Cases in surgery occurring in the practice of P.D. Handyside / reported by John Struthers.

CASES IN SURGERY,

OCCURRING IN THE PRACTICE

OF

P. D. HANDYSIDE, M.D.,
F.R.S.E.,
LATE SENIOR ORDINARY SURGEON, NOW ONE OF THE CONSULTING SURGEONS,
TO THE ROYAL INFIRMARY OF EDINBURGH.

REPORTED BY

JOHN STRUTHERS, Esq.,
RESIDENT CLERK IN THE ROYAL INFIRMARY.

Extracted from the London and Edinburgh Monthly Journal of Medical Science.

The following short Series of Cases of Surgical Diseases and Injuries, I have been induced to publish, as they present some important Practical considerations.

P. D. H.

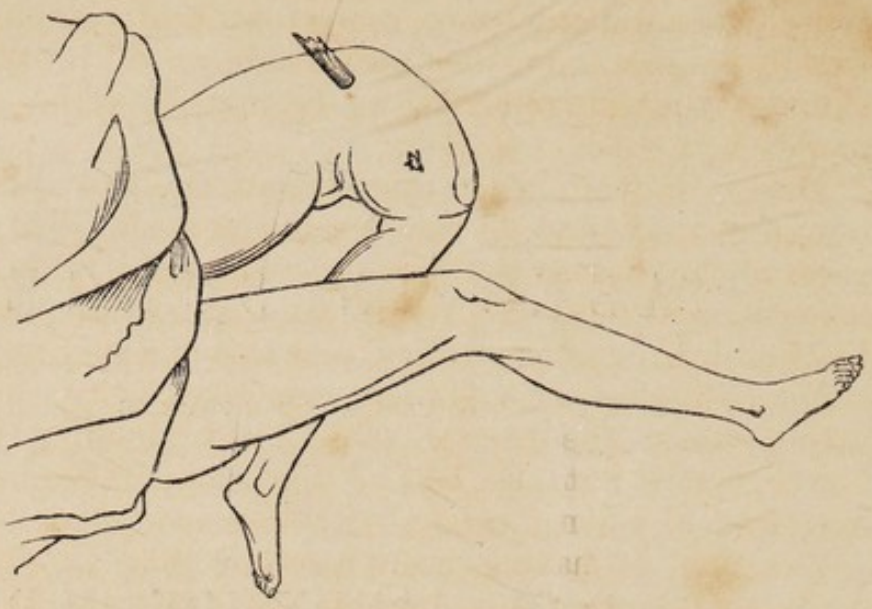
I.—NECROSIS OF THE OS FEMORIS.

CASE 1. *Extensive Necrosis of the Os Femoris, with Protrusion:—Recovery without Amputation.*

Jane Roy, aged 9, was admitted into the Royal Infirmary, under Dr Handyside, on December 20, 1843, with extensive Necrosis of the left thigh-bone.

On examination the left thigh was found remarkably twisted,

and distorted, being enlarged and unshapely, and bent nearly to a right angle at its middle. The leg of the same side was completely drawn up, and lay obliquely below the opposite thigh, with the foot thus projecting beyond the right hip, as represented in the accompanying outline.



The shaft of the os femoris appeared as if fractured near its middle. The upper end of the lower half projected through an opening in the soft parts to the extent of above two inches. The upper part of the thigh bone was in its normal position, but felt much thickened, and the soft parts over it were much swollen and indurated. A dark coloured cicatrix existed over the inner condyle.

The projecting portion of bone was destitute of periosteum; smooth and dark coloured on the surface; rough and spicular at the extremity; its medullary canal was hollowed out, and continually discharged fœtid pus; and, when handled, it appeared to be firmly connected with the lower half of the shaft of the os femoris. The patient had no power over the hip and knee-joints, but could move the foot and toes freely. The knee-joint allowed of passive motion to a limited extent, and the pain thence arising was referred to the middle of the thigh.

Previous history.—Exactly nine months before being brought to the hospital, she was awakened during the night by a violent pain in the left thigh, which was soon followed by swelling. For this she could assign no cause, except her having taken more exercise than usual the previous day, during which she had leant principally on the left leg, in consequence of some wound, or other temporary cause of lameness, of the right foot. Friction with vinegar cloths was assiduously applied for a fortnight over the painful part; but, as by this time the pain had become worse, it was then thought necessary to apply for medical advice. Twelve leeches were now applied, followed by hot fomentations: the latter were continued for two months. The pain, however, continued. Soon after this time an opening formed spontaneously in the situation marked by the cicatrix before mentioned, and after a plentiful escape of matter, the pain somewhat subsided. Poultices were then applied. Two months ago the thigh began to bend, and

quickly assumed its present position. This change was followed by constitutional disturbance, and great local pain and redness, which rapidly subsided, a month afterwards, on the protrusion of the bone through the integuments, an occurrence which was also accompanied by a gush of matter.

Before the pain in the thigh began, she had always been healthy, but since that time she has lost much flesh. Throughout the progress of the disease she has suffered considerably from pain, sleeplessness, and severe constitutional disturbance. Of late, also, she has had nocturnal sweatings, and loss of appetite.

On admission she was in an emaciated state, the pulse 100, and rather weak, the tongue moist, and inclining to red, and the bowels open; but she had no diarrhœa. There is no pain in the limb, except when touched.—*To have nourishing diet.*

Dec. 26. It having been resolved that an attempt should be made to remove the sequestrum and save the limb, the following operation was to-day performed by Dr Handyside in the theatre of the hospital:—

The sequestrum not having yielded to moderate traction with strong forceps, an incision several inches in length was, with a strong scalpel, made down to the new bone, in the direction of the sequestrum; the soft parts were then dissected a little to each side, and the incision was carried through the substitute bone, down to the sequestrum, which being again seized with the forceps, now readily yielded to strong evulsive force, exerted in a rotatory manner. The operator, then, placing firmly a hand on each portion of the still bent thigh, proceeded to undo the distortion, by re-bending the substitute, which had been felt during the previous steps of the operation to be as yet soft and pliable, and which now yielded to moderate and continued extension.

The hemorrhage from the incision, though profuse, was now arrested by the application of cold, and a strip of dry lint having been inserted into the upper angle of the wound, a bandage was next applied. The patient being then put to bed, the limb was placed on a double inclined plane, with the view of effecting gradually still greater extension, and also as the knee-joint still remained semi-bent and stiff. An opiate was given, and ordered to be repeated at night.—*To have only the common diet of the hospital.*

Jan. 3. She expresses herself much easier since the operation, having slept more soundly than usual. So much of the wound as has not healed by adhesion, granulates kindly; and the limb, both at the seat of the operation and at the knee-joint, is becoming daily more straight, from the gradual extension, made by means of the M'Intyre splint.

An opening was made to-day to evacuate matter which had formed in the upper third of the thigh.

13*th*. There has been some constitutional disturbance for the

last two days. Free dilatation of the above-mentioned opening was therefore to-day made, and was followed by the escape of much matter.

15*th*. Doing well; appetite improving.—*To have steak diet; and two grains of quinine daily.*

Feb. 1. The wound, which was healing rapidly, has assumed a phagedœnic appearance.—*Intermit the steak and tonics; a poultice to be applied; and to have four grains of Dover's powder, twice daily.*

10*th*. The above symptoms have declined. Matter flows freely from the openings.—*To have steak, and three ounces of wine daily.*

March 1. A wooden splint along the outside of the limb was substituted for the double inclined plane. She is now to rise, and take exercise with the assistance of crutches.

April 1. The symmetry of the limb is much improved. A starch bandage to be applied, now that the swelling is diminished. The discharge from the openings has almost wholly ceased.

29*th*. The thigh is now only slightly bent outwards, the limb being thereby shortened about an inch. She walks with the ankle-joint partially extended, as in talipes equinus, resting the weight on the ball of the foot, and thus compensating for the shortness of the limb. She has recovered the use of the hip and knee-joints, and can use the limb freely. Her general health is excellent. *Dismissed,—cured.*

Appearance of the Sequestrum.—On examination, it was found to be from four to five inches in length, and to involve the whole circumference of the os femoris at its middle, and also the entire thickness of that bone. The medullary canal is empty and pervious, except at the middle, where it is obstructed by a cribriform bony septum. The whole sequestrum is uniform in its appearance, and its distal extremity is rough and irregular, indicating that it has been detached at Nature's line of separation.

Remarks.—This case has been deemed worthy of notice from its peculiar nature, and from the success which has attended the treatment pursued.

In regard to its previous history, the case presents nothing very peculiar. The absence of an apparently sufficient exciting cause is of frequent occurrence, and the subsequent progress of the case is what might have been expected considering the treatment,—at first injurious, and subsequently inefficient,—which was had recourse to.

The shaft of the bone itself had been inflamed, both internally and externally, as indicated by the size and nature of the sequestrum—the upper end of which had become separated by the seventh month, as shown by the bending of the thigh, the substitute bone having been then either broken or bent, from its inability as yet to support weight or to resist force. The case had thus become seriously complicated, and it illustrates well the important practical indication, to support the limb during the progress of Necrosis.

The protrusion of the sequestrum is the next feature of importance, which, along with the free escape of the matter that had formed around it, afforded, as usual, great relief.

Hectic, however, had fairly manifested itself previously to the patient being sent to the Hospital; and her health was then considerably reduced.

Two lines of practice then presented themselves,—either the immediate removal of the limb, in accordance with the hitherto general rule, that, " when the necrosis is extensive and near a large joint, and when the new bone has given way and immense deformity and vast irritation resulted, amputation ought not to be delayed to save the life, if not the limb, of the patient,"—or on the other hand, by removing the sequestrum, to give the patient a chance of preserving the limb. In favour of the latter view, there was the probability, that the sequestrum had been already separated by the natural process, and being only bound down mechanically by the new osseous case, might therefore be easily and safely removed by operation,—that sufficient callus had now been formed to supply the place of the necrosed shaft, and that, though the thigh was greatly bent and distorted, from the giving way of the substitute, still such had not been the case for so long a period, as to preclude the possibility of rebending it, and afterwards modelling the bone anew. The patient's health also was not yet so far reduced as to render her unable to bear up against the subsequent calls on the resources of the system;—her time of life also was in her favour, and there was the probability that the hectic, instead of increasing, would cease, so soon as the sequestrum should be removed.

This line of practice was therefore followed, and it is fully borne out by the result of the case.

After the removal of the sequestrum at nature's line of separation, the bending of the substitute,—the most interesting feature of the case,—was safely accomplished, and without the employment of much force. The old and new bones were thus brought nearly into a line with each other.

The subsequent progress of the case is likewise interesting, the indications being—to restore still more the symmetry of the thigh, by moderate and continued extension,—to restore the functions of the hip and knee joints by passive motion,—to support the system by nourishing food, wine, and tonics,—to evacuate, by timeous incisions, the collections of matter which formed from time to time,—and, lastly, by gentle and increasing exercise, to restore gradually the use of the limb.

This case, then, affords another example in corroboration of the propriety of the modern practice of removing large sequestra instead of the whole limb;—and it farther shows that a case may not be irremediable, as regards the healthy functions of the limb, although, from the giving way of the substitute bone, the greatest deformity may for a time have existed.

Case 2. *Complicated Fracture of the Os Femoris followed by Necrosis, with Protrusion:—Recovery after Amputation.*

Andrew Finlayson, aged 18, farm servant, was admitted into the Royal Infirmary, under Dr Handyside, late in the evening of April 19, 1844, having, whilst intoxicated, been knocked over by a cart, the wheel of which had passed over, and injured the right thigh and knee-joint.

On examination, the right knee and the lower third of the thigh were found much swollen and discoloured. A nearly transverse fracture of the os femoris was easily recognised, a few inches above the condyles, there being great displacement, and marked deformity.

No fracture through the condyles or into the knee-joint could be discovered. The latter, however, was immensely swollen, and the seat of severe burning heat, and much pain. Two contused and lacerated wounds were visible on the outside of the joint; but they did not communicate with its cavity.

The accident happened in the afternoon, and the patient had been driven to the hospital in a cart, from a distance of ten miles. On his arrival there was no collapse, the skin being moderately warm all over, the pulse 100, and inclining to be full.

The fracture was immediately reduced. The broken ends, on being brought into accurate coaptation, were retained so, by the limb being placed on a double inclined plane, and one roller applied from the toes upwards to the knee, while another reached from the middle of the thigh downwards, over the seat of fracture. The limb was restored to its proper length.

The knee-joint being thus left exposed and free from traction, twenty-four leeches were applied over it, and hot fomentations ordered to be continued during the night. An opiate also was administered. The bowels had been previously opened, and the tongue was clean.

20*th*. Doing well; pain, heat, and swelling of the joint diminished.—*To be kept on low diet.*

21*st*. Swelling, pain, and heat of the joint increased; tongue white; skin hot, and dry; bowels opened by enema; pulse 120, full, bounding, and incompressible.

He was now bled from the arm to 14 ounces, which nearly induced syncope, after which the pulse fell to 100, and became soft and compressible. An opiate was then given, and repeated some hours afterwards, to meet the moderate reaction which ensued. *An ounce of the following mixture was ordered to be taken every second hour:—R. tartratis antimonii, gr. ii, bitart. potassæ ℥ij, aquæ ℥xxiv. Solve.*

24*th*. Pain and swelling decreased. *Continue fomentations and the antimonial solution.*

27*th*. One of the wounds on the outer aspect of the joint now discharges much dark-coloured glairy serum, which appears to flow from the cavity of the articulation.

May 4. The above discharge has now become purulent; pain and swelling of the joint much less.—*To have the common diet of the hospital.*

20*th*. To-day the splint was removed, a slough having formed over the popliteal cavity. When the loose slough was removed, pus escaped freely, and appeared to come from the seat of fracture. The fracture was then found not to have made any progress towards union, although the ends of the bone had been retained in coaptation. The splint hitherto employed being found more available in this case than the straight splint of Dessault, was accordingly reapplied, and pressure made, so as to direct the pus towards the surface, and favour its escape from the seat of fracture.

25*th*. The ends of the bones now no longer remain in coaptation, the upper end rises over the lower, and the least motion or pressure causes such intense pain, that all attempts to remedy the displacement are fruitless. The discharge from the knee-joint and the seat of fracture continues free. Tongue rather red; pulse 100, and small; he has nocturnal sweatings.—*To have full diet, and an acidulated tonic mixture.*

June 20. Continues much in the same condition, only the hectic is becoming more evident.—*To have four ounces of wine daily.*

July 9. An opening has now formed in the soft parts, some inches above the inner condyle, through which a large sequestrum protrudes, which, on being handled, is found to be connected with the shaft of the os femoris. Some pus exudes along the lower surface of the sequestrum.

14*th*. An incision having been made down to the bone, two inches above the point where the sequestrum protrudes, much matter made its escape. The patient's health has rather improved since the bone protruded. The purulent discharge from the knee has ceased, and the wound on the outside has closed, but there is still dull pain in the joint.

24*th*. Tongue red, glazed, and aphthous; pulse 120, small and weak; hectic blush very marked; has had great nocturnal sweatings, but as yet no diarrhœa. The sequestrum still adheres firmly to the upper portion or shaft of the bone. The sloughing in the popliteal region has now extended so far that the flexor tendons are exposed, and the lower portions of the fractured bone can be felt bare and rough. *Amputation was now deemed inevitable.*

26*th*. The limb was accordingly removed to-day, by the double-flap operation, in the middle of the thigh. The flaps were necessarily oblique in their direction, owing to the sloughing condition of the skin above the ham, and the protrusion anteriorly of the shaft of the bone. The anterior and outer flap was formed by transfixion and cutting outwards, but the posterior and inner one was completed by cutting from the surface inwards, owing to the awkward position of the lower end of the bone. The bone was healthy

where the saw was applied. About 4 ounces of blood were lost; 10 vessels were tied; 7 sutures were introduced; and a pledget of dry lint, with a bandage, were applied to support the stump, which was long and fleshy. An opiate was given on his being replaced in bed. Two hours after the operation, the pulse being 150 and weak, and the patient faint, 2 oz. of wine were given. Moderate re-action followed some hours afterwards, and was met by an opiate.

27*th*. Feels vastly better; pulse 140 and stronger; has slept and eaten well. To have 6 oz. of wine daily, in small and frequent doses, combined with a little light solid nutriment. No heat or pain in the stump.

29*th*. Pulse 130, full and soft; tongue less red; bowels open. The stump was dressed to-day for the first time. Primary union has taken place, except at the mere margin and outer commissure of the flaps, at the latter of which places a sloughing sore formerly existed. Most of the stitches were removed, and straps substituted.

Subsequently to this date, the case progressed favourably and without any thing remarkable occurring,—the ligatures came away in due time, the discharge ceased, and the stump became solid. The patient had a slight attack of bronchitis, which was completely removed by a blister, and on the 8th of September he was dismissed in good bodily health, with the stump solid and fleshy, and affording an ample and useful covering for the bone.

State of the diseased parts.—On opening the knee-joint, the synovial membrane generally, was found thickened and increased in vascularity. The articular cartilage, particularly over the condyles, was thickened, and appeared also to be vascular; while on the centre of the external condyle, a deep irregular ulcer was found penetrating through the cartilage to the bone, and communicating with the recently cicatrized external opening from which the matter had formerly flowed. The fracture was found to be nearly transverse, and about two inches above the condyles. The lower portion of the os femoris was partly overlapped by the upper, and the now empty cavity of a large abscess intervened. Both ends of the fractured bone were necrosed,—the upper end for about two inches in length, including the whole circumference of the os femoris,—and the lower end to a less extent. No new bone existed at these extremities, but began to show itself at about two inches from the end of each portion. Over the lower portion it extended as far down as the epiphysis, but not over it, and the upper portion was covered by a thick crust of new bone, for about three inches. The usual lines of separation could not yet be recognised. Lymph was found plentifully effused into the tissues surrounding the new bone.

Remarks.—This case is more particularly interesting, as showing how a case of Necrosis of comparatively limited extent may require amputation of the member, from the peculiar circumstances which may accompany the disease.

The violent synovitis, resulting from the injury of the joint, and

running on, notwithstanding the most active antiphlogistic measures of which the case would permit, to suppuration, and latterly to ulceration of the articular cartilages, and surface of the bone,—combined with the profuse discharges early occurring from the seat of the fracture, could scarcely have failed to oppose, or at least to retard, the sanatory process of union of the fracture; but the possibility of this was effectually prevented, by the inflamed and subsequently necrosed condition of the fractured extremities of the bone. That necrosis, however, had actually taken place, was proclaimed by the sequestrum showing itself on the surface; and then the character, and consequently the treatment of the case, changed from one of disunited and complicated fracture, to one of Necrosis, complicated with deformity and with disease of an important neighbouring articulation.

Amputation might at this time have been justifiably performed; but, in consideration of the youth and constitution of the patient, an attempt was first made to combat the hectic, and afford nature an opportunity and time to detach the sequestrum, and furnish sufficient callus. The hectic, however, soon declaring itself strongly, and the case continuing to be further complicated by symptoms of ulceration of the articular cartilages of the knee, and sloughing in the popliteal region, it was at length unavoidable to have recourse to amputation. The chief indication after the operation was to extricate the patient from the danger of the shock, by bringing about re-action; and this being effected by carefully administered stimuli, he was comparatively safe, requiring afterwards only nourishing food, moderate stimuli and tonics, with the usual local treatment, to restore him to his former health.

Viewing the two cases at the period when the sequestra protruded, they present a remarkable contrast to each other. In both a large sequestrum protruded at the same spot; but in the *former* case it had already been undergoing separation, by a natural effort, from the living bone, and only waited for the co-operation of the surgeon. An ample substitute was already formed, and the powers of the system were yet able to furnish more; whereas, in the *latter* case, the sequestrum adhered as yet firmly, the system being unable either to effect the tedious process of separation, or to produce a sufficient callus, were the separation to have been completed by art; the joint also was still diseased; and lastly, the hectic was so advanced that there remained not the slightest chance of recovery, without having recourse to the summary measure at length adopted.

Although, then, we have seen it to be possible, in some cases of extensive Necrosis,—notwithstanding the existence of immense deformity,—to save not only life but limb, where formerly, to preserve life it might have been deemed necessary to sacrifice the member:

it is obvious that other cases will still occur where any treatment short of this serious sacrifice, and the concomitant danger to which he is exposed from the operation, will fail to save the patient's life.

II.—SPASMODIC AFFECTIONS OF THE LARYNX.

Case 1. *Bronchocele giving rise to Spasmodic Dyspnœa—Tracheotomy—Recovery.*—Jaret Dixon, aged 18, was admitted into the Royal Infirmary, under Dr Handyside, on April 16, 1844, with a large Bronchocele.

On admission, both lobes, as well as the isthmus of the thyroid body, were much enlarged. The swelling was soft and yielding, and of a pyriform shape; the base extended downwards to the clavicles, filling up the jugular fossa, and the apex reached upwards to above the thyroid cartilage. Pulsation was communicated to the tumour, on each side, from the impulse of the carotid arteries, over which it lay; and, in addition, a gentle pulsatory thrill was perceptible in the tumour itself. The patient's neck appeared to be peculiarly long, and his tone of voice was higher and more shrill than natural.

Previous History.—Until two years ago, he states, that he was free from any swelling of the neck. At that time, however, being 16 years of age, he began to work as a farm servant, and simultaneously with this, the swelling arose. It has gradually increased ever since, and of late has afforded him considerable uneasiness. He is a native of Carlisle, and states that he has been employed on a low marshy farm.

In all other respects his health was good when he came to the Infirmary, and he expressed extreme anxiety to get rid of the disease.—*He was ordered to take ten drops of the tincture of iodine internally, three times a-day;—and an ointment consisting of hydriodate of potass and camphor, of each* ʒss, *and of the unguentum hydrargyri, and the unguentum simplicis, of each* ℥ss, *was ordered to be applied twice a-day over the tumour.*

May 9. Since last report, the above treatment has been continued. To-day, for the first time, there is considerable irritation of the integuments over the tumour, which is found by admeasurement rather to have increased in size. His system appears now to be affected by the mercury, which has been used externally only, and without much friction. The gums are tender, there is increased salivary flow, and the salivary glands are enlarged and painful. The bowels are open, the tongue is red, the skin hot and dry, the pulse is small, and he is in an anxious and excited condition. The internal use of the iodine, and the application of the ointment to be discontinued. Let him take night and morning the following medicine:—*R. Pulveris Jacobi veri gr. iss.; pulveris Doveri gr. iij. M. Fiat pulvis.*

7 P.M. He has now had a severe and sudden attack of dyspnœa, which lasted some time. From this he was much relieved by his assuming the semi-erect posture, and by the inhalation of steam.

9 P.M. He has now had another attack of dyspnœa, but of a more severe and lasting nature. He complained of pain, and of a sense of constriction of the glottis. The epiglottis was felt to be erect and somewhat tumid, and he expectorated what was said to resemble thickened mucus. The attack of dyspnœa had been so severe, that it was deemed advisable by the house-surgeon, (Mr J. W. Reid,) to propose tracheotomy, but to this the patient would not submit, as the urgency of the symptoms had at the time decreased.

11*th May*, 4 A.M. During the night he has had several severe attacks of dyspnœa, the last of which was so severe and protracted, that he is now glad to submit to the operation of tracheotomy. It was accordingly performed by the house-surgeon in the following manner:—An incision of about two inches in length was made in the usual situation. The enlarged isthmus of the thyroid body was then felt, and avoided; and, on deepening the incision, the trachea was found to have been pushed deeply towards the left side, by a portion of the right lobe of the gland, which at the same time overlapped and covered it. An attempt was now made to raise this portion of the tumour from off the trachea, but this was found to be impossible, from the extent and adhesions of the tumour; an incision was accordingly made through it to reach the trachea, into which a sufficient opening was then made. On the tube being inserted, the patient felt relieved, though at first much cough was excited by the trickling of blood into the trachea and along the tube, which was much too short, although the longest in the house.

The hemorrhage was very profuse, though principally venous in its character. It however continued, notwithstanding the aplication of pressure, for nearly two hours,—when Dr Handyside was sent for. It was then entirely arrested by increased pressure.

The quantity of blood lost was supposed to be about a pound; but from its having flowed on the bed-clothes, the exact amount of it could not be ascertained.

The epiglottis and glottis were at this time felt by Dr Handyside, and there was no œdema.—*The wound to be kept covered over with a light piece of linen gauze; and* 20 *drops of the solution of muriate of morphia to be administered.*

At 10 A.M., he breathed easily, and entirely by the mouth and nares,—air passing through the tube only when a forced expiration was made. He had no dyspnœa when the mouth of the tube was closed by the finger. He still complains of pain in the region of the salivary glands and mouth.

At noon. The tube was removed by Dr Handyside, without the slightest recurrence of dyspnœa.

There has been likewise no return of the hemorrhage.

Lint dipped in cold water was applied to the wound, and covered over with oiled silk.

He spoke at this time not in a whisper, but with a pretty full and strong voice.

8 P.M. He continues to breathe easily by the mouth and nares, and there has been no return of the dyspnœa, or of the hemorrhage. Pulse 140, soft, and small. *Bowels opened by an enema.—To have a draught, consisting of ℥ss of the tinctura hyoscyami, which is to be repeated if necessary.*

11*th May*. He continues to breathe naturally, and has had no recurrence of the dyspnœa. The wound has assumed a glazed appearance from the effusion of lymph, and there has been no recurrence of the hemorrhage.—*To have the following mixture. R. Spiritis ætheris nitrosi. ℥ss; aquæ acetatis ammoniæ ℥j; Misce.—of this he is to take a teaspoonful every hour in a little water.*

12*th*. The respirations are easy and natural; tongue dry and brown; bowels open; the pulse remains as before; and the mouth and fauces are red and tender.—*Continue the same care and treatment, and let him have in addition a gargle.*

13*th*. To-day he has the usual symptoms of mild bronchitis.

The wound has been kept carefully from exposure to the air, by a napkin applied round the neck. The ward also has been kept at as equable a temperature as possible. Air has had ingress by the wound, only when the dressings were being changed.—*To be cupped between the shoulders to six ounces; and a blister 6 inches by 4 to be applied to the left hypochondrium, where he complains chiefly of pain.*

14*th*. He refused yesterday to be cupped; but is to-day much relieved, from the application of the blister.

He now expectorates thick mucus, both by the mouth, and by the wound in the neck.

7*th*. *Another blister to be applied on the same part.*

The wound is granulating well;—the discharge from it is healthy.

20*th*. The bronchitic symptoms are entirely gone.

The wound does not now communicate with the trachea, and is cicatrizing rapidly from within outwards.

He has had no return of the dyspnœa.

The tumour is evidently diminishing in size.

June 1. The wound is now all but cicatrized, there remaining only a small granulating fissure.

The Bronchocele is now so much diminished in size, that the line and form of the sterno-mastoid muscles, and of the trachea, are visible; and the usual depression, constituting the jugular fossa, exists. *Discharged—cured.*

Case 2. *Spasmodic Dyspnœa from the Introduction of Sand into the Pharynx and Larynx:—Tracheotomy:—Recovery.*—Margaret Campbell, aged 17, a servant, was admitted into the Royal Infirmary, under Dr Handyside, near midnight, on June 4, 1844.

On admission, she was suffering from severe and continued dyspnœa, which underwent frequent exacerbations.

It was stated by the medical gentlemen who accompanied the patient to the hospital, that, about an hour and a-half previous to the time of her arrival at the hospital, a handful of sand was thrown into her mouth by a young boy, while she was speaking to him. Some of the sand accordingly entered the pharynx and larynx; and soon afterwards, she became suddenly affected with dyspnœa and violent cough. Since then, she had had continued dyspnœa, with frequent exacerbations; and the latter are becoming on each accession more severe.

As the patient was now almost in a state of suffocation, and no adequate obstruction was found by the finger in the mouth or about the glottis, the house-surgeon, (Dr Fleming,) had immediate recourse to tracheotomy. No unlooked-for difficulties occurred during the operation,—a few particles of sand were discharged through the wound, before the tube was introduced,—and immediately thereafter the patient felt greatly relieved.

June 5, 9 A.M. She has passed a good night, having slept well. —*An ounce of the following mixture was ordered to be taken every third hour:*—R. *Sol. mur. morph.* ℥ss; *vini antimonii* ℥ss; *misturæ camphoræ* ℥iv. *Misce.*

At noon. She continues to breathe partially by the mouth and nares, but chiefly through the tube. When the latter is closed by the finger, there is considerable dyspnœa. She expectorates freely by the tube, which is regularly emptied of the mucus, that would otherwise accumulate in it. Pulse rather quick, but otherwise natural.—*To have the above mixture every second hour.*

4 P.M. She complains of pain, of an inflammatory character, in the larynx.—*Twelve leeches to be applied over the larynx.*

June 6, 10 A.M. She has passed a restless night. The symptoms of acute laryngitis became more marked this morning, there being acute pain in the larynx, wih the usual signs of inflammatory fever.—*She was accordingly bled from the arm to* 24 *ounces.*

At noon. The pulse has become more frequent, but is now small and compressible.—*The tube has now been removed;* and she breathes easily by the mouth and nares. There is no œdema of the glottis. —*She was ordered to take one of the following powders, every* 6*th hour.*—R. *Calomelanos, pulv. Jacobi veri, āā gr. iij. Misce. Fiat pulvis.* —*The mixture ordered yesterday was intermitted.*

7*th.* She breathes easily by the mouth.—*Continue the powders.*

8*th.* Pulse 112, small, and weak. Perspiration profuse.

The mouth has now become affected by the mercury.

The wound is granulating well, under the tepid water dressing.

She still complains of pain in the larynx.—*Twelve leeches to be applied over the larynx; and the powders to be intermitted.*

12*th.* The pain in the larynx is now gone, but there is superficial pain and swelling in the hyoid and submental regions.

She has occasional cough, and still expectorates a little mucus by the natural passage.

The wound is healing rapidly.—*Continue the water dressing; and let a poultice be applied below the chin, and rami of the lower jaw.*

July 1. Since last report the patient has progressed favourably, as far as the larynx and wound are concerned. A diffuse abscess which formed superficially in the sub-mental region, has been evacuated by the knife, and the opening is now nearly closed. The wound from the operation is now also nearly closed, and there has existed for the last eight days no direct communication between the trachea and the surface. The patient's voice remains husky. She is now taking wine, and nourishing food.

August 7. The patient, though dismissed only to-day, has been considered as cured for some weeks, as she has remained under medical treatment in the hospital, on account of a rheumatic affection of the articulations of both the upper and lower extremities, accompanied by the usual debility. Her health is now restored; and her voice is natural. *Discharged—cured.*

Remarks.—These cases present many points of interest to the pathologist, and of practical importance to the surgeon.

In regard to the *first* case, there can be little doubt that the dyspnœa arose from a spasmodic affection of the muscles of the glottis, and not from change of structure in the lining membrane of the larynx.

The occurrence of tumours in the neck giving rise, in various ways, to dyspnœa, so as to have demanded the performance of tracheotomy, is by no means rare; but in this case, the tumour was of such a nature, as to render the treatment complicated and difficult, and the ultimate result of it doubtful.

The Bronchocele was simple in its nature, and had nothing peculiar either in its history or disposition, except in its having encroached more on the trachea than might have been expected from its outward appearance.

The treatment adopted for the removal of the thyroid enlargement, was that which is found to be most efficacious when the tumour is of a simple nature, namely, the internal administration of iodine, with the external and topical application of the hydriodate of potass and mercurial ointments, with friction. The efficacy of this treatment was not, however, in this case, fairly tested, as it was not continued after the operation was performed.

On the day on which the dyspnœa occurred, the patient was found to be in an extremely excited and uneasy condition, resulting from the action of the mercury, which had affected the system solely by its external application; and this condition would predispose strongly to the occurrence of the spasmodic affection of the muscles of the larynx, which was excited by the irritation of, or

recent and moderate pressure on, the recurrent or motor laryngeal nerves, by the still increasing Bronchocele.[1]

That the dyspnœa arose from a spasmodic closure of the rima glottidis, and not merely from an inflammatory affection, is evident from the fact, that the dyspnœa was sudden and intermittent, having occurred without any previous affection of the larynx, or alteration of the voice, and also because there was no dyspnœa in the intervals between the fits; and farther, likewise, by the fact, that there was no affection of the voice, such as occurs in all inflammatory affections of the larynx, whether acute or chronic.

This consideration, indeed, is one of the chief points of interest in the case, from its showing how a Bronchocele may occasion dyspnœa to such an extent as to require the performance of tracheotomy, under circumstances too, where it has never, I believe, been hitherto performed.

The operation of tracheotomy in this case was in itself both difficult and uncertain, but no other alternative was left, except that of allowing, as must otherwise be done, the patient to die from asphyxia; and consequently, the operation was not only warrantable but demanded.

The division of a portion of the Bronchocele, and the consequent profuse hemorrhage, were unavoidable, but at the same time, not necessarily attended by much danger; as pressure will be found in such circumstances, a sufficient hœmostatic, when it is firmly and methodically applied. The hemorrhage, however, in this case was rather salutary in its effects; as to it must be attributed the immediate, as well as the subsequent diminution in the size of the tumour, and the consequent removal or diminution of the pressure on the recurrent nerves, or on the trachea itself, which had given rise to the dyspnœa. The chief danger to be feared from the hemorrhage in this case, was the entrance of blood into the trachea, and thence into the bronchi, as the depth of the former from the surface rendered the tube, which was the longest in common use, almost inefficient,—thus illustrating the great importance of having a tube of sufficient length for such cases; as well as for others, where the parts over the trachea have become infiltrated and vascular.

---

[1] The recurrent or motor nerves of the larynx, it will be remembered, lie immediately behind, and by the side of the trachea, at its upper part; and they would necessarily suffer pressure from the increase of the tumour, either directly, or through the intervention of the trachea. That considerable pressure had been exerted on the latter, is evident, from its having been found forcibly displaced to one side, by that part of the tumour which embraced it so closely. The first effect of this pressure would be to irritate or stimulate the nerves, and thus to cause the spasmodic contraction of the muscles of the glottis, to all of which this nerve is distributed. Hence, closure of the rima glottidis would result, giving rise to the croupy or crowing inspiration, with the difficult and prolonged expiration; but after long-continued or severe pressure, the opposite condition—or paralysis of these muscles—would ensue, giving rise to sudden asphyxia, from mechanical closure of the rima glottidis; unless one only of the recurrent nerves was affected, when the closure would be less complete.

In the case, however, of the patient Dixon, the dyspnœa evidently arose from spasm, and not from paralysis, of the muscles of the glottis.

It is worthy of remark, that the tube was removed next day at visit, from there having been no return of the dyspnœa; although the orifice of the tube had been intentionally occluded for some hours previously to its being removed. Moreover there was no recurrence of the hemorrhage, an event which would also have contra-indicated the removal of the tube at that early period; but the surface of the wound had become rapidly covered with plastic lymph, and after this hemorrhage was no longer to be feared.

It is interesting, also, to observe the remarkable diminution of the Bronchocele which occurred in this case. This was no doubt owing, in a great measure, to the extensive local bleeding which followed the operation, and to the subsequent contraction from the cicatrization of the wound; though it may also have been due to the previous treatment, and to the change of locality which the patient had made.

This case then shows that the pressure exerted by a Bronchocele may not only be sufficient to cause so much dyspnœa as to require tracheotomy for its relief, but that the operation may be performed in these circumstances with success. The latter fact points out also the propriety of having recourse to this operation in those cases—not uncommon in districts where the Bronchocele prevails—in which the patient has begun to suffer severely from dyspnœa, as well as from the consequent affection of the lungs and heart,—and where either death has been allowed to take place from the severity of these symptoms, or where the unwarrantable operation of complete excision of the tumour has been had recourse to, as the only apparent means of relief.

In the *second* case also, the dyspnœa was of a spasmodic character, arising, however, not from primary or direct irritation of the muscles or motor nerves of the larynx, but from reflex motor influence, which was excited by the irritation,—from the particles of sand,—of the sensory nerves of the mucous membrane of the glottis, and of the neighbouring parts.

After it had been ascertained that no foreign body was lodged above the rima glottidis so as to cause its occlusion mechanically, the line of practice to be followed was very evident; namely, the immediate establishment of an artificial opening into the trachea, to save the patient from being speedily asphyxiated. Much relief accordingly was felt as soon as the tube was introduced.

The operation was thus performed as a measure of necessity, and on account of the dyspnœa alone; but it was also attended by an unlooked-for advantage, as a few particles of sand which had entered the trachea, were thus afforded an opportunity, though unintentionally, of making their escape.

That the latter advantage was not part of the object or design of the operation, is sufficiently evident from the fact, that information as to some particles of the sand having actually entered the trachea

(To be continued.)