

is seen for the first time in the secondary stage of the disease, as not unfrequently occurs.

It is difficult to say anything satisfactory with reference to the pathological anatomy of the milder form of inflammation of the uterine appendages in the non-puerperal state, inasmuch as death scarcely ever occurs during its existence. I have myself only seen one fatal case in the non-puerperal state, and then there was tubercular suppuration of the ovary, and the disease had for months presented all the characteristics of the severer form. When death does take place, it is through the extension of the disease to the peritonæum and surrounding tissues, and the pathological data found on post-mortem examination are the same as those which are found in the puerperal form of the disease;—thickening and adhesions of the peritonæum and adjacent tissues; sero-purulent collections, circumscribed by false membranes, and existing between the various pelvic organs; softening and transformation of the muscular fibre; in a word, all the lesions produced by general pelvic inflammation.

Amidst such extensive pathological changes, it is difficult, if not impossible, to decide, by mere examination, where the malady began. This is, indeed, I believe, one of the causes that has thrown so much uncertainty over the real seat of this form of pelvic disease. Inquirers have endeavoured to discover the original seat of the inflammatory attack from the data furnished by pathological anatomy; and in this attempt they have often failed, because nearly always, long before death results from chronic pelvic inflammation, the organs contained in the pelvic cavity have become a confused and inextricable mass of disease. We are, however, I think, warranted in localizing the disease which I have described in the organs contained between the peritonæal folds of the lateral ligaments, owing to the facility with which the inflammatory tumour can be circumscribed and limited from the adjoining organs in the earlier stages of its development.

I have devoted so much space to the history of this important but little known species of pelvic inflammation, that I should be afraid of wearying the patience of my hearers, were I to enter into any details respecting treatment. I shall therefore merely remark, that it may be at once deduced from the nature of the disease in accordance with the principles of therapeutics.

The same motive induces me to refrain from illustrating the description I have given of this malady by cases, although I have seen many, and could have narrated several lately observed, which present considerable interest. I must, however, be allowed to mention the heads of one which I attended last year, and which admirably illustrates the above details.

In May, 1847, I was consulted for a young unmarried person, aged nineteen, who had fallen down stairs a few days before—three days after menstruation. Of robust, well developed frame, she was previously in the enjoyment of good health, with the exception of occasional hysterical attacks, and had been menstruating regularly for five years. After her fall she complained of great pain in the lower part of the back, and on the second day was seized with violent convulsive hysteria.

I saw her on the third day, and found her in a semi-comatose state. The pulse was quick, the skin hot, the left side of the thorax and abdomen, and especially the lumbar region, were acutely sensitive to the touch. She had also frequent hysterical convulsions. Fearing some injury to the spine from the fall, I applied sixteen leeches to the lumbar region, which bled profusely. An active cathartic was administered, and the hysteria treated by large doses of opium. Under the influence of these means, the hysterical symptoms rapidly gave way, leaving behind them, however, great abdominal pain, especially on the left side; an evident swelling in the left ovarian region, where the pain was greatest, and a general febrile state. I suspected the possible existence of phlegmonous inflammatory disease of the lateral ligament; but not feeling warranted in proposing a digital examination, I merely persisted in general antiphlogistic measures, directing, however, the attention of both attendants and patient to the dejecta. On the tenth day, about four ounces of pus were voided along with a motion. On examining digitally, I found at once a small, indurated, painful tumour on the left side of the uterus. She rallied rapidly, and soon became quite convalescent. At the next monthly period, however, she had a severe relapse, and notwithstanding leeches, cathartics, &c., matter again formed, and this time found a vent by the vagina. At the three following monthly periods she had relapses, although gradually less severe. When I last saw her, about three months ago, she was yet an invalid. On examination, no trace of the inflammatory tumour could be found, but there was still great local tenderness.

In this case, had not the first symptoms been masked by severe hysteria, and had I not omitted, from delicacy, making that examination, which alone could reveal to me the real state of things, I should have perhaps been able, by more energetic treatment, to arrest the progress of the local disease, and thus to have saved the patient much subsequent suffering.

Cambridge-square, Hyde-park, January, 1848.

## ON COLD AS A MEANS OF PRODUCING LOCAL INSENSIBILITY.

By JAMES ARNOTT, M.D., Brighton.

THE LANCET for July 8th contains an interesting paper by Professor Simpson, of Edinburgh, on the substitution of local anæsthetic agents for those of general action; and the publication, in the same number, of a case of sudden death from chloroform is well calculated to draw attention to his observations. Unfortunately, however, his paper does not hold out much hope of success from any of the local means with which he has experimented.

Eight months ago, I proposed, in a work on "The Uniform Application of Heat or Cold in Various Diseases," (preface, p. viii.) to substitute local means for producing insensibility during surgical operations. One of the two measures then suggested I have proved to be effectual. I allude to the benumbing effect of cold.

There are many operations in which the only source of pain is the incision of the skin, and more in which this is the principal source. To these, this agent is especially applicable. I have, for example, after using it, made an issue by dissecting off a square inch of the skin without causing pain; and I have made setons without the patients being conscious that the skin was cut. I have little doubt that operations on the teeth, in which ether and chloroform have been so much and often so improperly used, could be rendered painless by the same means. In my "Essay on the Present State of Therapeutical Inquiry,"\* I have spoken of cold properly or uniformly applied as an effectual remedy of one species of toothach.

In applying cold with the views under consideration, I have taken care to avoid reaction and the determination of blood to the part, by reducing the temperature very gradually. To benumb a small portion of skin, a very simple apparatus is required. A small pig's bladder, some pounded ice, and a little salt. The bladder, containing tepid water, is placed so as to cover the portion of skin to be rendered insensible; the ice is then gradually dropped in, and last of all the salt, so as to bring the temperature considerably below the freezing point. The water or dissolved ice is occasionally drawn off from the bladder, (which can be done very conveniently by having previously fixed a bit of metallic tube in it,) and when all sensation has ceased, which I have generally found to be the case after fifteen or twenty minutes, the operation should be proceeded with. A very thin or "prepared" bladder, a broad ring to keep the opening in it expanded, and a thermometer to be placed in it, would render the apparatus more complete, but they are not necessary. Of course, for other purposes, other forms of apparatus would be required.

I cannot doubt that the mode of proceeding I have related might be much improved upon. I have not paid much attention to the subject, but the above hints may be useful to those disposed to prosecute the inquiry. Perhaps, for instance, so low a degree of cold as I have mentioned is not required to produce the requisite degree of insensibility, and if pressure were conjoined with cold, so as to squeeze the blood from the part, and check the circulation, the effect would certainly be more rapid, complete, and extensive. In the little operations I have mentioned, it was unnecessary to use the precaution against injurious reaction of gradually restoring the natural temperature; and even in more important operations, when the benumbing has been of short duration, there might not be a necessity for such proceeding. Should there be such necessity, the work alluded to, in which this suggestion was first made, contains a description of means by which the temperature of a part can be completely controlled; and I shall be happy if the less important purpose of producing insensibility in operations should extend the acquaintance of the profession with these means—the most powerful, perhaps, and certainly the safest, in our profession, of subduing the

\* "On Indigestion: its Pathology, and Treatment by the Local Application of Uniform and Continuous Heat and Moisture," &c. By James Arnott, M.D., Physician to the Brighton Dispensary. London: John Churchill.

most frequent and most fatal morbid conditions—inflammation. With reference to the present question, it may be observed, that by thus preventing any morbid degree of temperature, not only may reaction after low temperatures be prevented, but even that excess of inflammation which so frequently causes an unfortunate result of operations conducted in the ordinary way.

Brighton, July, 1848.

# DEATHS FROM CHLOROFORM.—ITS INAPPLICABILITY UNDER CERTAIN PATHOLOGICAL CONDITIONS OF THE SYSTEM.

To the Editor of THE LANCET.

SIR,—The following case, where death ensued from inhaling chloroform-vapour, has been communicated to me; and feeling the importance of placing well-ascertained facts before the profession, I forward it to you, trusting you will give it early insertion in THE LANCET.

I am, Sir, your obedient servant,

Gloucester-terrace, Hyde-pk., July, 1848.

R. BARNES, M.B.

## DEATH WHILE UNDER THE INFLUENCE OF CHLOROFORM.

From Allen's Indian Mail, July 4th.—From the pen of the operating surgeon, at Hyderabad, Scinde.—Furnished by Dr. Hardinge, to whom it was addressed, for public communication.

"A most distressing case has just occurred in my public practice here—chloroform has proved fatal in my hands. A young woman presented herself this morning with disease of the distal phalanx of the middle finger of the left hand, requiring amputation at the middle joint. As she appeared of timid disposition, and exhibited more than usual reluctance to submit to the little operation, I administered a drachm of chloroform in the usual way—namely, by sprinkling it on a pocket handkerchief, and causing her to inhale the vapour. She coughed a little, and then gave a few convulsive movements. When these subsided, I performed the necessary incisions, which, of course, did not occupy more than a few seconds. Scarcely a drop of blood escaped. The patient was then put into the recumbent posture, with her head low; active means was taken to bring her out of the state of coma into which she had apparently fallen. But although these means, including artificial respiration, were perseveringly employed for five hours, the unfortunate woman never breathed again. I am inclined to think that death was instantaneous, for after the convulsive movement above described, she never moved, or exhibited the smallest sign of life. No opportunity was afforded me of making a post-mortem examination, so that it must for ever remain a secret whether or not there were any special circumstances, such as aneurism of one of the great vessels, or disease of the heart."

(The chloroform was supplied by Messrs. Twemlow and Co., of Bombay. It required a drachm and a half of the same chloroform in another case to produce a slight effect.)

## DEATH BY HÆMORRHAGE FROM THE LUNGS AFTER THE ADMINISTRATION OF CHLOROFORM.

To the Editor of THE LANCET.

SIR,—The medical men of Birkenhead will feel greatly obliged by your publishing, in the columns of your valuable journal, the accompanying notes of the case of the late Dr. Anderson, with the depositions taken by the coroner at the inquest held on the body of the deceased.

The use and abuse of chloroform is a subject which at present interests the public and the profession so much, that no case bearing on its administration should be passed over unnoticed, until, at least, our knowledge of this potent remedy has become more matured.

I have the honour to be, Sir, your obedient servant,

W. MACDOUGALL,

Secretary to the Birkenhead Medical Society.

Birkenhead, Saturday, March 11th.—Twelve p.m.: Dr. Walker, Dr. Robertson, and Mr. Macdougall were hastily summoned to visit Dr. Anderson, at No. 11, Church-street. Found the patient very anxious, with a jerky, bounding pulse of 115. Dyspnoea and blue lips. He had expectorated about six ounces of fluid blood, of a florid appearance, and frothy from admixture of air.

There was dulness on percussion over both sides anteriorly. Harsh, irregular crepitation heard extensively with the stethoscope in front, and a bubbling rhonchus over the position of the larger tubes, especially on the left side behind. The

patient felt a sense of constriction about the chest, with a dull pain in the back.

He stated that he was seized with a very acute pain in the back (to use his own words, "as if his back were about to separate into two,") immediately before the hæmoptysis came on. He mentioned that, on the day before (Friday, the 10th,) he had allowed a dentist in Birkenhead, named Wainwright, to administer the chloroform to him prior to extracting a molar tooth. The rest of that day (Friday) he had felt much excited, with a peculiar "rushing in the carotids."

The next day, Saturday, he felt rather languid, especially towards evening, when he was scarcely able to walk from debility, and a burning pain in the back of the chest. He took a cup of cocoa, his usual beverage, and retired to bed a little after eleven o'clock, when the hæmorrhage commenced.

His frame was spare. His habits were very studious, sedentary, and abstemious. For some time previous to taking the chloroform, he had felt a weakness about his chest which caused him frequently to sink forward in the chair whilst reading, so much so that the book would fall out of his hand. Had no cough, however, although he felt some uneasiness from what he considered to be "slight cold." He said he considered the chloroform the exciting cause of the hæmorrhage.

The medical men at this time considered the hæmorrhage to depend on general exhalation from the general surface of the air tubes as a natural relief to greatly congested lungs.

After consultation, it was resolved to bleed from the arm to eighteen ounces, and follow this immediately with a sedative dose of ten grains of calomel with three grains of henbane; and afterwards to give one-eighth of a grain of tartar-emetic, and two grains of calomel, at intervals of three hours for three successive times, with a view to keep up the sedative effect, and to induce absorption of the blood effused into the air-cells. Perfect quietude enjoined, with a diet of cold, thin gruel.

Mr. Macdougall was requested by the patient to remain all night. Mr. Macdougall left him at seven next morning.

March 12th.—Ten a.m.: Dr. Walker, Dr. Robertson, and Mr. Macdougall met. Patient had slept frequently and soundly during the night. There had been no return of hæmorrhage; pulse quiet, without any perceptible jerk; has had one copious fluid stool; right side of chest quite clear; crepitation still heard on left side, and there is less mobility of the ribs on this side; patient not allowed to speak; tubercles in the lungs suspected. To meet again at four p.m.—Half-past one p.m.: Mr. Macdougall summoned in haste, the hæmorrhage having returned. A relation had called on him, and by conversation had rather excited the patient; the latter feeling a little nausea soon after, made a voluntary attempt to vomit. This effort brought on a recurrence of hæmorrhage to five ounces. It was supposed that this effort had ruptured a vessel or vessels, the blood expectorated being, although very florid, in narrow clots, as if coagulated as it escaped from the ruptured vessel. Repeated venesection to eight ounces; only slight syncope followed the bleeding, although the patient sat up during the abstraction. Gave three grains of acetate of lead, with half a grain of opium, every three hours; also, a mixture, containing tincture of foxglove, thirty minims; tincture of opium, forty minims; acetate of lead, eight grains; distilled vinegar, a drachm; water, to a pint. Mix; an ounce for a dose with each pill.—Four p.m.: Dr. Walker, Dr. Robertson, and Mr. Macdougall met again. Patient very quiet; breathing tolerably easy, although the left side did not act so freely as the right, and the crepitation on this side was still harsh; pulse 110, and still rather jerky. Continue mixture every four hours. To meet again at half-past nine p.m.—Half-past five p.m.: Mr. Macdougall summoned in haste. Hæmorrhage returned to three ounces. Continue mixture and pill every two hours. Reduced bed-clothes to a sheet merely. Called in the senior practitioner of the town, Mr. Stevenson, and Mr. Hamilton. Half-past seven p.m.: Mr. Stevenson, Mr. Hamilton, Dr. Walker, Dr. Robertson, and Mr. Macdougall met. Resolved to increase the digitalis and lessen the opium, and to bleed again in case of a return of the hæmorrhage. Omit the pills. To take acetate of lead, twenty-four grains; tincture of foxglove, a drachm; tincture of opium, half a drachm; distilled vinegar, a drachm; water, to a pint. Mix; one ounce every two hours. To meet again at nine to-morrow. Mr. Macdougall to remain all night.

13th.—Mr. Macdougall had left at six a.m. Patient had slept frequently, and felt much better, remaining calm. Seven a.m.: Mr. Macdougall hastily summoned. Hæmorrhage returned to a little more than two ounces at one gush; features pallid; dyspnoea, with wheezing; pulse very jerky, 130, and not very strong. Propped the patient well up in bed, and repeated the venesection to syncope; about nine ounces were