R E M A R K S
ON THE
DIAGNOSIS
OF
FOREIGN BODIES IN THE LARYNX.

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READ FEBRUARY 11TH, 1840.

So many cases have been recorded in which foreign bodies have entered the windpipe, and the propriety of extracting them by operation is so well established, that any remarks upon the subject may perhaps appear superfluous. Yet so many of these recorded cases are of a chronic kind, in which an operation was not performed till many weeks or months after the occurrence of the accident, or in which a fatal result ensued, because no operation was practised, as to make it evident that the diagnosis is either attended with much difficulty, or that surgeons have been more reluctant than they should have been, to resort to the only means that can be successful ; except in some rare cases, which ought to be considered only as exceptions to the general rule. It is said indeed by Mr. Porter, that

many children are probably carried off by this accident, who have been supposed to die of croup, and that consequently the difficulty of recognizing the nature of the case makes the occurrence of the accident appear much less frequent than it really is ; and the remark is probably not without foundation, when so experienced a surgeon as Dessault is found to enumerate among the general signs of the accident, “ a difficulty more or less considerable in deglutition, which is sometimes very painful, and a sensible alteration in the voice, which is commonly hoarse, and is sometimes completely prevented ;” the latter sign being in fact by no means frequent, according to the cases on record, and the former being actually rather a sign that the foreign body is *not* in the windpipe, but more probably behind it, in the œsophagus.

Among other points desirable to be ascertained, when the nature of the accident is suspected, is the probable situation of the intruding body, as indicated by the symptoms which it occasions in different parts of the air passages ; I am led therefore to think the following case may not be devoid of interest to the Society :—

On November 18th, I was asked to see Miss S., twelve years of age, who had been suddenly seized, while taking some soup about eight hours before, with violent vomiting, and suffocating cough, which lasted for a short time, and then left her with a noise in breathing, which was somewhat difficult,

and with a sense of pain beneath the cricoid cartilage. She believed she had felt a piece of bone in her mouth at the time, and that she had swallowed it. About two hours after the accident an emetic had been administered by Mr. Davis, the assistant of a medical man in the neighbourhood, which had brought up some solid meat, and seemed to have a little relieved her.

At the time I saw her she was breathing with a croupy noise at each inspiration, but without much labour, and she complained of some pain and tenderness in the larynx, referred more particularly to the cricoid cartilage. She could swallow without any difficulty, and on examination with a pair of curved forceps, it was evident that there was nothing in the œsophagus at the seat of the pain. The finger, passed behind the epiglottis, felt nothing like a foreign body in that situation ; her voice was natural, and there was no cough, nor had there been any since the accident, to which attention would otherwise have been drawn. The tongue was a little dirty, she was flushed, and the eyes suffused, and the pulse quickened, and there was some anxiety of expression. She had been in good health before the accident, except that she had a slight cold the day before, with a sense of tightness across the epigastrium. The lungs appeared healthy, and there was no other apparent cause for the croupy noise and difficulty of respiration, except a good deal of fullness and redness of the tonsils and palate and fauces, which might extend to the larynx, but

which might also have been the consequence of the vomiting occasioned by the accident and by the emetic.

There could, altogether, be little doubt that her supposition was correct, and that a piece of bone had passed the wrong way; but as there were no immediately urgent symptoms, as there had been no threatening of suffocating cough since the accident, now eight hours ago, and the difficulty of breathing was not great, and was less than it had been, and the foreign body, if it were present, must therefore be nearly fixed, and could not be of large size, and as there was much fullness of the fauces, which might occasion some narrowing of the glottis, and as the croupy noise was in inspiration only, as in common croup, it was agreed to leave her till the morning, administering some calomel and antimony, and applying a sinapism to the throat, and then to operate if no change took place.

On the succeeding morning the inflammatory redness and fullness of the fauces had nearly gone, the mustard poultice had relieved her from all feeling of distress in breathing, and she was no longer feverish and flushed; but the noise in respiration was as constant as before, and was equally audible in expiration and in inspiration, and a little pain and tenderness remained below the cricoid cartilage. It was perfectly clear, therefore, that the obstruction was purely of a mechanical nature, and was too considerable to justify an expectation that it would probably be disengaged spontaneously.

Mr. Babington was kind enough to see the patient with me, and concurred in this opinion, and also in thinking that the space between the thyroid and cricoid cartilages was so small as to make an incision into the trachea preferable to an operation in the former situation. I therefore made the usual opening into the trachea, just below the thyroid gland, which was unattended with any hæmorrhage, and removed a small piece of two rings of the trachea, in the centre of the incision, which was made through three others also, and endeavoured to get the piece of bone thrown out by making the patient cough repeatedly, but without avail ; feeling the foreign substance with the probe just above the opening, I then introduced a pair of forceps and extracted it, not without some little violence, from the manner in which it was fixed. It was a portion, as it seemed, of the spine, shewing the curved surface of the canal of a vertebra in a neck of mutton, nearly half an inch long, and a third of an inch wide, the outer surface being very rough and irregular, so as to account for its fixed position below the glottis.

The breathing immediately became free from sound, and she had neither cough nor other unfavourable symptoms after the operation. The wound was at first lightly approximated, but the air scarcely escaped after the patient returned to bed, and the voice was perfectly restored in about three hours, by the union of the surfaces ; the edges were therefore brought together more completely the next day,

and the healing process went on favourably, without the occurrence of any circumstance worth notice.

Firstly. In by far the greater number of instances, a foreign body which has entered the windpipe continues to be moveable within the trachea. The chief circumstances determining the diagnosis of this accident are thus enumerated in the useful work of Mr. Ryland, the most recent upon the diseases of the larynx.

From laryngitis, or croup, he says, “ this accident may be distinguished by the absence of fever at first ; by the very sudden manner in which the symptoms came on ; by the *intermission* in the difficulty of breathing, which sometimes continues for an hour or two ; by the *noise* occasionally heard when the foreign body is impelled against the vocal cords ; by the *excessive violence* of the *cough* after this occurrence, and most *particularly* by the chief difficulty of breathing being during the time that the *expiratory* process is going on ; whilst in laryngitis the chief difficulty is in the act of inspiration.”

No doubt this account is generally correct, when the intruding substance is *within the trachea*, even when it has been surrounded by tenacious mucus, causing it, at the time of operation, to be adherent to the membrane of the tube, so as not to be immediately expelled, as in a case of Sir Charles Bell's at the Middlesex Hospital ;* or when it has adhered by some roughness, as in a case of a piece of the

* Medical Gazette, vol. v, p. 74.

jaw of a mackarel, extracted by Pelletan.* Yet it will be observed, that in the preceding case scarcely one of these symptoms corresponded with what really took place ; the attack was indeed sudden, so as by itself to render the case scarcely doubtful ; but there *was* a good deal of feverish excitement when I first saw the patient ; there was *no intermission* whatever in the difficulty of breathing, and for the same reason *no noise* could be heard by the striking of the substance against the vocal cords ; there was absolutely *no cough* whatever after the first few seconds ; and instead of the noise in breathing being chiefly in *inspiration*, it was heard, on the day of the accident, only in *expiration*, and on the following day it was equally audible in *both portions* of the respiratory process.

Secondly. When a foreign body is moveable within the trachea, it has been frequently found to pass into the right bronchus ; and some interesting cases of this kind have been published by Mr. Key, Dr. Houston, Mr. Liston, and others, who have shown the absence of the symptoms before enumerated, if it remains almost entirely in this situation, together with the new stethoscopic signs of its presence in the bronchus, viz., the freedom of the larynx from disease, and the occasional or permanent cessation of respiration in the lung of the affected side.

Thirdly. If the foreign body is actually fixed within the vocal cords, instant and sudden death

* Clinique Chirurgicale, vol. i, p. 6.

has usually been the immediate result ; whether it has been impacted in this situation at once, or has first moved freely within the trachea, and has been subsequently fixed in the glottis during a fit of coughing, as in an interesting case related by Mr. Porter.*

Fourthly. If it is fixed within the larynx in some other situation, as in the ventricles, without causing immediately fatal effects, a foreign body is yet generally said to occasion much distress and danger. "It will produce," it is said by Dr. Stokes, "more or less *violent and incessant attacks of cough and dyspnœa*, in which the lungs are found, on auscultation, to be sound, and the larynx to be the seat of the constriction ; the permanency of which, together with the history, will point out the nature of the case." "It may happen," says Mr. Porter, "that if the body be round and polished and small, it shall occasion no symptom of distress, except *the cough*, and the *difficulty of breathing*, and the patient may exist for a long time without the occurrence of those morbid actions which render the accident certainly fatal." The cough and obstruction to respiration being expected to be present, it is seen, even in such comparatively mild cases. These urgent symptoms were present, threatening suffocation, in a case in which Pelletan operated six weeks after the accident, and was obliged to slit up the cricoid cartilage to extract a button from this place ;

* Porter on the Larynx.

and in a case of Dessault's, which was fatal two years after a cherry-stone had been lodged in one of the ventricles, the same occasional fits of suffocation were produced by it ; and Dessault advises the division of the thyroid cartilage when the foreign body is fixed in this situation.

But, fifthly, that a foreign body should be fixed in the larynx *below* the glottis, and that the symptoms should be much modified by this position, does not appear to have been noticed by writers upon this subject; except that the cough, in cases of foreign bodies within the air-tube, arising from the direct irritation of the glottis, the absence of this symptom, it has been remarked, may be considered as a presumptive proof that the foreign body is fixed somewhere in the tube. Even this remark, however, requires some correction, since it must be recollected that the fatal effects upon the *lungs* may occasion cough, although without so much distress, as in the cough produced by direct irritation of the glottis. The part of the larynx immediately below the glottis is not enumerated by any writer, as one of the situations in which a fixed foreign body is to be looked for, although some distinctions have been attempted to be drawn of the symptoms likely to be occasioned by the different situations I have before alluded to, viz., the glottis itself, or one of the ventricles of the larynx, or the tracheal tube, or one of the bronchi. I have lately looked over the accounts of between seventy and eighty cases related in various works, of the entrance of foreign bodies

into the air-passages, and have met with only two that correspond with the preceding case in the nature of the symptoms. One of these is related by M. Lescure, in the fifth volume of the Memoirs of the Academy of Surgery, and in it part of an apricot kernel appears to have been fixed in exactly the same position, directly under the cricoid cartilage. It differs indeed from mine in not having an operation performed, and being therefore fatal in sixty hours, from emphysema and congestion of the lungs, but it corresponds with mine in the *entire absence* of cough, the *constant whistling* sound, the unaffected state of the *voice*, and in the *fixed pain* at the part, and in the child being able to laugh, and speak, and eat, *as usual*, on the following day.

A second case is related by Mr. Bullock, in the eighteenth volume of the Medical Gazette, p. 951, in which a quartz pebble was lodged in the same position as in my patient, "partly within the cricoid cartilage, partly in the trachea," and in that also the symptoms were so mild as to mislead the attendant, notwithstanding the continued assertion of the child that the stone was lodged in the part, although they were much more severe than in mine in the first instance, there being for four days "a sense of soreness in the throat, with nausea, which was accompanied by occasional *slight paroxysms of cough*, with a copious *mucous* expectoration, and hoarseness of the voice."

It will be observed, that in this latter case there was some cough, which was not at all produced in

either of the two others; there was on the fifth day acute inflammation of the mucous membrane, after which there was *entire absence of cough*, and no *return of uneasiness in the throat*, till her death, eight weeks after the accident, from acute pneumonia of both lungs. The pebble was retained in its situation by a thick layer of organized lymph, and the calibre of the tube was so nearly obstructed as to render it difficult to pass an ordinary-sized probe downwards.

It appears then that in three cases in which a foreign body was fixed in the situation of the cricoid cartilage below the glottis, the severe paroxysms of coughing, which are invariably looked for as evidence of the presence of a foreign body, (but which really belong essentially to its presence in other parts of the tube,) were entirely absent in two, and were mild in the third, so as to lead the surgeon to believe they could not arise from the entrance of the pebble, as the child asserted, and were afterwards entirely absent in the last month of her life;—that even the voice was unaffected in two of the cases, although hoarse in the third case;—but that in all three cases there was soreness and uneasiness in the part where the foreign body was fixed, a *noise* in inspiration or expiration, or in both, from the mechanical effect of the intruding substance, (mistaken indeed for croup in one of them,) and in all, the *patient asserted* that something had been *swallowed*.

Where such circumstances as these are present to guide the surgeon, I conceive he is imperatively

called upon to operate without much delay, since out of the only three cases, with which I am acquainted, in which the foreign body has been thus lodged and fixed near the glottis, two were fatal ; one within sixty hours, by the immediate effects upon the lungs, though without any other symptom than in my own case ; the other at a later period, by the slower influence of inflammation ; while in my patient a more fortunate result was met with, in consequence, it cannot be doubted, of the removal of the foreign body, at an early period, by an operation, which is seldom very difficult, except in very young children, and perhaps is never attended with any important risk.