

this would already indicate that the vesicular murmur originates in the pulmonary parenchyma. This was confirmed by auscultation over other parts of the lung, particularly in places where the respiratory murmur is normally well heard and characteristic, such as the lateral region beneath the axilla. The sound had the usual characters of the vesicular murmur, the inspiratory phase being distinct and prolonged, while the expiratory was scarcely audible. It seemed obvious that the expiratory sound produced at the orifice of the tube, although conducted freely to the parts of the chest most nearly in contact with the root of the lungs, was damped by the pulmonary parenchyma, and therefore inaudible over the periphery of the lungs.

2. The tracheal tube plugged and the pharyngeal one open, so that breathing was carried on through the narrow pharyngeal tube. We have here almost the precise conditions of laryngeal breathing. The lower orifice of the pharyngeal tube opening into the wider tracheal tube affords the conditions for a *veine fluide* during inspiration, while the upper orifice of this tube opening into the pharynx gives the conditions for a similar sound during expiration. Auscultation of the trachea gave the usual characters of tracheal breathing—namely, loud expiratory and inspiratory murmurs, nearly equal in intensity and duration. At the root of the lungs behind there was the usual bronchial breathing, and over the rest of the lungs the regular vesicular murmur.

3. A narrower tube inserted into the orifice of the wide tracheal tube. Here we have again the conditions for a *veine fluide* at the internal orifice during inspiration, and at the external orifice during expiration. Auscultation over the trachea showed that the inspiratory sound was much louder than the expiratory, the sound originating at the inner orifice of the tube being better carried than that originating at its outer orifice. The sounds in this experiment were nearly the converse of those with the tracheal tube wide open, in which case, as already mentioned, the expiratory sound was much louder than the inspiratory. A very striking contrast was produced when during auscultation with open tube the latter was suddenly stopped by the plug bearing the smaller tube, the inspiratory sound in the one case closely resembling the expiratory sound in the other, both in quality and intensity. The results over the root of the lung and elsewhere were somewhat similar to those in No. 2.

Looking to these observations as a whole, we seem to be led to the following conclusions. First, the sounds produced at the glottis or larynx are freely conducted by the dense tissues comprising the trachea and bronchi, and are thus audible wherever these hard structures are in such a position as to carry the sound to the surface. In this way they may be communicated in the opposite direction to the current of air, so that the expiratory sound is audible down the trachea and at the back, where the root of the lung is nearest to the surface. It may be inferred that bronchial breathing generally is due to conduction by more or less solid tissue. Second, the vesicular murmur takes origin in the extreme distal part of the respiratory apparatus. In all the forms of the experiment the characters of the respiratory murmur proper remained unchanged, and even when at the root of the lungs there was a loud expiratory sound, this was not communicated over the general surface of the lungs. It does not lie within the scope of our subject to consider the exact mode of origin of the vesicular murmur, whether by the *veine fluide* in the multitudinous infundibula or by some other method, but the seat of origin seems sufficiently indicated by these observations.

I made also some observations as to the propagation of the voice produced in the artificial larynx, but without any result worthy of note. I would only remark that when the patient breathed with the voice-reed in position without vocalisation the respiratory murmur was exceedingly feeble or absent, evidently because little air could obtain passage by the sides of the reed. Indeed, so little passes that he can only wear the reed about ten or fifteen minutes continuously.

*Report by a Committee of the Glasgow Pathological and Clinical Society.*

"The committee having considered and carefully gone over the whole of the facts set forth in Dr. Coats' report, agree to adopt it as their report. In particular, the committee are quite satisfied as to the bearing of these facts on what is by far the most important question involved—viz., the origin of the so-called vesicular murmur, and that it must

be considered to be perfectly well established that the presence or absence of a glottis or of any corresponding arrangement causing a *veine fluide* at the anatomical site of the larynx has no influence whatever in the production of the normal vesicular murmur.

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DAVID NEWMAN, JOSEPH COATS.

"May 26th, 1886."

## ON A CASE OF IMPERFORATE ANUS.

By SIR WILLIAM MACCORMAC.

THE particulars of this case may be worthy of record, as illustrating a practice somewhat different from that usually adopted.

On March 21st, 1886, I was requested by Dr. Duncan, of Henrietta-street, to see a child born two days previously. The anus was well formed, but almost immediately terminated in a pouch about half an inch beneath the surface. On careful and repeated examination, no trace of impulse or proximity of the bowel could be made out. We decided, therefore, that it was preferable to perform colotomy in the left groin, rather than undertake what promised to be a hopeless search for the bowel in the natural situation. A small incision was made in the usual place, and after the structures had been divided in succession, the intestine at once presented in the wound; it was sutured to the skin, and afterwards opened. Meconium escaped, and the abdominal distension, which before was very considerable, shortly subsided. The operation created no disturbance; the child took its food eagerly, slept well, and there was no sickness. The intention was at a later period to pass a probe or blunt instrument from the opening in the sigmoid flexure downwards towards the anus, and in this way ascertain the condition of the rectum, to what extent it might be deficient, and how far distant it terminated from the external cul-de-sac. On April 12th this was accordingly done, and, contrary to expectation, only a quite thin septum was found to exist between the rectum and the anus. It was divided with great ease upon the rounded extremity of a director, which was caused to project, and a free opening established, a well-perforated drainage-tube being subsequently passed from one opening to the other to facilitate the bowel being washed out, and to prevent the opening into the groin closing, which it showed a disposition to do. The child made an equally good recovery from this operation, and continued perfectly well for some days; then symptoms of acute peritonitis suddenly set in, and it died on April 17th.

On examination after death, there was a considerable amount of lymph and fluid in the abdominal cavity. The upper portion of the sigmoid flexure had been opened, and was firmly attached to the abdominal wall. The rectum was found full of a semi-solid mass of faecal matter, evidently of some duration, and this condition no doubt accounted for the total absence of impulse in the region of the anus. The rectum was found to be complete, with the exception of the septum already spoken of; and there was nothing found in the region of either operation to account for the fatal result. After removing and slitting open the intestine, a small perforation was found in it about mid-way between the opening in the groin and the anus, and resting against this a small scybalous mass of faeces. It was as the result of the ulceration and perforation of the bowel at this point that peritonitis took place.

In those cases which are frequently met with where the bowel terminates at an unknown distance from the anus, the performance of Littre's operation gives the child immediate relief, and is attended by comparatively little danger; time is gained for considering what the next step should be at a time when the child is older and better fitted to bear a further operation; and from the opening in the groin the condition of the extremity of the bowel can be ascertained with tolerable accuracy. When practicable, the natural channel can be re-established, with the great advantage of having an exact guide to the position of the extremity of the gut, an advantage which all will appreciate who have ever had to make the difficult and often fruitless search for the blind extremity of the bowel in cases of imperforate anus.

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