much may be done successfully in the way of laying open the abdominal cavity. This communication between the vein and the aneurism having been diagnosed during life, the surgeon could have probably prevented any hæmorrhage while the sac was being laid open by distal pressure on the femoral vessels, and after the ligature of the main artery above and below the sac there could not have been much difficulty in including the mouth of the vein and the epigastric artery (if it bled at all) in a ligature.

This case was perhaps one of the most difficult and complicated with which an operator could have had to deal, and I am free to confess that the attempt might have been unsuccessful. But in an uncomplicated case no extraordinary difficulty need be feared when the tumour is of moderate size. If the bruit can be traced as distinctly radiating from one point the surgeon will be the more encouraged to believe that the communication with the artery is single, and that the vessel opens into the sac about that level. But I apprehend that in the iliac arteries most aneurisms will be found to be of the cylindric variety.

ON THE VARIOUS MODES OF CONTRACTION OF CAVITIES IN PHTHISIS PULMONALIS.*

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WHEN excavation has taken place in a phthisical lung, the next point of interest to both patient and practitioner is to ascertain what probability exists of the cavity contracting; and assuredly here we must admit that a cloud of mystery overhangs the determining causes of this process, and we must confess ourselves unable to foretell with any amount of certainty in which cases the cavity will contract and in which it will not.

Relatives and friends are most anxious that we should prophesy good things, and cannot understand why we hesitate to give a hopeful prognosis when the patient is, to all appearances, improving and gaining ground rapidly. Still, while we may hold out hopes of prolongation of life, if the disease be limited to one lung, the cavernous sounds dry and only audible over a small portion of the lung, we are not justified in promising a permanent arrest of the disease until there are clear indications of contraction. Even when this event is completed, and entire obliteration of the cavity has taken place, though much ground has been gained, the patient cannot be considered safe: as, on the one hand, the contractile process, which has hitherto been his salvation, may by further progress obstruct the lung and large vessels, and thus, by giving rise to dyspnoea and dropsy, prove his bane; or, on the other hand, depressing causes may occasion a break-down of the badly organised scar-tissue or a fresh deposit of tubercle.

This does not sound promising; but it must be remembered that these phenomena are not necessities of the contractile process, which may halt at the stage of conservation and not proceed to that of destruction; but they are eventualities which it behoves the prudent physician to take full note of.

Contraction of a cavity is by no means a very common incident. In my 1000 tabulated cases, 328 at one time or another went into excavation; and among these contraction of cavities was recorded in 20; this gives 6 per cent.—not a high percentage, considering that several of the cases were under observation for many years.

When contraction of a cavity takes place, the laws of atmospheric pressure necessitate certain changes in the adjoining structures to fill in the vacuum which would otherwise occur. This is accomplished in various ways:—

1. By an expansion of the lung-tissue around the cicatrix.
2. By an expansion and drawing over to the affected side of the opposite lung.
3. By displacement of the neighbouring organs.
4. By collapse of the chest-wall.

Let us briefly consider these modes.

The first—viz., expansion of the lung-tissue around the cicatrix—rarely occurs alone, but is generally accompanied by flattening of the chest-wall over the cavity; the resulting emphysema is quite local in character, and the distended vesicles are often of a large size. The expansion may occur without any great shrinking of the side, as happened in three cases which I brought before the Clinical Society last year.† In these the contraction of considerable-sized cavities gave rise to but slight flattening of the chest and to no displacement of the neighbouring organs; this was the more remarkable as one of the cavities had been sufficiently large to cause tinkling sounds.

A curious feature in many cases of contraction is the change in position which the cavernous sounds undergo. In some of the cases I am about to relate it came to pass that the cavernous sounds, which had been clearly audible in the upper right or left front, ceased to be so, and were replaced by harsh breathing and marked resonance on percussion. On examining the back, however, they were detected in the scapular, inter-scapular, or supra-scapular regions, where they remained until contraction became

FUNCTION OF LINGUAL AND CHORDA TYMPANI NERVES.—M. Vulpian, at the meeting of the Academy of Sciences at Paris on the 20th of January last, gave the results of his inquiries upon the changes occurring in the nerve-fibres after section of the chorda tympani; and has satisfied himself that part of the fibres of this nerve terminates in the submaxillary gland, but that another part is certainly distributed to the tongue. He attributes to the last the singular character of motor power that the lingual acquires after section of the hypoglossal nerve. The lingual nerve proper, therefore, he continues to regard as a sensory nerve; but why the fibres of the chorda tympani should only acquire a motor power after section of the hypoglossal is at present unknown.

* Read at the Medical Society of London.

† Clin. Trans., vol. v.

complete. The *rationale* of this is, that contraction as a rule takes place towards the most fixed point, and this, in the majority of cases, is the root of the lung.

The lower, or middle lobe, as the case may be, is drawn upwards, and the expansion of its tissue combined with the increased pressure of air on the permeable air-cells causes emphysema and gives rise to the hyper-resonance and harsh breathing often heard over the spot where cavernous sounds were formerly audible. Though in most cases the root of the lung is the fixed point, it is not necessarily so, for if adhesions of the pleura exist, the contraction may take the direction of the point where the strongest adhesions are, and this is often the apex.

The second mode of compensation is by the opposite lung being drawn over to the affected side. This generally takes place in the anterior and upper portion of the lung; the limit of resonance is found to have crossed the median line and to extend from one to three inches beyond it. This drawing over of the healthy lung generally only involves the upper lobe, and cannot, as a rule, be traced lower than the third or fourth rib. The change of percussion note from the affected to the normal lung is very abrupt.

The third method, by displacement of the neighbouring organs, is rarely absent if the cavity be of any size. The organs liable to be thus displaced are the heart, liver, stomach, and spleen, but whether one or more of them is displaced, and the extent of such displacement, depend upon which lung contains the cavity and on what portion it is situated in.

Where the contracting cavity is in the right lung the displacement generally consists of the liver being drawn up, and this organ may reach as high as the fourth rib. The left lung and heart may be drawn across the median line, and the action of the latter may be visible in the second and third interspaces, the apex being drawn across, and its beat detected as far as the right nipple. This is, however, a rare occurrence, for the heart's position in these cases is more generally beneath the sternum, and slightly to the right of it. I can, however, call to mind one instance of contracting cavity in the right lung where the heart seemed entirely shifted to the right of the sternum, and the apex* was felt beating between the fourth and fifth ribs outside the right nipple. The patient was an inmate of the Brompton Hospital for some months, but died after leaving it, and, unfortunately, we had no opportunity of making a post-mortem examination.

When the cavity is in the left lung the displacement of organs is, as a rule, more marked. The right lung may be drawn considerably over to the left side; the stomach may mount up to the fifth rib, but does not generally rise higher than the sixth. The heart is drawn upwards through retraction of the left lung, comes into close contact with a considerable surface of the chest-wall, and on this account its action is sometimes visible in the first and second interspaces. In this change of the heart's position the course of the apex seems to be upwards, outwards, and towards the axilla, often describing the arc of a circle, of which some point in the neighbourhood of the aortic valves would be the centre. First the apex is felt beating between the fourth and fifth ribs, immediately below the nipple; then between the third and fourth, rather to the outside of the nipple; and at last it reaches the axilla. There is also sometimes a twisting of the heart on itself, and this, owing probably to its causing a slight obstruction of the aorta, sometimes gives rise to a systolic murmur; but, according to Dr. Pollock,† no lesion is found after death in these cases.

The fourth mode of filling up the void is by collapse of the chest-wall. This generally takes place sooner or later in all cases of contracted cavity, but not always at first, as often the displacement of organs, particularly of the abdominal viscera, the stomach, and liver, is sufficient to fill the vacancy. The flattening generally commences under the clavicles; and when the collapse is considerable the circumference of the affected side by measurement through the nipple line shows a diminution of from one to two inches.

* The pulsation which is visible to the right of the sternum in cases of displacement of the heart to the right is not always that of the apex, but sometimes the upper part of the right ventricle, which becomes uncovered by retraction of the lung, as has been well shown by Dr. R. Douglas Powell.
† Elements of Prognosis in Consumption, p. 200.

I will now narrate a few cases to illustrate these points.

CASE 1.—Jane H—, aged twenty-two, single, a dress-maker, was admitted into the Brompton Hospital under my care September 12th, 1871. No history of consumption in the family. Had enjoyed good health till four months previously, when, after cold, she was attacked with sharp pain in the left side and dyspnoea. Two months later cough came on, accompanied by muco-purulent expectoration and loss of flesh; and five weeks later the expectoration was streaked with blood for a day or two. The catamenia have been absent for four months.

Present state.—Pain in left side; cough with muco-purulent expectoration; appetite fair; tongue furred; bowels regular; pulse 104; respiration 30; morning temperature 98.4° F.; evening ditto 99.6°. Physical signs: Marked flattening and deficiency of movement of the left side of the chest; percussion sounds of a somewhat metallic character from first to third rib; cavernous sounds in the second interspace; some dullness below; posteriorly, dullness and crepitation over the upper two-thirds; right lung clear; patient weighed, two days after admission, seven stone.

The diagnosis was, a small cavity in the upper lobe of the left lung, partially consolidated after an attack of pleuro-pneumonia, with shrinking of the side. The patient was ordered the full diet of the hospital, half a pint of ale, and the alkaline gentian mixture, three times a day, a morphia linctus, and a turpentine liniment. A week later a dessertspoonful of cod-liver oil was added twice a day. She continued this treatment for nearly three weeks, when sulphurous acid (in half-drachm doses) and infusion of quassia was substituted for the gentian mixture. This latter, however, as the sulphurous acid had no marked effect, was resumed a week later, and continued with oil during her stay in the hospital.

Nov. 27th.—Greatly improved. Has gained 1 st. 5 lb.; cough decreased; pain in the side ceased. Expectoration nummular, dark-brown in colour, and offensive. The left chest is much flatter and more resonant, especially in the lower portion. No cavernous sounds audible; but some tubular sounds in the upper front. Three days later, measurement showed the left chest to be an inch smaller in circumference, through the nipple line, than the right; the right measuring 15 in., and the left 14 in.

Dec. 8th.—Has had slight hæmoptysis, which soon ceased. Expectoration no longer offensive or muco-purulent, but white and scanty. It has been several times examined for elastic tissue; but none has been detected. Pulse 80; respiration normal; temperature 98.2° F. There is fair resonance over the upper left front, some dullness over the lower, and some slight dullness in the upper third of the left lung posteriorly. Heart not displaced; breathing harsh to the third rib anteriorly; no cavernous, tubular, or crepitation sounds audible anywhere. The patient has a good colour, looks and feels well, and the breath is not short. She is going to take a situation as housemaid. She weighs 8 st. 7½ lb., having gained more than 1½ st. during her three months' stay in the hospital.

Remarks.—In this case the inflammatory attack which originated the consolidation, resulting in a cavity, was likewise the means of its arrest; for from it started the contractile process by which the side was drawn in and the cavity cicatrised. The improvement in weight and the rapid disappearance of physical signs were very remarkable. The occurrence of offensive expectoration is not uncommon during contraction of cavities, and denotes that portions of the cavernous secretion are pent up, and got rid of with difficulty. It is sometimes a valuable sign of progress in these cases.

CASE 2.—Emma W—, aged twenty-five, single, a silk-weaver, was admitted August 8th, 1872, under my care in Dr. Quain's wards. Nine months ago cough commenced, and has continued up to the present time. She has been losing weight for six months, and formerly had profuse night-sweats. Hæmoptysis came on eight weeks ago, and amounted to an ounce on several occasions. At present her cough is troublesome, especially at night; expectoration muco-purulent but slight; appetite good; tongue clean; catamenia scanty; bowels confined; pulse 100.

I detected a well-marked gurgling cavity in the upper left front, the right chest being quite clear. She was ordered the alkaline gentian mixture, a dessertspoonful of cod-liver oil twice a day, and the application of strong

iodine paint to the left chest. Her weight was found to be 6 st. 3 lb.

The diagnosis of a cavity was confirmed at subsequent examinations.

Oct. 10th.—Has been in the hospital two months, and has improved in general health; her cough is slight.

On examining her chest I could detect no dulness or cavernous sounds in the upper left front, but the breathing was tubular in the first interspace, and there was dulness in the supra-scapular and inter-scapular regions; also harsh tubular sounds above the scapula. The heart was not displaced, but there was some collapse of the left chest-wall, and a diminution in circumference of about half an inch.

Oct. 21st.—Appears stout and strong, and has gained 1 st. 3 lb. since admission.

CASE 3.—Judith L—, aged fourteen, came to the hospital as an out-patient on May 14th, 1868. Her aunt favoured me with the following history:—Her father had died of galloping consumption, but the rest of his family were stated to have been free from chest disease (one attaining the age of ninety-nine). Her mother had died during a confinement, the particulars of which were unknown. A maternal uncle had also died of galloping consumption.

The patient had been subject to cough and expectoration for three or four winters, generally disappearing in the summer, but constant since last winter. She had been languid and out of sorts for two years, and for the last two months and a half there had been wasting, feverishness, and shortness of breath. Catamenia had not appeared; bowels relaxed. Physical signs: Dulness and gurgling sounds audible over the upper half of the left chest, front and back. Ordered cod-liver oil in dessertspoonful-doses twice a day, with quinine mixture, and the application of tincture of iodine to the affected side.

Under this treatment she improved in general health and strength. But in July the physical signs were unchanged, and remained so at the close of an attack of bronchitis, which she had in November. From this she recovered, and in Feb. 1869 had lost her cough, and found her breathing much improved.

March 18th. — The cough has returned. On careful examination no cavernous sounds could be detected in the left upper front, but click-sounds and deficient breathing, and in the upper left back croaking sounds were audible. The heart's action was very prominent in the upper half of the left front, and the apex beat was felt between the fourth and fifth ribs.

A month later she had grown fatter and stronger, but was still pale. She had gained a stone and a half in weight in the last ten months. Ordered to continue the oil in a quinine mixture with one grain of sulphate of iron.

June 7th. — The patient has more colour; has lately grown two inches. Physical signs the same, except that there is more breathing in the left front.

She spent ten weeks of the following autumn in French Flanders, taking no medicine except cod-liver oil, eating well and walking three or four miles a day; and she grew three-quarters of an inch in height. On her return to England I found no change in the physical signs. She passed the winter well, with occasional catarrhal attacks, taking the oil steadily, with quinine and iron.

April 7th, 1870.—The catamenia have appeared, but only to a slight extent. There is more collapse of the upper left chest, and the heart is still further drawn up; the apex now beats between the third and fourth ribs, and the action is very visible in the upper interspaces.

After this she spent another three months in French Flanders, rapidly gaining flesh, and was able to go up hill, but her breath became short on the exertion.

I examined her in October, and found the left chest still more contracted, measuring 2 in. less than the right, through the mammary line. More vesicular breathing was audible in the lower left lung. Contrary to my advice she had left off treatment, except taking cod-liver oil when she had a cold. After this her cough increased, she wasted, and the temperature and the pulse rose.

Feb. 2nd, 1871.—Dr. C. J. B. Williams kindly examined her with me, with the following result:—Considerable collapse of the left chest; heart's apex between the third and fourth ribs, and drawn a good deal to the left. Some good vesicular breathing audible in the left axilla; breath puerile behind. The right lung drawn over to the left of the ster-

num to the extent of 1½ in. Some dulness, tubular sounds, and coarse crepitation were detected above the right scapula. Temperature 100° F.; pulse 108. Cough troublesome, and voice hoarse.

On returning to the oil she regained her lost flesh, but the voice remained hoarse, and a cavity gradually formed in the upper right lung. She, however, held her ground till September, when diarrhoea came on, followed by dropsy of the extremities and albuminuria, and she gradually sank. The state of the left lung remained unchanged to the last, though in the right a large cavity had formed. No post-mortem examination was allowed.

(To be concluded.)

A CASE OF DISLOCATION OF THE PROXIMAL PHALANX OF THE THUMB.

By R. P. B. TAAFFE, M.D., M.S. LOND.

THIS dislocation occurred in a boy about twelve years of age on the evening of the 13th December, 1871. The proximal phalanx was thrown backwards on the metacarpal bone, and presented the appearance figured in Erichsen's Surgery. The usual means were employed for reduction with the aid of chloroform—namely, extension by the clove hitch, forcible flexion of the phalanx towards the palm, but without success. The parts were then placed in a large poultice, and the next day the efforts at reduction were renewed, the patient being again under chloroform, but still without success.

The phalanx being well extended so as to put the tendinous or ligamentous bands on the stretch, I then passed in a small, sharp-pointed tenotomy knife directly on the head of the metacarpal bone on its palmar aspect, then turning the point of the knife over the neck of the bone divided subcutaneously on each side a tendinous or ligamentous band, which was very tense. The reduction of the dislocation was then easily effected.

The wound was dressed with carbolic oil dressing, and the thumb bandaged over the closed fingers of the hand; after a few days the dressings were removed, and the wound was found to be discharging freely. There was no pain whatever. A warm bread poultice was applied. The discharge lessened daily, and in the course of ten days the wound closed, and at the present time (January 11th, 1873) the lad suffers no inconvenience, the small amount of motion natural to the joint being preserved.

The difficulties of reduction in this dislocation have been attributed to several causes by various authors, and are clearly explained in Erichsen's Surgery, such as constriction of the head of the metacarpal bone by the lateral ligaments of the joint; the folding in of the anterior ligaments of the joint, and interposition of a sesamoid bone between the articulating surfaces; and, lastly, that the narrow neck of the metacarpal bone becomes locked between, or constricted by, the two terminal attachments of the short flexors of the thumb, which must be carried back over its broader head, together with the displaced phalanx. This last is the view adopted by Erichsen.

In the case I now give, the impediments to reduction unmistakably were two longitudinal bands, one on each side of, and constricting, the neck of the metacarpal bone, and may have consisted of the lateral ligaments or the short flexor tendons, or both ligaments and tendons, and most probably also some fibres of the ruptured anterior ligament. After dividing the tendinous or ligamentous band on one side, an attempt at reduction failed, and it was only on division of the similar band on the other side that reduction was accomplished. I am quite certain that no amount of extension in this case would have succeeded in reducing the dislocation—for evidently the greater the extension, the tighter would the longitudinal tendinous or ligamentous bands clasp the neck of the metacarpal bone,—and that, before the bone could be replaced, these bands on one or both sides must have been ruptured.

I am led to think that in all cases where reduction (in this dislocation) is effected by simple manipulation, these