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LARYNGO-TRACHEITIS,

TERMINATING FAVOURABLY AFTER TRACHEOTOMY.

BY

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CASE OF LARYNGO-TRACHEITIS.

(*Read before the Medico-Chirurgical Society, 19th June* 1850.)

Mrs Donald, æt. 30, residing in Greenside Lane, wife of a painter in Mr Croall's factory, about seven months pregnant, on the evening of the 15th of January 1850, after exposure to cold and wet, was seized with the symptoms of an ordinary catarrh, to which she paid little or no attention.

On the 20th, pain in the larynx, with dyspnœa, was superadded. The difficulty in breathing gradually became more intense, but as the patient had been occasionally subject to asthmatic paroxysms, the increasing danger of the symptoms was disregarded. On the morning of the 29th, however, her husband became alarmed, and applied to Mr Hugh Balfour for medical advice.

He found the patient propped up in bed, unable to occupy the recumbent posture, and suffering from repeated paroxysms of severe dyspnœa. Mr Balfour ordered leeches to be applied to the larynx, and an emetic to be immediately administered. The leeches were not obtained, but the emetic was taken, and caused violent retching, without, however, any abatement of the symptoms.

The same evening I was requested by Mr Balfour to see the patient, as he thought it probable tracheotomy would be necessary. I accordingly saw her about midnight, when the following was her condition :—The pulse was about 100 in frequency, weak, but jerking, and every two or three minutes a paroxysm of intense dyspnœa, threatening asphyxia, occurred. On examining the fauces, the uvula and soft palate were considerably injected and swollen, and by pressing down the tongue, I was enabled for a moment to catch a glimpse of the epiglottis, projecting straight up, much thickened and enlarged. This examination caused a violent fit of coughing and dyspnœa.

As the dyspnœa was occurring in well-marked paroxysms, differing in intensity, I deemed it advisable to try the effect of antispasmodic remedies, before resorting to the extreme measure of making an artificial opening in the trachea ; so a combination of sulphuric ether, with the muriate of morphia, was prescribed to be taken every half hour, till relief was experienced. Directions were given to summon me should the patient become worse.

Before daylight I was roused by an urgent message—" That Mrs Donald was dying." On hastening to her house, I found her sitting up, tossing about in bed, gasping for breath, the pulse almost imperceptible, the countenance much flushed, the eyes protruding, and a cold profuse perspiration breaking on the forehead. Soon afterwards Mr Balfour arrived, and we at once decided that tracheotomy was the patient's only chance of safety from impending asphyxia. Owing to the convulsive movements of the muscles attached to the larynx, and the strong contraction of the sternal portion of the mastoid muscle, which rendered the trachea deeper, careful dissection proved almost impossible. The difficulty was also augmented by the shortness and narrowness of the patient's neck, and the less than usual rigidity of the tracheal rings. During the operation, the flushing of the countenance became changed, first into purple, then a bluish lividity; the pulse entirely imperceptible ; the respirations very much prolonged, not above four or five in the minute ; so it was imperative to open the trachea without delay. This was accordingly done, and an opening made

sufficient for the introduction of a middle-sized tube. Its insertion caused violent fits of forced expiration; and by partly closing the orifice, a considerable quantity of venous blood, which had entered the trachea, was expelled. Still, however, the breathing was not so free as might have been expected, and the patient having communicated by signs the desire to say something, wrote upon a slate, that she felt there were some "pieces of skin" to come away. The friends were ordered to watch the patient vigilantly, and clear out the tube repeatedly with a feather. About noon a most violent paroxysm of coughing occurred; and her husband at last succeeded in extracting from the inner orifice of the tube a large piece of firm membranous lymph, having a semi-tubular form. Soon afterwards she was seen by me, the breathing being comparatively easy; but the patient repeated her assertion, there was much more *skin* to come away. Pills, containing two grains of calomel with a little hyoscyamus, were ordered to be taken every four hours.

January 31st.—A large-sized tube has been substituted. Several smaller pieces of membrane have been coughed up during the night. The patient now first experiences pain in the chest; and examination shows, over the whole front, the existence of innumerable bronchitic râles. There is much difficulty of expectoration, resulting in the discharge of very thin viscid sputa, which speedily concrete on the sides of the tube. The pulse is 100, excited, but having little strength in it. Sixteen leeches to be applied to the upper part of the chest, the calomel pills continued, and an expectorant mixture, containing ipecacuan wine, and sweet spirits of nitre, occasionally given.

Evening.—The leeches have been applied, and the bleeding orifices encouraged to bleed freely. Pulse 120, weak. Breathing considerably relieved, but large gushes of a thin gummy fluid come from the tube. A blister to be applied over the upper part of the chest.

February 1st—*Morning.*—Easier to-day; the blister having shifted during the night, has greatly extended the amount of vesicated surface; pulse 90, soft; bronchitic râles not so loud or numerous; breathing less hurried. During the night there passed through the tube a dense piece of membranous lymph. Another portion has been flapping against the end of the tube, but is not detached.

Afternoon.—Dr Graham Weir saw her with me, and during our visit, I succeeded in detaching, with a probe bent into the form of a hook, a piece of greyish buff coloured membrane, about two inches long and an inch broad, not possessing a perfect tubular character.

February 2d—*Morning.*—Breathing continues easy. No more membrane has come away, and there are now no symptoms of any more being present. Râles in the chest more dry, and as if the ramifications of the bronchial tubes were clogged with more consistent mucus.

Afternoon.—Dr Weir again saw her with me. During our visit she had several well-marked labour pains. On examination by Dr Weir, the os uteri was found slightly dilated, admitting the point of the fore finger. She got some castor oil in the forenoon, which has acted once freely. To have an injection, consisting of a drachm of laudanum in solution of starch.

Evening.—There has been no return of labour pains, but the uterus is strongly contracted. The skin is hot and dry, and the countenance flushed. To take some Mindererus' spirit, with a little sweet spirits of nitre, every three hours.

February 3d—*Morning.*—During the night labour pains recurred every five minutes, but were checked by another starch and opium injection, and they have not returned. Pulse 120, soft and small. On examination of the chest, there was marked improvement in the bronchitic sounds heard on the right side; but on the left side, between the lower half of the scapula and the spine, there is slight dulness, with small crepitation, occasionally but obscurely heard during inspiration. Owing to the profuse discharge still coming from the blistered surface, no examination can be made of the anterior part of the chest. A large mustard blister to be applied to the back on the left side. The gums

are now affected by the calomel, a red margin and mercurial fetor being distinct,—so the pills are to be discontinued.

February 4th.—The crepitation heard yesterday is more extended, but does not appear quite so minute. She is now under the full influence of mercury. Pulse 110 ; countenance flushed ; breathing easy, except when collections of mucus require to be expectorated. The sputa are very tenacious, some of a rusty colour, others streaked with blood. To take a pill, containing half a grain of tartar-emetic and a third of a grain of opium every three hours.

Evening.—Labour pains recurred since visit, but were checked by the injection as formerly. The two first pills caused retching, so they are to be halved, and taken every two hours.

February 5th.—The patient feels distinctly the movements of the child, but the pains have not again appeared. Pulse 120. All œdema of the fauces and uvula having disappeared, and the epiglottis being no longer visible, there is reason to believe that the larynx is now free ; and as it is likely to keep up the disease in the chest, the tube has been removed, and the patient breathes quite easily without it. The blistered surface on the chest is still suppurating freely.

Examination of the back discloses, on the right side, puerile respiration, with a few cooing and sonorous râles. On the left side we still have an extension of the pneumonic symptoms, the upper part beneath the scapula being dull, and having little vesicular respiration, while all below is slightly dull, with crepitation slightly intermixed with cooing or sonorous râles. Sputa not so abundant, but having the same character. She has been regularly taking the halved pills, without their producing sickness,—so a fourth of a grain more of antimony is to be added to each.

February 7th.—Since last report, the patient has been progressing favourably. The puerile respiration on the right side is now nearly absent ; the crepitation on the left side not so abundant, and coming from larger air-vesicles. Pulse 100. Sputa now of a thick greenish mucus, neither stained nor streaked with blood.

To have a mixture containing ipecacuan wine, sweet spirits of nitre, and tincture of hyoscyamus.

February 8th.—Has passed a restless night, owing to the difficulty of expectorating the tough mucus. Complains of pain in the left shoulder, passing through to the back. Cannot lie on the right side. Pulse 98. Countenance slightly flushed ; skin moist. Wound in the neck contracting. Most of the sputa coming from the natural passage.

Examination of the back discloses on the left side not nearly so much bronchial râle, and in the upper part the vesicular murmur apparently returning. On the right side respiration still slightly puerile, mixed up with dry and moist râles.

February 10th.—Considerable improvement. Wound of neck closing fast. This morning she coughed up from the throat a piece of membrane, about an inch long.

February 12th.—Wound of neck healing rapidly ; no air passes through it, except during a fit of coughing. Breathing quite easy. Voice almost natural.

February 15th.—Wound of trachea quite healed. Bronchial râles on both sides of the chest ; dry on the right side. To take a pill, containing a grain of the sulphate of bibeerine, half a grain of ipecacuan, and extract of hyoscyamus, three times a day. To have a more generous diet.

February 16th.—Complains of pain in the left side, and swelling, with tenderness, round the thyroid cartilage. Voice slightly hoarse. To have a mustard blister applied to the side.

February 17th.—The hoarseness continues ; but the pain is removed.

February 19th.—As some tenderness around the thyroid cartilage still exists, six leeches are to be applied, and a smart purge taken.

February 21st.—Pain in the neck removed, and hoarseness almost entirely gone.

February 23rd.—Discharged cured.

I need only further add, that, on the 1st of April, Mrs Donald was brought to bed, at the full time, of a remarkably fine boy; and at the present date (April 25th) she is in the enjoyment of perfect health.

I have deemed this case worthy of record, as it appears to me to possess some features peculiar to itself, which I can scarcely find recognised in any systematic work on diseases of the trachea and larynx, nor have I been able to find cases precisely similar detailed in any of the medical journals. All the cases recorded by Louis as examples of croup in the adult, may be distinguished from what we are now considering by the primary disease commencing in the fauces and pharynx, and gradually extending downwards till it affected the larynx and trachea,—in fact, closely resembling, if not identical with, the epidemic disease known under the term of diphtherite, which has been so well described by Bretonneau. Moreover, in some of Louis's cases, the laryngitis was a secondary affection, occurring during the progress, or after the termination, of a debilitating primary disease.

Dr Stokes has clearly pointed out the difference between the so-called primary and secondary croup; and though he does not deny the possibility of the primary affection occurring in the adult, in his work on "Diseases of the Chest," he has been unable to furnish any example of the disease.

Dr Cheyne, who had most advantageous opportunities for observation, makes the following remark:—"In no part of Britain, I imagine, is croup more prevalent than in Leith and its immediate vicinity; yet, in the course of nearly fifty years of extensive practice, my father has not seen one instance of croup occurring after puberty, while he has attended many cases between the tenth and fourteenth year, both in delicate and robust children."

There is only one case which I can find in the journals closely resembling that which I have detailed above. It is narrated in the volume of the "Lancet" for 1838, and is entitled, "A Case of Primary Laryngo-Tracheitis."

The patient was a female, in the eighth month of pregnancy; the symptoms of impending suffocation were imminent; the child died in utero; but tracheotomy was not performed, owing to the woman having been reported to have coughed up a piece of false membrane. The autopsy showed "the epiglottis erect, hard, and wonderfully thickened, representing the fourth of a sphere, instead of a plane." "The trachea was lined with a buff-coloured membrane, nearly as thick as the rings of the trachea, extending to the bifurcation; it formed a perfect cylinder, except at one point posteriorly, and at the lower part of the trachea, where there was a longitudinal deficiency. The cylinder of false membrane was free inferiorly; it was attached above." "The folds of the membrane forming the edges of the glottis were hard and swollen; the ventricles of the larynx were hardly visible, being nearly obliterated by the inflammatory thickening and exudation."

It is a subject for consideration in this instance, whether tracheotomy should not have been resorted to, as a chance of saving the patient's life. When we reflect on the obstructed condition of the glottis in acute laryngeal affections, we must at once see the extreme difficulty, if not utter impossibility, of any considerable amount of membranous exudation being expectorated through the greatly narrowed or closed orifice; and it is surely better to give the patient a chance of relief, by performing tracheotomy, than to leave him to certain and immediate suffocation. The difficulty of ascertaining whether any membrane has been formed cannot be urged as an excuse for the non-performance of tracheotomy; for if, as is now almost universally admitted, we are authorised to open the trachea, in the uncomplicated acute laryngitis, whenever the danger of suffocation becomes imminent, that operation is surely more strongly indicated, when we have reason to suspect that the obstruction of a false membrane in the larynx or trachea is superadded to the constricted state of the glottis.

These remarks will not apply to the treatment of croup in children, for many circumstances tend to render the propriety of operation in their cases much more doubtful. The lungs are so frequently seriously affected in the infantile disease, and the bronchi plugged up with adventitious membrane, that careful examination of all the features in each particular case must be made, ere we can resort to tracheotomy, even as a forlorn hope; for we should always keep in view the fact, of the truth of which every practical man must be well aware, that, when a case terminates unfavourably, after surgical interference, the fatal event is certain to be ascribed to the operation; and thus discredit may be brought on what, when employed with judgment, might prove a valuable acquisition in surgery.

That Mrs Donald's case, though it has some features in common, cannot be strictly ranked as an illustration of primary croup, is, I imagine, sufficiently evident. I am inclined to consider it as an extension of the common acute inflammation of the larynx to the trachea, where, owing to some idiosyncrasy on the part of the patient, it assumed the form of lymphatic exudation.

On inquiry, I find that Mrs Donald, when an infant, had a most severe attack of croup, from which she recovered, under the treatment of the late Dr Abercrombie.

It is worthy of remark, that the intense inflammation of the bronchial tubes and left lung, which became developed after tracheotomy was performed, did not prove fatal. This appears to me to corroborate the opinion, that inflammation, induced by direct injury, though it almost invariably proves of a most acute character, is not actually so much to be dreaded as when it occurs idiopathically.

I have never seen, and never wish to see, in my own practice, bronchitis of a more intense nature affecting so universally both sides of the chest.

That the infant in utero retained its vitality is certainly most sur-

prising, when we take into account the imperfect oxygenation of the maternal blood, which existed for a considerable period; but it, at the same time, evinces the power which nature bestows on the offspring of accommodating itself to the influences affecting the vital economy of the parent.

With regard to the diagnosis of the disease detailed above, little can be said. Mrs Donald was not seen by me soon enough to admit of much time for deliberation respecting the precise extent of her disease.

So far as I can ascertain, I find that she had no cough till the day before I saw her; and, when it did appear, it had not the ringing metallic character heard in the croup of children. The stridulous breathing was certainly present, but that may be referred to the œdematous state of the glottis. I believe, therefore, that unless some portion of membrane has been expectorated, or some appearance of exudation has been found on the fauces, no suspicion of false membrane in the larynx and trachea can be excited. It is fortunate that the indications for treatment in acute laryngeal and tracheal affections of the adult are alike, and that we are called upon to provide an artificial means of respiration, whenever the natural passage becomes inefficient for the purpose.

It must be clearly understood, that I speak only of acute primary idiopathic inflammation of the larynx and trachea; for, in the diphtheritic kind of inflammation, the propriety of operation is much more doubtful. In it there is an unhealthy state of the system to be combated, which is probably more dangerous than the local affection; and it is the confounding these two distinct diseases—laryngitis and diphtheritis—which has caused so many apparently contradictory statements to be made by authors.

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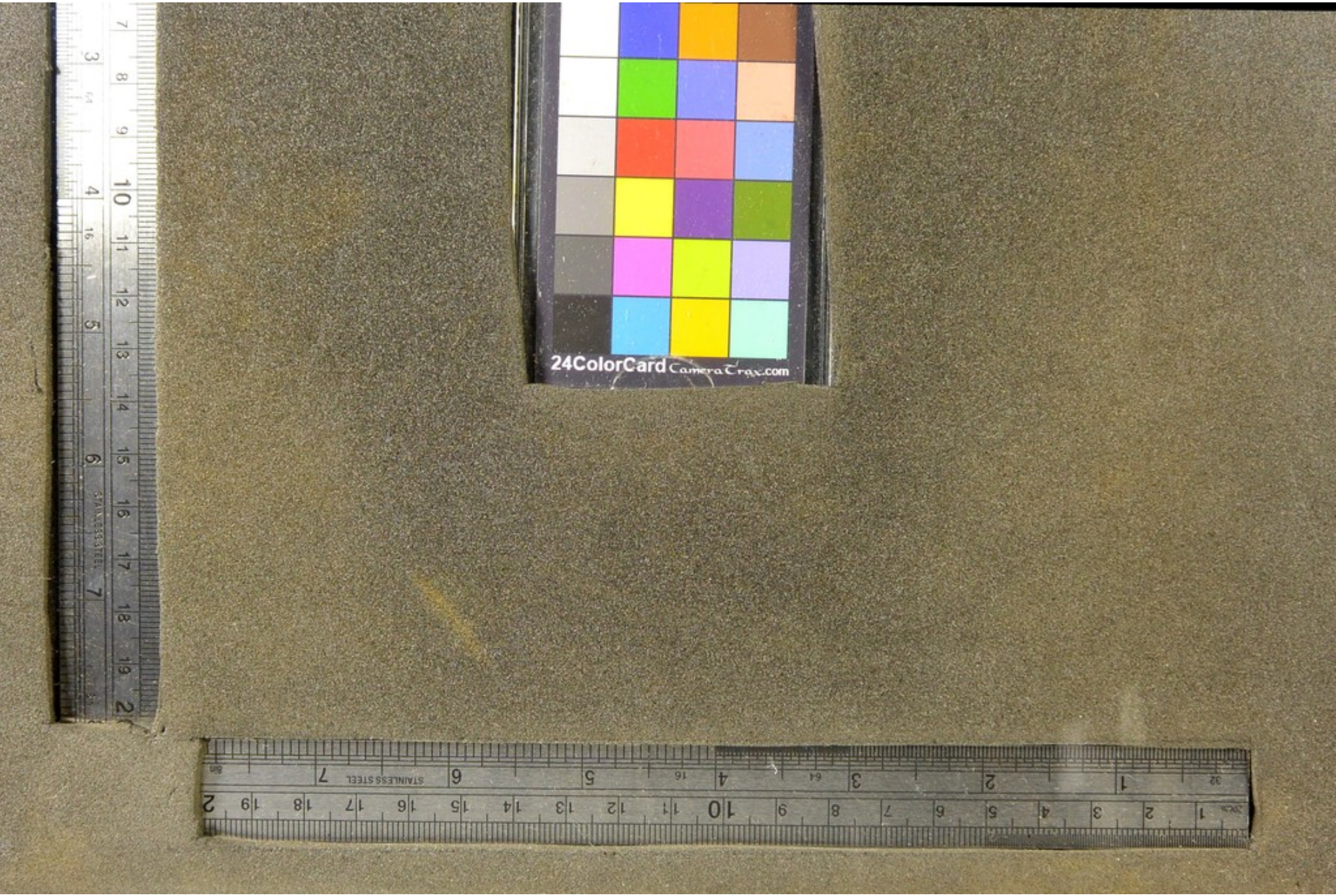
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