

# A Clinical Lecture

ON

## A CASE OF FOREIGN BODY IMPACTED FOR FORTY-SIX DAYS IN THE LEFT BRONCHUS; OPERATION; RECOVERY.<sup>1</sup>

By JOHN H. MORGAN, F.R.C.S. ENG.,

SURGEON TO CHARING-CROSS HOSPITAL AND THE HOSPITAL FOR SICK CHILDREN, GREAT ORMOND STREET.

GENTLEMEN,—Among the many casualties to which you may be summoned there is none which calls for more care, more thought or consideration, and often for more prompt and decided action, than the entrance of a foreign body into the air passages. Not only may the immediate consequences be dangerous and even fatal, but the subsequent and often remote contingencies may be of the gravest peril. The nature of the foreign body may have much to do with the results that follow its entrance into any part of the respiratory tract, and to enumerate a few of the many substances that have passed beyond the epiglottis and have been drawn downward in a sudden and ill-guarded inspiratory effort will be almost sufficient to illustrate some of the subsequent occurrences of such an accident. The more common amongst these are perhaps articles in the shape of food, which, being in the mouth, are drawn in by a strong and sudden inspiration while the epiglottis is off its guard, the glottis expanded and the larynx quiescent, such as portions of un-masticated food, plum and cherry stones, seeds, ears of grass, pieces of bone, &c. Teeth, artificial and natural, also have not infrequently been the cause of serious danger by becoming impacted in some portion of the tract, and other articles, such as shells, buttons, and pieces of money, which should not have been in the mouth at all, are usually drawn in during talking or laughing, or as the result of a sudden and unexpected blow or jerk which has caused the patient to gasp and thus draw the substance into the windpipe. Other articles, such as whistles, portions of trumpets, puff-darts, &c., have been drawn in by the inspiratory effort made preparatory to the expiratory one, which would produce sound from the former or effect the expulsion of the latter. Liquids, when bland and free from irritating properties, are often inhaled but are quickly and easily expelled; but blood or chloroform which may enter the trachea during operations may be followed by serious after results, the one by its coagulation in the bronchi and the other by its irritant properties. There are very many other articles which have been found to enter the air passages and give rise to trouble, but the enumeration that I have given will serve to illustrate what I wish you to regard. The consequences of such an accident will often call for such immediate action on your part that you have no time for other thought, but as often as not you may have to consider what will be the further changes in the nature of the substance or in what position it may possibly be arrested, either temporarily or permanently. For instance, portions of food, a pea, or a bean will be sure to swell, and thus become larger after a short sojourn in any part of the passage. On the other hand, a bullet or a shot, a bead or a coin, will not alter in consistence, but will by its weight fall to the lowest portion of the tube which its size will allow it to enter, and will not easily be induced to alter its position. Pieces of glass or china may by their angularity become fixed by penetrating to some extent the mucous membrane, or the point of a pin or needle or a puff-dart may pass through the trachea and cause ulceration of an important vessel. In many instances the foreign body, by completely obstructing the larynx or by setting up violent spasm, will cause almost immediate death; but in those cases where you have time to reflect you will have to consider, in the first place, whether there is a foreign body in the air passage at all, and, secondly, in what part of the tract it is lodged. With regard to the first question you must bear in mind that the substance may have entered the larynx and have

been coughed up and ejected or even swallowed, although the irritation may continue and spasmodic cough may recur for some time afterwards. Again, it is not infrequent that substances, generally of the nature of food, so obstruct the pharynx or upper part of the œsophagus as to excite all the symptoms that would arise from their presence in the air passages, and the passing of a bougie down the œsophagus may be needed to determine this fact. Again, if the history is not distinct the symptoms may be due to an attack of acute laryngitis, or croup, or laryngismus, or the pressure of a tumour upon the recurrent laryngeal nerve. As regards the second question, you will be aided in your judgment of the probable situation in which the offending body may lie by an inspection of a duplicate. Thus, a pea or a cherry stone may by their lightness be carried up and down at each effort to cough, and at any moment may come into contact with the under surface of the vocal chords and excite a fatal spasm. Therefore, whenever possible obtain a duplicate, particularly if it should happen to be a gold coin, and consider the situation in which it is most likely to be arrested.

The symptoms which will make you suspect that there is really present in the air passages something in the nature of a foreign substance are violent and spasmodic cough, causing intense distress and a feeling of suffocation, more or less lividity of the face, and intense congestion of the veins of the neck. This may pass off and be succeeded by a period of ease of greater or less duration, to be succeeded again by the recurrent cough and dyspnoea. During this period you may have time to consider the positions in which the foreign body may most likely lie. In the larynx even large bodies, such as food or artificial teeth, may lie below the epiglottis, and after the first attack—which, however, is often fatal—may become impacted and allow time for further action. Smaller and lighter bodies may become fixed in the rima or ventricle of the larynx, where their pressure will generally be manifested by frequent attacks of spasm and by alteration of the voice, with a sense of discomfort and even of pain. Here the laryngoscope may afford you material aid. With the assistance of a solution of cocaine painted over the back of the tongue and pharynx a view may be obtained of the larynx, and the foreign body may be seen and in some instances extracted with proper forceps. But even if the body can be seen by this method it may often be necessary to perform tracheotomy, or even to divide the cricoid cartilage and extract the body either through the wound or through the mouth. Time, however, may not permit even of these deliberate proceedings, and to save life it may be necessary at once to perform laryngotomy and then to take measures for the removal of the irritant substance. When possible chloroform should be given on account of its allaying spasm and allowing of greater deliberation. But should the substance pass the vocal cords where will you expect that it may be arrested? This will depend greatly upon its nature. If it be heavy or of such a material that it swells by absorption of fluid it will sooner or later become fixed in some division of the bronchi, but if it be light it may lie for a time in the trachea, but shift its position by reason of coughing, and, coming in contact with the chords, will cause recurrent spasm and dyspnoea of a very serious nature. Here again tracheotomy is required at a very early period, and even if the substance cannot be extracted by forceps or expelled by the patient's own efforts, aided as these may be by inversion and succussion, there is no need to fear immediate danger, because, however severe the spasms, breathing can be safely carried on through the opening in the trachea. Sometimes from the nature of the substance it may become fixed in a part of the trachea, where it will rest for a long period without causing much distress. In one case that occurred at the Hospital for Sick Children a small piece of chicken bone forked at one end was found in the trachea below the vocal chords. In another child a piece of china was supposed to have been swallowed in August, 1894. Pain, cough, and vomiting of blood ensued immediately. She was taken to a hospital and an instrument passed, but nothing was found. She improved until several weeks later, when she was admitted to the Hospital for Sick Children on Nov. 2nd, and remained there for a month, but was readmitted a few days later on account of recurrence of a bad attack of dyspnoea. There was occasional stridor, but there were no obvious signs in the lungs. The history and the earlier symptoms pointed to the probability of something being impacted in the œsophagus, but upon examination by the laryngoscope it was thought that something could be seen posteriorly below the vocal

<sup>1</sup> This case was under the care of Dr. J. Mitchell Bruce and that of the lecturer.

chords, and on Dec. 18th I performed a high tracheotomy, when a triangular shaped piece of glass of pink colour and with sharp edges was at once expelled through the opening. The wound was sutured, and the child made a rapid recovery. Probably the case of the celebrated engineer Brunel is familiar to most of you, since it appears in every text-book, and it illustrates the fact that a coin such as a half-sovereign may lie in the trachea, but need not necessarily obstruct entirely the passage of air into the bronchi, and may act as a sort of valve, but may easily shift its position. In his case tracheotomy undoubtedly saved life, but the coin was eventually ejected from the mouth, where its effect upon the vocal chords could not produce suffocation, by reason of the lower opening into the trachea. Now the case which has induced me to bring this subject before you is an instance of the progress of a foreign body still further into the air passage, and the notes which I shall read you will give you a very good account of the symptoms which indicate, and which follow, such an event as the complete obstruction of a large bronchus, in this instance the left, by an adventitious substance. You know that the right bronchus is somewhat the larger of the two and also that the septum at the subdivision of the trachea is slightly to the left of the median line, and thus is explained the fact that foreign bodies more frequently pass into the right than into the left division of the trachea.

A healthy girl aged eight years and nine months was admitted under the care of Dr. Mitchell Bruce on Sept. 25th, 1894. Three weeks previously, whilst sucking a plum-stone which she had previously cracked, a portion of the stone fell back and, as was supposed, was swallowed. Immediately she complained of pain in her neck, and she was given a crust of bread with a view of removing it. Next day she was seen by a medical man who gave her some medicine and stood her on her head in hope of dislodging the stone. This is not a form of treatment which I should advise you to follow in similar cases unless you are perfectly prepared with all the apparatus necessary for tracheotomy. At that time, and since, she is stated to have complained of pain on the right side of the heart. Poultices were applied and constantly renewed with a view to relieve the pain, and the child was kept in bed for three weeks, during which time she took very little food. She was unable to sit up, but slept well, except when the cough troubled her, which it usually did about 4 A.M. On admission she appeared fairly well nourished. The temperature was 99.6° F. She had slight paroxysms of coughing both day and night. The left side of the chest was flattened, chiefly over the second and fifth ribs, and the movements of this side of the chest were deficient, the interspaces being sucked in during inspiration. Vocal fremitus was greatly diminished, especially below the level of the third rib. The apex beat was felt in the fifth interspace half an inch external to the nipple. The whole of the left side of the chest was dull excepting over the left of the sternum, and this dulness extended over the whole of the left lung posteriorly. The right side was hyper-resonant. On auscultation some breath sounds were heard under the left clavicle which were lost about the third interspace, and some feeble breath sounds were audible behind in the supra-scapular region, below which all was dull. On Oct. 4th, after consultation, it was decided to attempt the removal of the foreign body by operation. The patient, after struggling violently without ill effect, was anæsthetised with chloroform. The colour and breathing were good. Mr. Waterhouse made an incision in the mid-line from the cricoid cartilage down almost to the interclavicular notch. The trachea was exposed and a scalpel passed through between the third and fourth rings from below upwards well below the level of the isthmus. No mucus escaped, but a small amount of blood which entered the opening was expelled. In spite of the inversion of the patient, with vigorous stimulus to the back, the obstructing body remained *in situ*. A bent wire, with looped extremity downwards, was passed down the left bronchus, but without at first discovering any obstacle to its further passage. A double looped strand of silver wire was then passed, with the result that the object sought was distinctly felt. On each of several attempts muco-purulent secretion was brought away on the instrument, and a small quantity was expelled through the opening after each trial. On attempting to pass the little finger the child became distressed, the veins of the neck becoming distended and turgid. The child was allowed to partially recover consciousness and the laryngeal reflex was then excited with a feather. The breathing became very spasmodic and violent,

but without the effect of expelling the foreign body. At no time during the operation was the child greatly distressed. A large oval tracheotomy tube was tied in with tapes, and horseshair stitches above and below drew the skin incision together. During the ensuing night the child was in some distress, but she was relieved on substituting a Parker's tube, which was removed at intervals, but did not become clogged with mucus. During the next few days there was a good deal of cough and mucous expectoration mixed with some greenish-yellow pus, but in no great quantity. I saw the child in consultation with Dr. Bruce and Mr. Waterhouse, and it was decided to defer further treatment until the signs of bronchitis had subsided. On Oct. 19th the child seemed in a favourable condition for further proceedings. Chloroform and afterwards ether were administered. Inversion was first tried and cough was then excited by a feather passed down the trachea, but no effect was produced upon the position of the foreign body. A long probe, slightly bent, was then passed down the left bronchus, and a hard substance was distinctly felt at a distance of about five inches and a half from the lower margin of the tracheotomy wound. The wound was then held open by retractors, and a long pair of forceps, curved for the last inch of their length, was passed down the left bronchus, but the contact of the retractors making it difficult to be sure of the causation of any foreign body these were removed, and on again carefully introducing the forceps the hard substance was felt, the forceps carefully opened and closed, with the result that the foreign body was at once withdrawn through the wound. This was found to be a part (nearly half) of an irregularly broken plum-stone, which had been impacted with its apex downwards, and had been seized by the edge of the broader broken surface. The wound was left with only a guard wetted with carbolic lotion. During the following night there was but little cough, but a considerable quantity of sero-sanguineous fluid escaped from the edges of the wound. This continued for a day or two, but gradually diminished and very shortly ceased and the wound closed. The temperature never rose above the normal.

From experiments kindly made by Dr. Batten, registrar to the Hospital for Sick Children, Great Ormond-street, on the cadaver of a child about the same age and height it appeared that the body must have lodged, just as described in the case reported by Dr. Cheadle and Mr. T. Smith,<sup>2</sup> at that portion of the left bronchus where it bifurcates into its two main divisions and below the branch which passes to the upper portion of the left lung, and the surgical aspects of this case are almost identical with the one described by them except for the very much longer period during which the lung had been obstructed. In their case the operation was performed on the eighteenth day and in the case now described on the forty-sixth day after impaction, the ages of the two children being nearly identical and their recovery being equally complete and satisfactory. This is by no means the least interesting feature of the case. How to explain the circumstance that a large proportion of the right lung can remain for so long a period inert and entirely or almost entirely deprived of all functional activity, and then resume its functions apparently without drawback, are questions which must be left for a physiologist to solve.

## RUPTURES OF THE PANCREAS: THEIR RELATION TO PANCREATIC CYSTS, WITH SOME REMARKS UPON TREATMENT.<sup>1</sup>

By R. F. C. LEITH, M.B., C.M., F.R.C.P. EDIN., &c.,  
LECTURER ON PATHOLOGY AT THE SCHOOL OF MEDICINE, EDINBURGH;  
PATHOLOGIST TO THE ROYAL INFIRMARY, EDINBURGH; EXAMINER  
IN PATHOLOGY AT THE GLASGOW UNIVERSITY, ETC.

INJURIES of the pancreas are rare. The size, shape, and anatomical position of this organ are in the main responsible for the comparative immunity which it enjoys. Being from 8 in. to 9 in. long, 1 in. broad, and somewhat strap-shaped, it lies transversely across the posterior abdominal wall at

<sup>2</sup> Transactions of the Royal Medical and Chirurgical Society, vol. lxxi.

<sup>1</sup> A paper read before the Medico-Chirurgical Society of Edinburgh on July 3rd, 1895.