

CASES OF BONE DISEASE AFTER SMALL-POX IN YOUNG CHILDREN.

BY ARTHUR NEVE, F.R.C.S.E., &c.

As far as I can judge from the limited statistics available, over 75 per cent. of the population of Kashmir die in childhood from small-pox. Some of the sequelæ, such as total or partial opacity of the cornea, or destruction of the eyeball, are daily seen in our consulting-room. These are also to be seen in England, but less familiar there are the acute bone and joint affections of which I append a few examples. Cases 2, 3, and 4 occurred during the spring of this year, and the first is published with them because it is probably almost unique:—

CASE 1. *Disease of both elbow and one wrist joint; simultaneous excisions; cure.*—J—, a boy, aged three, suffered from small-pox during September, 1885. He was seen at the Mission Hospital on November 5th. Both elbow joints and the right wrist were swollen and freely discharging pus. The abscesses had burst a month previously. The child appeared strong considering the abundance of the discharge. On the same day, with full Listerian precautions, I excised both elbow joints, and freely gouged the wrist, in which the mischief was centred in the lower epiphysis of the radius. The parts were dressed on the 6th, the 9th, and the 11th. On the 9th the left elbow was found completely healed, the skin over the right elbow ulcerating a little, and the wrist wound granulating rapidly, with scarcely any suppuration. On the 19th the wounds were healed. A small abscess in the right elbow burst on December 1st, and on the 10th the child left the hospital cured, with very good movement of the arms, and having picked up strength completely.

CASE 2. *Complete necrosis of ulna; resection; cure.*—S—, a child, aged one year and a half, had small-pox in February, 1887. A month later an abscess formed behind the elbow, which burst and discharged, at first abundantly, then less. On May 18th he fell, and bone protruded from the wound. On the same day he was brought to the hospital. His whole forearm was swollen and red, and from an aperture at the back a portion of dry smooth bone, apparently the olecranon, projected. Under chloroform this was seized with necrosis forceps, the skin opening slightly enlarged, and a few adhesions separated; the whole diaphysis of the ulna was then removed. An opening was made near the wrist through the skin and through a thin case of cartilage which completely surrounded the site of the shaft. The lower epiphysis was covered with soft granulations. The elbow joint appeared unaffected. A drainage tube was drawn through the tubular hollow and dressings applied. On May 28th the drain was removed, when the cavity rapidly closed with granulations, and the limb promised to be in no way impaired in its usefulness.

CASE 3. *Necrosis of scapula; resection; cure.*—A—, a well-nourished child, six months old, was brought to the hospital on April 22nd with a sinus in front of the left arm-pit, from which watery pus was discharging. An abscess had first formed some weeks previously after an attack of small-pox. The scapula was enlarged, and the sinus led towards it. Chloroform was at once administered, the sinus incised sufficiently to admit the finger, and another incision made at the lower angle of the scapula. The state of things was peculiar. The finger passed inside a distended shell of semi-ossified cartilage; some thin fragments of similar material were loose in the cavity or partially adherent to the walls; and some sharp spicules projected inwards from the spine and neck. With a gouge as much as possible was removed, leaving merely the spine and neck, with the thin shell. For the first few days the cavity was well syringed out; on the 27th the drainage tube was removed from the posterior opening, which had nearly closed. There was a good deal of reaction. By the end of April the whole cavity was filled and distended with granulations, from which there was a slight sero-purulent discharge. On May 12th the wounds were healed, except for slight oozing from the sinus in the axilla; but a slight erysipelatous rash appeared, which extended in an irregular manner for a day or two, disappearing from one part to begin in another. On May 16th the parents took the child home, considering it cured.

CASE 4. *Acute suppuration of shoulder joint; incision and drainage; cure.*—A thin, weakly boy, about six years old, was brought with a large fluctuating swelling over the shoulder. He was only recently convalescent from small-pox. The swelling was not very tense, painful, or red. It was of a fortnight's duration. On April 1st the abscess was opened by a free incision, and the shoulder joint, with which it communicated, well washed out with mercury lotion, and a drainage tube inserted. He did not remain in hospital, but was brought on four or five occasions to have the wound dressed. On about the seventh day the drainage tube was found to have come out; it was not replaced, and when last seen the wound was healed and the boy gaining flesh.

The foregoing are fairly typical examples of a class of cases common wherever vaccination is not practised. So common are they here that bleeding is universally practised by the native hakims during the later stages of small-pox, with the hope of preventing the formation of abscesses! This practice doubtless swells the mortality from a disease always so formidable. Diseases of bones or joints in very young children usually take a favourable course after operation; and if the child has not been otherwise weakened by starvation or bleeding, even when the disease is the result of small-pox, the prognosis is hopeful. In Case 1 three operations of a grave character were performed on the same individual simultaneously. Owing to the softness of the bones, which could be cut with a knife, the whole operation did not take more than half an hour. Post-small-pox abscesses are frequently multiple. In my opinion they should be opened simultaneously and as early as possible, in order to allow of the constitutional state becoming favourable to cure. In Case 2 the ulna came away entire, except the lower epiphysis. The upper epiphysis is at the extreme tip of the olecranon, and was not separated. The curious point is how the joint should have escaped participating in the inflammatory process. Whatever part the epiphyses may play in primary inflammatory processes (and this is as yet not very clear), they, as a rule, play a very important part in limiting necrosis to the diaphysis of bones, as Cases 2 and 3 illustrate—a fact of which surgeons should avail themselves in the pre-sequestal stages of necrosis. This, however, is a subject beyond the scope of the present paper. The other cases require no special comment.

Kashmir.

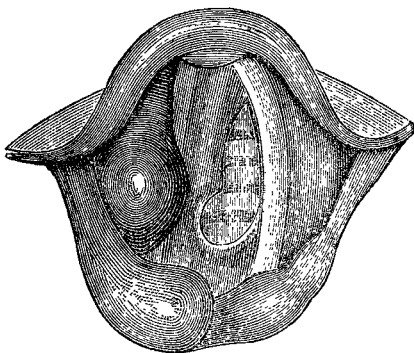
TWO CASES OF
IDIOPATHIC INTRA-LARYNGEAL ABSCESS.

BY GREVILLE MACDONALD, M.D. LOND.

CASE I.—M. L—, a housemaid, single, aged forty, applied at the Throat Hospital on Aug. 27th, 1886, complaining of aphonia and odynphagia, which since their onset, eighteen months previously, had been steadily growing worse. There was a slight dry cough, complaints of a foreign body in the throat, and dyspnoea on ascending stairs. The laryngoscope revealed stenosis of the glottis, due to exaggerated congestion and oedema of the right vocal cord, chiefly subglottic, and of the inter-arytenoid fold. In this subglottic swelling, immediately beneath the cartilaginous glottis, was a spot of excavated ulceration, of which only the overhanging margin was visible. The left cord was congested and swollen, while the right was fixed in the cadaveric position. There was no marked change in the ventricular bands, but the aryteno-epiglottic fold of the right side was cedematous, and the arytenoid cartilage clubbed. The pharynx was anæmic, and presented three well-marked cicatrices on the posterior wall. There was no history of syphilis, although a sore throat of some weeks' duration was admitted as having occurred some fifteen years previously. The case was diagnosed as one of tertiary ulceration, upon which an attack of acute laryngitis had supervened. The localisation of the disease upon one side of the larynx pointed very strongly to some cause beyond simple catarrh. As the wards were closed for repairs, it was impossible to admit the patient. She was put upon ten-grain doses of iodide of potassium, and instructed to suck ice frequently and to inhale a weak alkaline spray every four hours. On Aug. 31st the patient's condition was much aggravated. Then respiration was stridulous, the supra-clavicular spaces receded during inspiration, and

the complexion was slightly dusky. The laryngoscopic appearances are represented in Fig. 1. The subglottic swelling had greatly increased, but receded sharply at the site of the ulceration; the margin of the right cord had almost disappeared, and the œdema of the aryteno-epiglottic fold was intensified. But the most striking alteration was the enormous swelling of the right ventricular band, which on examination with a probe appeared to fluctuate. In this swelling an incision was made on the most prominent point with Mackenzie's laryngeal lancet. Yellow creamy pus immediately welled up. The relief to the breathing was almost instantaneous, although the stenosis appeared unaltered. On Sept. 3rd the œdema of the right cord had entirely disappeared, although there remained some subglottic thickening. The iodide was continued under the supposition that the abscess might be a broken-down gumma,

FIG. 1.

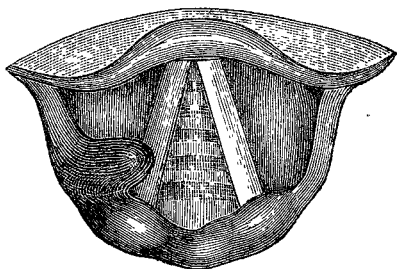


and the patient was ordered to use a weak astringent spray. From this time the improvement was continuous, and on Nov. 30th the laryngoscopic appearances, beyond a slight hyperæmia of the cords, were normal.

Little comment is called for on the above facts. The trouble being of such long duration the etiology was somewhat obscure. The abscess may possibly have been due to an acute inflammatory attack supervening upon a chronic laryngitis; if so, the chronic symptoms were remarkable in disappearing so completely during the short time the patient was under treatment.

CASE 2.—F. W—, married, aged thirty-eight, applied for relief on Jan. 4th, 1887, complaining of odynphagia, more marked on swallowing saliva than with food, a symptom which generally points to the larynx rather than the pharynx as the seat of pain. She had taken cold a week previously, since when the pain had been steadily increasing. The pharynx was normal in appearance. The laryngoscopic image is represented in Fig. 2. The whole of the right side

FIG. 2.



of the larynx was considerably congested; while, projecting inwards from the right aryteno-epiglottic fold, and resting apparently on the ventricular band, was a smooth, dull red, somewhat translucent swelling, partly concealing the vocal cord. To the probe it appeared soft and fluctuating. With the laryngeal lancet pus was evacuated, and the prominence collapsed. The pain on swallowing was immediately relieved. A benzoic acid inhalation was prescribed. At the patient's next visit, a week subsequently, all traces of the inflammatory mischief had disappeared.

This second case is quite of minor interest save from its rarity. Idiopathic laryngeal abscess is scarcely discussed by authors. Morell Mackenzie has collected thirteen cases. Of these six occurred at the root of the epiglottis, four involved the ventricular bands, and three the aryteno-epiglottic folds. Nine were opened, the remainder undergoing spontaneous rupture.

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THE EXPERIMENTAL PRODUCTION OF CHEST TYPES IN MAN.¹

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WHILST engaged in research on another subject, my attention was drawn to the fact that the size and shape of the chest varied as I varied the conditions to which it was subject. I found this sequence of events was absolutely constant, and could be carried out within such wide limits that it appeared to me to prevent an insuperable objection to the present accepted theory of the inheritance of chest types.

Taking a well-marked example of the so-called inherited consumptive chest, I subjected it to conditions that tend to develop the lungs, till it corresponded in size and shape first with the town artisan, then with that of a man of the privileged class, and finally with that of a man of the best class of insurable lives in America. By subjecting that same chest to conditions that tend to reduce the breathing capacity, I brought it back through the same types to nearly that with which I commenced, and I have produced similar results on other chests within a period measured by months. At birth the average male child of all classes has the same type of chest, but at maturity he has that of the class to which he belongs. Here, too, we have one type of chest forming a series of types that have varied precisely as the conditions to which they have been subjected in those classes have varied. Further, there is evidence pointing to the same relationship between conditions of type, in which none has ventured to raise the question of inheritance. We have, on the one hand, the type of chest of those who use wind instruments, or who by their occupation require to greatly use their lungs; and, on the other, the type of those who spend their time in a stooping posture, or who compress their chests either by the instrument they use in their work or by a corset. And there is the same relationship between the size and shape of other parts of the body, and the conditions to which they are subject. We know that the head has been altered in shape by direct pressure; that the muscular and osteal systems change in size and shape according to the conditions to which they are subject; that the colour and thickness of the skin vary in like manner; that the difference between the foot of a Chinese lady and that of a woman who has never worn shoes depends upon their presence and absence respectively; that the difference between the hands and fingers of a pianist and those of a man accustomed to lift heavy weights is produced by their occupations; and that each histological element of the body is subject to the same law. Therefore I contend that the type of man after birth is solely produced by the conditions to which he is subject. Hence the formation of race by man's continuance under the same conditions and its subsequent divisions into sub-races and families by his migrations into new conditions and the minor differences therein. Hence also the difference between the same species of animals under the conditions of nature and of domestication; the difference between the same plants placed under different conditions; the difference between the products of seeds sown in different localities, and the return of man, animal, or plant to former types on being subjected to the conditions that produced that type.

This opens up a wide and most important field for our investigation. We have to ascertain what the conditions are that produce these changes in each part of man that together form a class or type. The difficulties in our way are not nearly so great as will at first sight appear. Great demonstrations are constantly taking place before our eyes of the relationship between conditions and types in those trades and occupations that are carried on around us. Let us ascertain exactly what they can teach us by investigation, and then we shall be able to compare the results with those that will be obtained in other countries. Truly, it will be a work of years, but it will give us a science of man. When we have ascertained what the conditions are that produce these differences in each part of man that together make a class or type, we shall be able to produce that class or type. Further, this investigation will also tell us what type of

¹ A paper read at the recent meeting of the British Association for the Advancement of Science.