

## **Case of foreign body in the air-passages / by James Struthers, M.D.**

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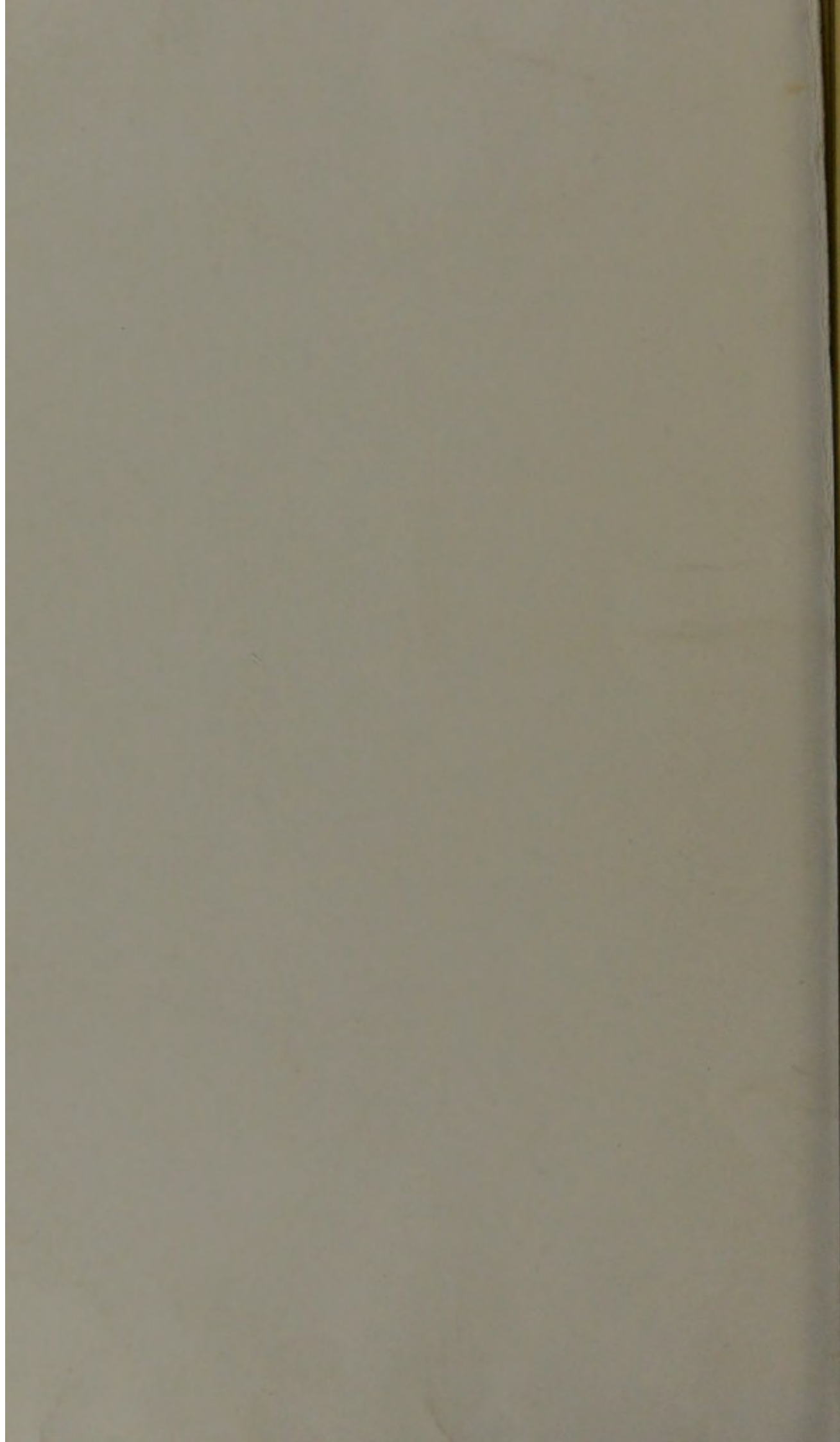
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CASE  
OF  
FOREIGN BODY IN THE AIR-PASSAGES.

BY  
JAMES STRUTHERS, M.D.,  
LEITH.

[FROM THE MONTHLY JOURNAL OF MEDICAL SCIENCE FOR NOVEMBER 1852.]

IN October 1844, Thomas Neal, a footman, æt. 22, while eating part of a fowl, and laughing at the same time, was suddenly seized with a violent fit of coughing, and a feeling of suffocation; he became blue in the face, felt a sharp pain in the chest, and was sensible of a part of his food having entered the windpipe. These symptoms subsided in about half an hour, and never returned. An emetic was administered, and acted freely; and both fluids and solids were swallowed without difficulty. From about an hour after the accident a tickling cough, with a wheeze in the throat, continued to trouble him occasionally, but gave little inconvenience; and he went about his work as usual, as if nothing had happened. He still, however, was impressed with the conviction that there was something in his windpipe, and pointed to a spot a little to the right of the upper part of the sternum, saying that he felt it there.

About three months after the accident, the cough began to be accompanied by the expectoration of white frothy sputa, which, without any other change in the symptoms, gradually increased in quantity during the ensuing twelve months. At the end of that time he was seen on several occasions by Sir Benjamin Brodie, and entered St George's Hospital, London, where he remained for a fortnight, and was then advised to go to the country. About a month afterwards he, for the first time, observed the sputa to be tinged with blood, and to have a foetid odour. During the two following years the cough was more frequent, the expectoration very profuse, and the quantity of blood in the sputa gradually increased,



as did also the fœtor of the breath. This last symptom became so marked in 1848 as to oblige him to leave his situation, for which he was in every other respect fit. During the greater part of 1848, he had exacerbations of the cough every two or three weeks; at these periods there was increased fœtor of the breath, the sputa contained a considerable quantity of florid blood, and he occasionally brought up as much as half a pint of pure blood at a time. In the beginning of November 1848, he had a rigor, followed by pain in lower right side, increase of cough, and shortness of breath, and the sputa became of a brown colour (pneumonia?); for this he was treated by a physician in Musselburgh. In the beginning of the following month, he entered the Royal Infirmary of Edinburgh, under the care of Dr Bennett. He was then pale, but by no means emaciated; he complained a good deal of cough, which occurred at frequent intervals, and was accompanied by profuse expectoration of viscid sputa, very fœtid and stained with blood. On examining the chest, there was dulness on percussion over the inferior three-fourths of the right side, both in front and behind, but most decided a little below the nipple. The left side was resonant throughout.

On auscultation, the vocal resonance was found increased over the whole of the right side, particularly at a spot a little below the nipple. At the middle of the same side, posteriorly, a gurgling râle was heard over a space two inches square; in the other parts of this side, the respiratory murmur was very harsh, and much obscured by mucous and sibilant râles; it was least affected at the apex. On the left side the respiratory murmur was puerile throughout, and unaccompanied by any râle. The appetite was good; bowels regular; urine healthy; he slept well; was free from pain; and the voice was unaffected. During the next three months, there was but little change in his condition. For weeks at a time the sputa were free from blood; but every two or three weeks they became bloody for several days at a time, and then also the cough was more frequent, the expectoration more profuse, and the fœtor of the breath and sputa greatly increased; while the urine deposited large quantities of pink urate of ammonia, and contained numerous crystals of the oxalate of lime. After a residence of three months, he left the Infirmary in the beginning of February 1848. For the next six weeks he enjoyed tolerable health, being able to walk a considerable distance without inconvenience, experiencing shortness of breath only on walking fast; the cough continued pretty constant, with copious expectoration of whitish sputa, generally fœtid, and only occasionally tinged with blood. Once or twice he expectorated several small masses of a brown colour and of some consistence; these he imagined to be portions of the foreign body.

Towards the middle of March his appetite and strength began to fail; he lost flesh and became feverish, thirsty, and restless; was obliged to confine himself to the house; and suffered from shortness of breath, even when at rest; the cough and expectoration continued



much the same; he had no rigors, and was free from pain. On the morning of the 24th, he awoke suffering from great increase of cough and shortness of breath, and continued during the day to expectorate, at intervals of a few minutes, large quantities of frothy sputa, deeply tinged with blood, and much more foetid than usual. I was asked to visit him at his own house on the 25th, and found him much weaker than when I had last seen him, some weeks previously. The cough was constant, the expectoration profuse, the sputa frothy and mixed with florid blood; the breath and sputa had a gangrenous odour, which was very perceptible on approaching the bed. He had no pain, his chief complaint being of great weakness, dyspnoea, and occasional feeling of suffocation. The respirations were 45; the pulse 130, weak and wiry. On examining the chest, the right side was found scarcely to move on inspiration, and was universally dull on percussion; all natural respiratory sound was absent; gurgling was audible over the greater part, both in front and behind, with coarse mucous and subcrepitant râle, towards the upper and lower parts. Although the voice was weak, the vocal resonance was much increased, and there was very distinct bronchophony over the inferior two-thirds. There was no friction sound audible. The left side was very resonant, and, with the exception of puerile respiration, and some subcrepitous râle, inferiorly, presented nothing unusual. During the next three days, he became rapidly weaker; the cough and dyspnoea increased; he could speak only in monosyllables; the respirations rose to 68, and the pulse to 140; and he expectorated daily about two pints of thin bloody sputa, which had a strong gangrenous odour, and latterly flowed in an almost continuous stream from the mouth. On the 29th, he became typhoid, had hiccup and slight delirium, and died in the evening.

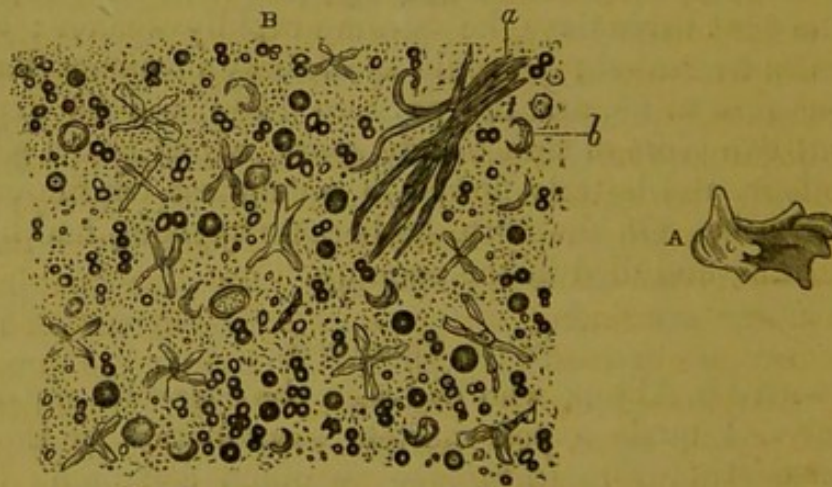
#### *Sectio Cadaveris.*

Along with Dr Alison, who had seen the case with me during the last two days, I made a post-mortem examination of the body 22 hours after death. The features were much collapsed; there was some yellowness of the skin; and a copious discharge of thin brown fluid from the mouth and nostrils. Percussion of the chest elicited the same sounds as during the last days of life.

On opening the *thorax*, the right lung, with the exception of the lower part of the anterior border, was found firmly adherent to the walls. The adhesions were short, dense, and of a white colour. The lung was removed without laceration; it was somewhat diminished in bulk, of a dark red colour, and had a pulpy feel. The apex was occupied by a closed cavity, the size of a small orange, which was distended with a brown dirty-looking fluid of the consistence of cream, and having a most intense gangrenous odour. The wall of this cavity approached the pleura superiorly; its inner surface was very irregular, presenting numerous shreds of disorganised pulmonary tissue. At the middle of the lung posteriorly, and about half



an inch from the surface, there was another cavity, the size of a walnut, lined with a dense gray-coloured membrane, one line in thickness, and broken up in several places; it was partially filled with a dirty-coloured fluid, and opened directly into a bronchial tube, the size of a crow quill, at the other extremity of which the foreign body was found at a future stage of the dissection. In the neighbourhood of this cavity, and throughout the whole of the inferior and posterior parts, the lung was riddled with numerous small cavities, varying in size from that of a hazel nut to that of a pea. Some of these were closed and filled with a fluid similar to that found in the one at the apex; others were nearly empty, more or less anfractuous, and communicated freely with the bronchial tubes; the walls of some were formed of a thick dense membrane, those of others were soft and ragged. The middle part of the anterior, and a small portion of the inferior, border were in a state of gray hepatisation, and were the only parts free from cavities. On laying open the *right* bronchus, a small piece of bone was found at the bifurcation of the middle primary division; it was lying almost loose, and came away without any force being used; it was quite clean, and bore a strong resemblance to part of a vertebra of a small animal, being of an irregular elongated form, and presenting several sharp spicula (Fig. A).



A. Piece of bone, natural size.  
B. Fluid from abscess, magnified 350 diameters, containing shreds of tissue (a); broken down pus globules (b); crystals of triple phosphate and urate of ammonia.

The mucous membrane at the part was thickened, but quite free from ulceration, and not more vascular than that of the other bronchi. The *trachea* and the *bronchi* of both lungs were stained of a dark gray colour, but otherwise presented nothing abnormal. In the left *pleura* there were three or four ounces of clear serum. The lung was healthy, except a small portion at the inferior border which was hepatised, and studded with small, gray, indurated nodules, the size of corn-pickles. These consisted, as ascertained by the microscope, of accumulations of altered epithelium, with much granular fatty matter. The apex of the lung was free of deposit, and there was no tubercle in any part. The *bronchial glands*, especially those on the



ght side, were greatly hypertrophied, several of them being as large as pigeons' eggs; they contained no foreign matter. The *heart* was of the normal size; its muscular and valvular structures were healthy; and all the cavities contained both firm decolorised and dark loose clots. The *blood*, examined under the microscope, presented the red and white corpuscles in the usual proportions. The *abdominal viscera* were in all respects normal.

The fluid from the abscess at the apex of the right lung, on being examined under the microscope, was found to contain small shreds of fibrous tissue, broken down pus globules, and a large number of crystals of the triple phosphate and of the urate of ammonia, Fig. B.

*Remarks*—This case presents a very good illustration of the length of time during which a foreign body may remain in the air-passages without giving rise to any urgent symptoms. There can be no doubt that the freedom from distress was due to the bone having, almost from the first, become fixed in the bronchus, and having remained in the same position till death; had it either been fixed in the larynx or trachea, or remained loose in the passages, it must have given rise to a train of symptoms quite different from that manifested throughout the case. For three months, the only symptom of there being anything amiss in the chest, was the occasional occurrence of slight cough and wheezing, resulting, most probably, simply from irritation, and not from the body becoming loose in the passages.

At the distance even of fifteen months, so slight was the disturbance of the respiration, and so doubtful the evidence of the existence of a foreign body, that Sir B. Brodie—the patient informed me—expressed his opinion that there was nothing in the air-passages, and considered the case one of chronic cough, from which recovery might soon take place. A similar opinion seems to have been entertained of the case when under treatment in St George's Hospital, as no proposal was ever made to the patient to have an operation performed; nor, indeed, would such have been justifiable unless, on physical examination, undoubted evidence of obstruction in the chest had been discovered. It was not till a month after he had left London, and sixteen months after the accident, that the sputa became bloody and foetid; and this seems to have been the period at which the disorganising process first commenced in the lung. The importance, in such cases, of having recourse to the stethoscope, and of not trusting to the disappearance even of every *symptom* of the presence of a foreign body soon after its supposed entrance into the air-passages, is still better illustrated by a case mentioned by M. Bouis, in which, after the first few minutes, the patient for a whole twelvemonth had not a single bad symptom; at the end of that time the foreign body—a cherry stone—was expectorated; a copious purulent expectoration followed; and the patient died exhausted in three days.



The first opportunity I had of examining Neal, was in the latter end of 1848, four years after the accident. The history of the case then was such as to excite a suspicion that a foreign body had entered the air-passages at the time supposed by the patient, and had remained there ever since ; while the physical examination of the chest established the existence of an open cavity of some extent near the middle of the lung. Such being the state of matters, all operative interference seemed to be contra-indicated ; as, even had all doubts of the presence of a foreign body been removed, the probability was, that it would be lying in the cavity, and therefore beyond the reach of instruments. I am not aware of any case of recovery, whether spontaneous or by operation, being on record in which more than two years had elapsed from the date of the accident. In those which have lasted longer, death took place sooner or later from disorganisation of one or both lungs, either from tuberculosis or gangrene ; and the fatal issue would seem to have been equally certain, whether the foreign body remained in the lung or was expelled by the efforts of nature. When the latter event has taken place, as it has done ten or even seventeen years after the accident, the case has either terminated suddenly, or the morbid process has gone on unchecked by the removal of its original cause, the disorganisation which had taken place before the expulsion having been so great as to prevent recovery. Had the bone been removed in this case, even four years after the accident, there is good reason to believe that recovery would have taken place, as only a small portion of the lung was seriously implicated, the general symptoms mild, and the constitution of the patient but little affected.

A point of considerable pathological interest in the case, is the absence of all ulceration at the part where the foreign body was impacted ; the only change discovered, after careful examination, being thickening of the mucous membrane. That the bone must have remained all along in the place where it was found, is almost certain ; otherwise, from its comparatively small size and its spongy texture, it would have been frequently projected up to the larynx, giving rise to paroxysms of cough, none of which ever occurred ; besides, there was no thickening of the mucous membrane in any other part ; and the cavity which was first formed opened directly into the tube at the mouth of which the bone lay. Another point of pathological interest, was the existence in the fluid from the gangrenous abscess at the apex of the lung of large quantities of the crystals of the triple phosphate and urate of ammonia, formed, no doubt, on the spot by the destruction and decomposition of the surrounding tissue. Their form was exactly the same as that in which they exist in the urine.







