air, in the pleura, is a common cause of considerable displacement of the liver. Then, also, as a common cause, we have a dilated heart; and, less common, fluid in the pericardium. Tumours of various kinds between the liver and the diaphragm, in the substance of the diaphragm, and between the diaphragm and the lung, are still less common causes of displacement downwards of the liver.

CLINICAL LECTURE

ON

PLEURISY WITH EFFUSION IN CHILDREN; DIS- PLACEMENT OF THE HEART; EMPYEMA "NECESSITATIS"; SUPERFICIAL TUMOUR; RECOVERY.

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GENTLEMEN,—The case I am about to bring under your notice on the present occasion is that of the girl Isabella G., aged 10 years, at present in the hospital. It is about three months since this child was first brought to me for advice from a remote part of the country. Her condition at that time was as follows. She was pale, spanæmic, and dejected, having wholly lost that look of vivacity you expect to see in a child of her years. On making the least exertion, her respiration became very hurried; and she had been in this state for at least six weeks before I saw her. Still she never complained of pain in the side, or of acute symptoms of any kind. Now, the aspect of the child and the dyspnoea at once directed my attention to the condition of the chest; and, on stripping the little patient, I found manifest enlargement of the entire left side, from the clavicle in front and scapular ridge behind down to the base. Over this entire side, vocal vibration was absent; and respiration, distinct at the top, was inaudible inferiorly; and the heart was displaced to the right of the sternum. Such, in general terms, was the child's condition about the middle of September last; and, as pleurisy with effusion had not been suspected—no doubt owing to its very insidious advent—the probability is, that the left pleural cavity was filling with fluid for a month or six weeks before the child was brought to me for advice.

The treatment adopted was the syrup of iodide of iron, ten drops three times a day. Repeated blisters were applied over the left side, which was afterwards painted with a strong solution of tincture of iodine. By these means, the fluid gradually and steadily disappeared; the child regained her rosy colour and sprightliness; and she could run and play about without the breathing being affected. Simultaneously, however, with the exhibition of this treatment, a small abscess pointed under the left nipple, between the sixth and seventh ribs, and gave vent to a steady though not very copious discharge.

I then lost sight of the case till the 20th of the present month, when the child was again brought to me, apparently in rude health. Her colour was good; there was no distress of respiration; and she looked, on the whole, fat and well. Certainly, her general condition was incompatible with fluid in the pleural cavity, at least to any extent. On stripping the child, a circumscribed tumour without pulsation, of about the size and shape of a goose-egg, occupied the lateral and posterior portion of the left side. There was still appreciable dulness over the left side, and a manifest dipping under the left clavicle, and flattening of the left anterior half of the chest generally; and the left nipple was on a lower plane than the right. As the tumour, oval in shape, and placed transversely, occupied the lower lateral and posterior portion of the left side, we were not enabled to detect any deformity at the base of this side, if it did exist. Vocal vibration could be felt over the left side till we came upon this circumscribed tumour, where it was lost. Respiration was also audible over the same region, but inaudible over the tumour. The heart remained vertically in the mesian line; and the left half of the præcordial region was more resonant than it would have been had the heart occupied its normal position. The external opening under the left nipple was not pervious. These symptoms and physical signs coexisted with a pulse, temperature, and excreta, all healthy.

I have already told you that the generally improved appearance of this little patient contraindicated the presence of pleural effusion. Still you may say, How is the displacement of the heart, and the appreciable dulness on percussion over the left side, and the presence of this large circumscribed tumour, to be explained? Well, as regards the displacement of the heart, in the early stage of this case this viscus was pushed to the right of the sternum. It has receded, no doubt, but not to its normal position, as the apex-beat and the comparative resonance on percussion over the left half of the inframammary region clearly

prove; the latter physical sign demonstrating, at the same time, that it is not to the presence of fluid that the cardiac displacement is due. To what, then, is it due? Most probably to pleuritic adhesions, which may retain it there for life.

We next have to account for the slight dulness on percussion over the superior portions of the left side, and the flattening of the left anterior half of the chest, amounting to concavity under the left clavicle. Now, the most usual agent in causing contraction and depression after pleurisy is the adhesive matter which has been poured out during the attack. This, coupled with the mechanical pressure exerted on the lung from the fluid in the pleura (which, in this case, was probably of some months' duration), has tended to diminish the size of the viscus; and the thickened condition of the pleura, acting as a kind of capsule, is more than a match for the expansive influence of inspiration. Hence we have the lung diminished from pressure, the pulmonary pleura thickened, with costo-pulmonary pleural adhesions, all tending to account for the flattening and concavity of the side, the dulness on percussion, and the diminished vocal vibration. However, as our patient is young, and the tissues relatively more elastic, it is to be hoped—indeed, I have every confidence—that the inspiratory force will eventually gain the day, by dilating the lung, and restoring it, if not wholly, at least to a great extent, to its normal area, more especially as there is no spinal deformity.

How is the presence of this large tumour at the base of the left side to be explained? We have already said that an "empyema necessitatis" was established in this case; by which we mean that an external opening spontaneously formed under the left nipple, giving vent to a continued discharge, which, in a circuitous way, no doubt, materially assisted in draining the pleural cavity. This external opening became impervious from some cause; and the fluid having percolated out of the pleural cavity into the more superficial structures, and its external vent being thus interrupted, and there being no direct opening by which it could recede into the pleural cavity, it has become thus circumscribed and localised, in the comparatively superficial manner which you see, at the base of the left side. Our first object was to establish the external communication, which was done by the application of hot poultices; and the result is, that the tumour is gradually becoming flatter and disappearing; but, should this prove a tardy process, the introduction of a drainage-tube might be advisable. The child is taking ten-drop doses of the syrup of the iodide of iron three times a day; and the tumour is painted with a concentrated solution of iodine.

This case exemplifies the latent manner in which pleurisy with effusion may supervene: no fever, no pain, no cough, no symptom of its occurrence beyond a languid, colourless expression, accompanied with dyspnoea on making the least exertion. Now, of the various modes by which pleuritic effusions are removed, *ceteris paribus*, we must regard the means set up in this case as favourable. It is certainly more to be desired than the establishment of a direct communication between the bronchial tubes and pleural cavity, which occurrence is explained by the inelastic fluid keeping up a continual pressure against pleuritic adhesions; these adhesions being usually more capable of resistance than the lung itself, it gives way, and the fluid is poured directly into the bronchial tubes. Of these two means, you will readily see, the external fistula is to be preferred to the internal, as the occurrence of the latter establishes pneumothorax. But a more salutary means of removing pleural effusions than either of the afore-mentioned, is to be found in the reciprocal action which sets up between the serous and mucous membranes, exemplified in the establishment of profuse expectoration without any symptom or physical sign of a fistulous opening having been established. This reciprocal action, first described by the late Dr. Greene of this city, has now become well established; and even reciprocal action between pulmonary and abdominal membranes is proved by the setting up of diarrhoea, and the simultaneous disappearance of pleural effusions. Further still, the skin and kidneys, in many instances, seem as if they specially took on vicarious action for the removal of pleural and pericardial effusions.

And now, gentlemen, with respect to the treatment of this latent sub-acute pleurisy, with copious effusion, occurring, as it usually does, in relaxed and spanæmic constitutions, antiphlogistic or heroic measures of any kind are not admissible. If mercury be thought advisable, the red iodide or corrosive sublimate, in doses varying from one-sixteenth to one-thirty-secondth of a grain, according to the age of the patient, combined with bark, may be tried; but, in the great majority of cases, the iodide of potash or soda will be more suitable; and still more suitable (as almost all these patients are manifestly spanæmic) will be found the preparation we have employed in this case, and with such good results; viz., the syrup of the iodide of iron. This, combined with the application of blisters or a strong tincture of iodine, will usually be all the pharmacological means required; good food, pure air, and cleanliness, will do the rest. Unless tuberculosis be in the background, pleurisy with effusion in children is usually a benign disease.