the case must be postponed until the nose has been cleared to some extent, as, though it is often possible to pass a probe into the sphenoidal sinus without having first removed the middle turbinal, it is difficult and often impossible to pass a canula and wash it out, which is the only infallible way of demonstrating which cavity is affected. This is a perfectly feasible and proper surgical procedure, and in patient hands gives good and satisfactory results.

As will easily be understood, a mere outline of the subject has been given, and no account of treatment, as that would have entailed too long a paper.

ART. VI.—*Constitutio Lymphatica*.^a By GEORGE PEACOCKE, M.D., F.R.C.P.I.; Assistant Physician, Adelaide Hospital, Dublin.

THE cause of sudden death in young children is, I venture to think, deserving of more attention than has hitherto been paid to it. It is not infrequently ascribed to convulsions, a convenient term no doubt, yet one which only describes a symptom of some morbid state—not the morbid state itself.

The object of my paper is to bring under your notice a condition that as yet has received little notice in this country, and which it is believed has often led to sudden death, especially in young children.

In the *New York Medical Journal* for July, 1897, appears an article from the pen of Dr. James Ewing, of New York, entitled “The Lymphatic Constitution and its relation to some forms of Sudden Death,” in which the author says—“Under the term *constitutio lymphatica* have rather recently been described a series of cases presenting a characteristic hyperplasia of the lymph nodes, spleen, thymus, and often of the lymphoid marrow, associated with hypoplasia of the heart and aorta, and frequently also with rachitis. These pathological conditions have been found, especially in cases of sudden death, from a variety of causes, and are believed by many to indicate in these subjects diminished vital resistance and special liability to sudden cardiac paralysis.”

^a Read before the Medical Section of the Royal Academy of Medicine in Ireland, on Friday, April 12, 1901.

Two cases of sudden and unexpected death had at the time come recently under Dr. Ewing's notice. The first was a girl, aged five years, whose family history revealed nothing of importance, except that a brother two years old showed evidence of some tonsillar enlargement, with symptoms of post-nasal adenoids, and also some enlargement of the cervical axillary and inguinal glands; otherwise the child appeared well and in good health.

The previous history was that of a perfectly healthy child, the fatal result occurring during chloroform anæsthesia for an incised wound of the tongue, the result of an accident.

The autopsy made, twenty hours after death, revealed the following conditions:—Heart normal in size, and containing dark fluid blood; aorta of normal size. Lungs—Blood contents considerable; some subplural ecchymosis; bronchi reddened. Thymus measured $7 \times 5 \times 2$ c.m., and covered the upper third of pericardium; spleen slightly enlarged; Malpighian bodies extremely prominent, looking like large miliary tubercles; pulp hyperæmic. Stomach—The solitary follicles, especially about the pyloric end, distinctly visible. Intestine—Throughout the entire intestinal tract, especially in the ileum, the solitary follicles are very prominent; Peyer's patches enormously hypertrophic; the lower lenticular patches measure 11 to 9 c.m. in length, and the enlarged nodules of the lowermost patch appear as distinct polypoid outgrowths $\frac{1}{2}$ c.m. high; the mesenteric nodes much hypertrophied, forming a solid mass of lymphoid tissue quite large enough to have been palpated through the abdominal walls; the tonsils moderately enlarged, but not hyperæmic; the bronchial nodes normal in size; the bone marrow was not examined; no evidence of rachitis; the brain appears normal; the microscopical examination showed hyperplasia of the lymphoid cells, and in the spleen a markedly increased deposit of pigment granules throughout the organ.

The second case was that of a female, aged 27, who died as the result of shock and hæmorrhage in the efforts to deliver a full-term child through a contracted pelvis. The only indications in this case of the *constitutio lymphatica* were the evidences of old rachitis, the hypoplasia of the heart and aorta, and the persistence of the thymus. It is, I think,

doubtful if this case should be considered as indicating the presence of the lymphatic constitution, but Dr. Ewing states that the attending physicians were of opinion that the patient's death was inadequately explained by the shock and loss of blood, and the fatal termination was a matter of surprise.

My own observations include a series of four cases, each differing in some points from one another, but all showing a markedly abnormal state of the lymphoid tissue in various parts of the body, and in all cases death was sudden and unexpected.

CASE I.—The first case was that of a child who was brought to the Adelaide Hospital in December, 1898. The parents asserted that the child was perfectly well going to bed the previous night, but that on waking in the morning they thought he “looked queer,” and immediately carried him over to the hospital, where, on examination, it was found that life was extinct. The child seemed well nourished and cared for, and a very thorough *post-mortem* examination revealed only the following abnormal conditions:—The thymus seemed unusually large, but no exact measurements were made. The mesenteric glands were greatly enlarged. Peyer's patches were very distinct and swollen, and the solitary follicles throughout the entire intestinal tract were so prominent as to give the appearance of grains of sago closely set in the mucous membrane—this condition was most noticeable in the duodenum and jejunum.

CASE II.—The second case was that of a boy aged 10 years; he had apparently not been in his usual health for a few days, but was not sufficiently unwell to seek medical advice; he was suddenly seized with an attack that was described as convulsions, and when brought to the Adelaide was found to be dead. The *post-mortem*, as in the previous case, showed that the boy was well cared for. There was slight congestion of one lung. The mesenteric glands were enlarged. Peyer's patches and the solitary follicles prominent and swollen. All the other organs healthy. There is no note taken of the condition of the thymus, so I presume it was, at any rate, not very large.

CASE III.—The third case was that of a child who had been under the care of Dr. Beatty and Mr. Gordon for a nævus on the lower lip. Electrolysis had been used on several occasions under chloroform, and it is a matter of congratulation that the fatal result did not occur on any of these occasions, as death from chloroform

narcosis is held to occur frequently in those who are subjects of the lymphatic constitution. In this case the child was, except for the nævus, an apparently healthy child, well nourished, in fact a rather large child, and was four months old. Death took place quite suddenly and from no apparent cause. The *post-mortem* made by Dr. J. Alfred Scott was most exhaustive. No enlarged superficial glands were noticeable. The heart was healthy. One lung showed some congestion, and there was one slightly enlarged bronchial gland. The thyroid and larynx were normal. The thymus measured four inches in length. The mesenteric glands were greatly enlarged. Peyer's patches were more prominent than normal, and the solitary follicles of the large intestines were distinctly enlarged, but not at all to the same extent as in the previous cases. The spleen was firm and somewhat increased in size, but the Malpighian corpuscles were not peculiarly prominent. The brain seemed perfectly healthy.

CASE IV.—The fourth and last case was that of a small, badly nourished child, nine months old, whom the mother said had been in his usual health until the day previous, when he seemed to have a slight cold and cough. On the day of his death he had been given his dinner of bacon and cabbage, and shortly afterwards was seized with some kind of fit, in which, according to the mother's account, his face became quite black. When brought to the hospital life was extinct. Dr. Alfred Scott also kindly performed a very thorough *post-mortem* in this case. The glands in the groin and axilla were considerably enlarged. The lungs showed a patch of congestion on each side. The bronchial glands were not enlarged. The thyroid and larynx appeared normal. The thymus measured three inches in length. The mesenteric glands were very much enlarged, but there was no evidence of any hyperlasia of the lymphoid structures in the intestine. The spleen was enlarged, and the Malpighian corpuscles were very well marked. The brain was not examined.

To recapitulate then the points of interest in these four cases:—

1. Up to the time of death the children were, to all appearances, healthy, or only suffering from some very trifling ailment.

2. Death was sudden and quite unexpected.

3. The *post-mortems* revealed no morbid appearance to account for death, except the changes already referred to as occurring in the parts of the body where lymphoid tissue is

formed—changes which are present in those who are subjects of the status lymphaticus.

Dr. Gunn very kindly made sections for me of the parts removed in Cases III. and IV., and he has handed me the following report :—

“Microscopic examination of practically all the organs prove all the organs normal, with the following exceptions :—The increased size of the solitary follicles and Peyer’s patches in the intestines were due to an increase of adenoid tissue. The lymphatic glands show a simple hypertrophy, and the same condition is present in the thymus glands. The thyroid of Case III. is much infiltrated with round cells, probably inflammatory, the cells lying chiefly in the normal spaces of the gland. The spleen shows a very slight degree of increase of adenoid tissue. In Case IV. there is a marked increase of adenoid tissue in the spleen, where it has infiltrated the pulp to a large extent—no other marked change in any of the sections.”

Since writing this paper another case bearing on the subject has come under my notice.

CASE V.—A few days ago a boy, aged six years, was admitted to the Adelaide Hospital. He was suddenly taken ill in the morning, and his symptoms on admission—fever, headache, some irregularity of the pupils, and retraction of the head—suggested meningitis; he had also a discharge from the right ear. The possibility of pneumonia, owing to the great frequency of his respiration, was, however, also entertained. He rapidly grew worse, and death ensued within 24 hours of the time of the onset of the illness.

The following day I made a *post-mortem*, and found the brain perfectly healthy. On opening the thorax I was struck with the size of the thymus gland, and it occurred to me that possibly I might find further evidence of the lymphatic constitution. The lungs showed evidence of pneumonia. The lower lobe of the left lung was solid and airless, and there was a patch about the size of a walnut in the lower lobe of the right lung, also solid and airless. The heart seemed healthy. Examination of the abdomen revealed great enlargement of the mesenteric glands, the spleen did not seem affected, and the other organs, with the exception of the intestinal tract, appeared normal.

On opening the small intestine it was at once apparent that the

adenoid tissue was abnormal in appearance, the solitary follicles were very much enlarged and prominent, and Peyer's patches were quite distinct and swollen. The solitary follicles of the large intestine were very distinct, but not so swollen as in the small intestine.

This case seems to me of very great interest. The cause of death was, no doubt, primarily pneumonia, but I think it is unusual for pneumonia to cause death within twenty-four hours in a young boy of six years of age, who was apparently otherwise healthy at the time. May it not be that he was the subject of lymphatism—the appearances at the *post-mortem* are very suggestive of this—and that thus his power of vital resistance being below the normal standard, he was unable to resist the sudden acute attack of pneumonia, and the slender thread of life was quickly snapt across.

In none of the English Text-books on Medicine that I am acquainted with, including Clifford Allbutt's great work, is this condition mentioned, with the solitary exception of Osler's Practice of Medicine, in the last edition of which an article is devoted to the subject. He mentions under the title Lymphatism the appearances that are usually found in such cases. The hyperplasia of the intestinal lymphatic structures, the moderate enlargement of the spleen with prominent Malpighian bodies, the enlarged thymus, hyperplasia of bone marrow, the yellow marrow of the long bones in young adults being often replaced by red, hypoplasia of heart and aorta, occasional enlargement of the thyroid with evidence of rickets. Of these pathological changes it would seem that the hyperplasia of the lymphatic structures is the most constant and essential characteristic. hypoplasia of the heart and aorta is frequently added, as is also the evidence of rickets and the enlargement of the thyroid.

As long ago as 1858 Friedleben denied that an enlarged thymus gland could produce fatal laryngismus either by direct pressure on the air passages or great vessels, or by reflex, cardiac, or respiratory paralysis arising from the thymus. Grawitz, Nordmann, and others maintained that such was the case, but Paltauf has clearly shown that some underlying constitutional defect must be assumed to exist in order to account for many sudden deaths usually referred to

the pressure of an enlarged thymus upon the bronchi, great vessels, or pneumogastric. And further, an examination of the cases of "Thymus Tod," reported by earlier writers shows that in a majority of these cases it was noted that the tonsils, spleen, and lymphatic glands were more or less hypertrophic, though no particular significance was attached to this fact at the time.

What is the exact relation of hypoplasia of the heart and aorta to the lymphatic constitution is as yet not clearly known. Numerous writers, including Virchow, Rokitsansky, Reigel, and Ortnier, have published cases to show that subjects possessing this congenital defect in physical development present a diminished vital resistance, and apparently trifling causes have led to their sudden death.

As this abnormal state of the heart and aorta is certainly not present in all cases where sudden death has occurred, and where *post-mortem* evidence of hyperplasia of the lymphoid tissue has been found, it cannot be regarded as an essential factor in the production of the fatal termination.

The exciting causes and manner of death of the subjects of the lymphatic constitution that have been recorded include deaths under anæsthetics, after inoculation with anti-diphtheritic serum, and of persons who fell into the water accidentally or while bathing, and Escherich regards laryngismus stridulus as very probably associated with this condition.

Since it is claimed that many if not most of the deaths from chloroform anæsthesia administered by capable anæsthetists are referable to this condition, it becomes a matter of almost vital importance to be able to recognise it during life, but as yet we have no very sure data to accomplish this.

The physical signs indicative of hypoplasia of the heart and aorta are uncertain. Fraenkel mentions dilatation of the left ventricle with narrowed peripheral vessels and increased tension. Oertel has noticed an absence of aortic pulsation in the neck, which he regards as a pathognomonic sign if observed in a muscular subject, while others have laid stress on the infantile or defective development of other organs, especially the sexual organs.

Of far more importance is the discovery of a local or

general hyperplasia of the lymphatic structures, enlargement of the superficial glands, hypertrophy of the tonsils with presence of post-nasal adenoids, signs of slight swelling of the thyroid, and dulness over the sternum, indicating a persistent or enlarged thymus, and in some cases the possible evidence gained by palpation of the enlarged mesenteric glands.

A careful examination of the blood in suspected cases may also be of service. Dr. Ewing mentions that he observed well-marked lymphocytosis in one of his cases, and though this condition has been frequently observed in early life, it has up to the present attracted little attention, nor, as far as I know, has it as yet acquired any significance.

Such is briefly our knowledge at the present time of this obscure condition.

My chief object in placing on record the cases which have come under my own notice is to stimulate others to research, and to urge the claims of the subject to more general attention.

Lymphatism may be the clue to many cases of sudden death that have occurred in the past and have seemed at the time inexplicable, and no one as yet can tell the interest and importance that may attach to it in the discussion of medico-legal questions in the future.

ASCITES IN CASES OF ADHERENT PERICARDIUM.

RIESMAN (*American Journal of the Medical Sciences*, July, 1901), in an interesting description of a case of primary tubercular pericarditis, emphasizes the fact that in cases of adherent pericardium ascites is usually noticed before the appearance of œdema of the lower extremities.

ANEURYSMS OF THE HEART AND AORTA.

HEKTOEN (*American Journal of the Medical Sciences*, July, 1901), in an interesting article on aortic aneurysm, remarks that many so-called dissecting aneurysms of the heart take their origin in the beginning of the aorta. The author further states that the nearest approach at the present time to the truth in regard to syphilis and certain aortic lesions and aneurysms is embodied in the verdict, "guilty but not proven."