ERYTHEMA AND DEATH FOLLOWING INTESTINAL CATARRH.

BY

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We give a rather full account of the following case of erythema, as it has an important bearing on the discussion opened by Professor Sir William Osler at the annual meeting of the British Medical Association held at Birmingham last year.

During the patient's illness some of the severe symptoms had led to a suspicion of tuberculosis or cerebro-spinal meningitis, especially the latter.

A child, under 2 years of age, had been ill for six weeks in the hottest part of last summer. The illness commenced with green stools. Mucous casts of the bowels were passed, sometimes with blood. There had been vomiting, retraction of the neck, and unequal pupils. There was no tuberculous history. The child had been breast-fed. Both mother and father were living and well. The only other child was strong and well. Four weeks after the illness commenced a rash appeared. When seen by us together, thirty hours before death, the child was emaciated and unconscious. An icebag was being applied to the head; vomiting had ceased. The bowels acted without hæmorrhage, but the child was evidently sinking.

There were numerous patches of erythema on the face, trunk, and limbs. On the face they were chiefly bullous; on the body and limbs (especially legs) they were more deeply situated and nodular. The largest patch felt like a group of gummata, and was situated on the inner aspect of the right thigh. A few patches were flat, and not unlike a chloral (drug) rash. Others again were like the well-known erythema nodosum.

Necropsy.

A post-mortem examination was made six hours after death, under difficulties of time, space, and accommodation.

Body emaciated, slight stasis discoloration on back. Sites of former erythema still marked by bluish or purple lumps, or denuded surfaces where bullae had existed—showing well how numerous the skin lesions had been and how symmetrically distributed. Fontanelles not closed. As soon as the skull was opened a large amount of clear fluid escaped. Convulsions very pale, and traversed by highly injected dark veins. One patch of discoloured and slightly roughened surface on left frontal lobe and in dura mater over it. A similar patch on left lobe of cerebellum. These patches were from 1 to 2 in. in diameter. No adhesions. On raising legs about a drachm of clear fluid escaped from the spinal cavity. No pus. No obviously lymph coagulation. Ventricles not dilated.

There was no peritonitis. Liver smooth, enlarged, pale yellow, and soft; on its lower anterior surface and posterior portion of under surface were several glassy-looking lines, as if cracks had been sealed up, suggesting a similar cause having been at work to that which produces the well-known linea alba in the stretched abdominal walls. The gall bladder contained between two and three drachms of bile. The spleen was apparently normal, colour dark red. The kidneys were apparently normal. The stomach and intestines were uniformly pale, and almost empty. No ulcer, adhesion, or stricture. The intestines had a slight doughy feel. Some enlarged mesenteric glands were removed for examination.

There was some injection of the base of the right lung; the lungs were otherwise normal. The heart muscle was very pale, otherwise heart and valves normal. There was no joint swelling, or oedema of limbs. A piece of skin was taken for microscopical examination from one of the largest patches of erythema. The following is the laboratory report:

The sections "from the skin show an extreme degree of dilatation of the vessels not immediately beneath the epidermis, but of those a little deeper in the cutis; the very large numbers of red corpuscles seen here are almost entirely intravascular, the condition being such as would be met with in acute erythema, but there is nothing to indicate its precise nature. Of the other sections, that of the lymphatic gland shows some large-celled hyperplasia, such as results from chronic inflammation, but there is no definite pathological change to be detected in the sections of the medulla or of the cerebellum."

THE German Orthopaedic Society will hold its eleventh congress this year at Berlin on April 9th, under the presidency of Dr. H. Gocht.

THE *Boston Medical and Surgical Journal* states that the United States Consul at Gothenburg, Sweden, reports that acute poliomyelitis prevailed in epidemic form in Jonkoping County last autumn. The total number of cases reported up to November 29th, 1911, was 870. The majority recovered, but it is estimated that of these some 200 have been left with permanent disability from paralysis.

A PRELIMINARY NOTE ON THE PENETRATING POWER OF SOME OINT- MENT EXCIPIENTS.

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It is quite time that the use of the various ointment excipients should be put on a scientific basis, as, although much valuable clinical work has been done, the results are not concise, and are mainly found in the form of favourite prescriptions handed down by authorities.

In 1906 Sutton¹ carried out some researches in Unna's clinic, but his results have not been followed up so far as I know. Wild² recently published an article on the official ointment bases, regarding them from the point of view of their protective, emollient, and absorbent characters, and as I have been carrying out a research on this subject for the past year, the results so far obtained seem to be of sufficient interest to warrant publication.

Guinea-pigs have been employed, and the parts of the back of the animal utilized have been denuded of hair; the animal was killed later by ether, and the parts which had been treated were excised and cut on a freezing microtome (CO₂). The use of paraffin, celloidin, or any fixing agent would of course have been detrimental, and the parts were accordingly cut fresh. Care had also to be taken to cut from within outwards, and avoid contamination from a stained knife.

With the excipients used a definite quantity of stain or iron salt was thoroughly incorporated, and the whole then rubbed into a part of the skin for a noted time. At first the animal was killed immediately, but in later experiments it was found to be better to leave the ointment on for an hour or so, protecting the parts by strips of plaster.

Of the stains used Scharlach R. gave best results, as it is freely miscible with fats and oils, and is readily recognized in the tissues. It was thought that iron salts would be valuable, as they could be precipitated in the tissues, but the Prussian blue test does not answer in organic combinations and the black precipitate got with ammonium sulphide is not distinct enough. The oleate of iron is better than the sulphate, as the latter does not dissolve in oils.

In the first experiments the hair was shaved off before incision, and then the use of a depilatory powder was tried, but as both caused some irritation and appeared to prevent absorption, simple close clipping with scissors was adopted and found to give better results. Generally four areas were operated on in the same animal, so that the comparison was obtained whichever method was employed.

The sections were mounted at once in honey and glycerine and examined immediately, as it was found that they were rapidly spoiled by the stain gradually diffusing.

The composition of ungt. ophthalm. basic. is anhydrous wool fat, 6 drachms, and almond oil and distilled water, of each 1 drachm. The cold cream contains spermaceti, rose water, white wax, and almond oil, the exact proportions being kept secret by the firm who made it. Future experiments will be made with a definite formula.

So far the results show the superiority of olive oil and cedar oil among liquid excipients, the first being the better; goose grease is first among the more solid fats, and benzoated lard comes next.

Glycerine of starch with cold cream, glycerine of starch with hydrous lanolin, ungt. ophthalmicum basicum and cold cream are the best of the combinations, and are placed in order of merit.

In conclusion it is well to mention that the experiments only apply to healthy skin, and that when applied to the diseased human epidermis the results may not be analogous.

The evaporation and drying of the various excipients, and their capacity of parting with the drug used, are points also to be considered.