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ON
**SHOCK AFTER SURGICAL OPERATIONS
 AND INJURIES.***

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SYMPTOMS OF SHOCK.

In describing shock, it is desirable to select a case where the intensity of the condition is of a striking and well marked character; for shock, like other deviations from health, presents every degree of intensity, from a condition so slight that its existence may be doubted, to one in which it can scarcely be distinguished from death. Suppose, then, that a limb has been crushed—possibly the knee-joint opened, or a large portion of the skin of the trunk has been burnt, or the uterus has been extensively ruptured, or a small hernia has become suddenly strangulated, or the thigh has been amputated in the upper third or at the hip-joint: on examining the recipient of any such severe injury, we should find him as pale, as motionless, as indifferent to the outward world, as if the injury had already terminated in death. The pallor of the skin has the sickly white hue which only bloodless human skin is capable of presenting. The ruddiness of the lip has gone, and is replaced by a clearer and whiter tinge than that of the skin. The cornea, in severe cases, are directed upwards, so that the whites of the eyes only are seen; but the altered axis of the eye is more apparent than real, because the upper lid is more or less depressed. The conjunctiva is lustreless, or even “glazed”. The features are smaller, especially the nose, the tip of which is constricted, and occasionally of a dusky colour, presenting a singular contrast to the rest of the face. The nostrils appear dilated. The lips are parted, and thin as well as pale. The whole countenance is so much changed, that recognition may be difficult to near relatives and friends. The surface of the body is everywhere cold to the touch; and, if consciousness be partially present, cold is also complained of. Small drops of moisture lie on the skin, especially of the forehead. The hands are blanched like the face; the fingers and nails exhibit a bluish colour, and are shrunk, so that the skin on the palmar aspect lies in loose folds. Those parts of the body which are usually covered, though presenting less change of colour, are perceptibly whiter. There is marked inaction of the whole muscular system, the position of the body being either on the back, or, in extreme cases, in the position in which bystanders have placed it. In less severe cases, muscular action is impaired, but not absent. In cases where the shock is due to

great but not sudden loss of blood, the stillness of the muscular system will be replaced by the tossing restlessness, and possibly delirium, so characteristic of unchecked hæmorrhage, either internal or on the surface of the body. It is commonly said, that the action of the heart is accelerated; it is certainly enfeebled, the pulse being also irregular and intermittent. But the pulse is not rapid in all cases. (I do not hesitate to say—and this question I shall examine later—that in every case of shock there is at first, and for a longer or shorter time, diminished frequency of the heart's action.) In strangulated hernia commonly, and in some injuries of the head, the pulse is often remarkably slow, descending to 40 or even 30 beats; yet in these cases we have the purest examples of shock, as regards the depression of the nervo-muscular force. The action of the heart may be so feeble, that neither it nor the pulse at the wrist can be detected. Consciousness, the intellect, and the sensibilities, are blunted, and the will paralysed; or it may be that consciousness, the intellect, the sensibilities, and the will, are extinguished for a time. Deglutition may be difficult, and the contractility of the sphincters lost. The urinary secretion and glandular activity generally is arrested or retarded. The special senses are rendered more or less unimpressible. Articulation is imperfect, and the voice feeble or altogether lost. Respiration is feeble; but it becomes quickened with the pulse, though not in any fixed ratio. Its chief peculiarity is irregularity. Most of the inspirations are shallow and of the most varying degrees of rapidity. Sighing inspirations are frequent, but with no regular order of succession. Respiration may be so feeble as to be with difficulty detected. Deglutition is mostly possible as to fluids, and to solids thrust within the reach of the constrictors. Nausea and vomiting may also be present, but rarely in the most marked periods of shock. If the rectum be loaded at the occurrence of the injury, the contents will be spontaneously evacuated. The contents of the bladder are retained.

In the slighter forms of shock, the surface is cold, and the recipient of the injury complains, often repeatedly, of feeling cold. Muscular action is much impaired, but not suspended; indeed, impaired muscular action and enfeebled circulation are the most apparent characteristic indications of the slighter forms of shock. The pulse is feeble, intermittent, fluttering, and irregular. Respiration is shallow, with irregular sighs; the sighs being every second or third inspiration at one time, at the fifth or seventh at another, at the ninth or tenth at another. The brain, unless the injury have been direct to the head, is comparatively active, especially if the position of the body be recumbent, but quite unequal to the higher efforts of the intelligence. Digestion, the intestinal peristaltic action, and gland-secretion, are all retarded. Nausea and vomiting often occur in this degree of shock.

Shock is not always proportionate in its intensity to the severity of the wound. It may be severe when the injury is slight, or it may be slight when the injury is severe. Many circumstances contribute to this apparent inequality in the operation of given causes. But this remark applies chiefly to the varieties of shock other than the most severe. In the most intense form of shock which is compatible with the continuance of life, the nature of the injury,

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or the importance of the part injured, are usually of the gravest character. In cases of shock from mental emotion, if the result be not immediately fatal, the recovery from the severer symptoms is usually, though not always, rapid. There has been an antagonism of the nerve-force, which possibly may be recovered from before interchange of nerve-force has resulted in positive physical or chemical change, or, at least, before such physical or chemical change has rendered a return of nerve-force impossible.

In the severest forms of shock, from causes which act chiefly on the corporeal organisation, the injury is of the most serious, and often of a fatal character; and the shock, whether the injury be necessarily fatal or not, not unfrequently terminates in death. In such cases, several of the symptoms already described as occurring in the severer forms of shock are greatly aggravated. Coldness, pallor, immobility, and insensibility, are extreme. The pulse and respiration are scarcely, if at all, perceptible. The excito-motor functions are gravely impaired. The lids do not close when the conjunctiva is irritated. Deglutition is not possible to fluids or solids placed within the grasp of the constrictors. The sphincters are completely relaxed, and the urine is retained. Under such circumstances, especially when the fifth and glosso-pharyngeal nerves fail to excite any response in the nerve-centres, the gravest fears may be entertained that respiration itself will momentarily cease.

[To be continued.]

CLINICAL STUDIES OF CANCER.

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TREATMENT OF PRIMARY TUMOURS: ACETIC ACID.

If there be one subject in surgical practice rather than another which claims revision, it is the want of effectual treatment of primary Cancers. To a large extent, the failure of surgery in respect to them is due to our deficient acquaintance with the disease; but it is also in part a consequence of the misapplication of knowledge actually possessed by the profession. Any practitioner who sees much of Cancer is not seldom first consulted when the possibility of removing the primary tumour is almost or quite gone by. Either measures have been previously adopted which were inadequate for the extinction of the disease, or throughout a long period of pretended treatment the propriety of an operation has not even been suggested to the patient, or the plan of forbearing to remove the tumour has been deliberately preferred. In some few persons, no doubt reasons which are usually held to be valid against any operation have rightly prevailed, but too often the aversion of the practitioner from an operation in Cancer has been the cause of the abandonment of the disease to its inevitable issue.

There is reason for such revision. Widely as knowledge on the subject of tumours has of late been diffused, and especially since the publication of Mr. Paget's *Lectures on Surgical Pathology*, there is, however much, even yet too little, fruit from it; for there

are still practitioners, though they are doubtless few, whose deliberate, but mistaken, views respecting Cancer throw on others the well-nigh hopeless task of retrieving their neglect, or the duty of watching without hope its lamentable consequences. The accumulation of abandoned cases in such an asylum as the Cancer Department of the Middlesex Hospital is distressing. Yet, even in the late stages at which such cases are brought to consultation, it sometimes happens that an operation is still possible, and the patient is relieved for a long time from the external ailment, or exchanges it for a later recurrence in a less painful and loathsome form; but these satisfactory redemptions are few.

With what object are the operations in question avoided or delayed? Is it out of compliance with the antiquated error of the constitution being diseased rather than the part? As long ago as Denman, that theory has been denied; but, supposing it were even true, yet there is no delicacy of general health which should preclude the operation in these patients, or interfere with their prolonged comfort and usefulness after it. The contrary fact is occasionally shown by their ready recovery from the far more extensive operations which become necessary when the tumour has been suffered to enlarge. Is it from an apprehension of fatal accidents during the operation or the convalescence? This risk is pretty well known; it does not exceed ten per cent., and in the practice of many surgeons who are careful to select their cases on the general principles of surgery is not, or is not more than, half so great. Is it the fear of a local recurrence of the disease, and of consequent discredit for having advised the operation? Professional men, who advise prudently and frankly according to their expectations in the case, act aright in spite of discredit. And as to recurrence, an early operation is less likely to be so followed than a late one; whilst an operation, adequate in extent without being reckless, is indispensable for any success. Without the intention to extirpate this disease thoroughly, it would indeed be well not to interfere at all. Is it the persuasion that as a mortal disease it may as well be let alone? Such a conclusion may have been arrived at in days when there was no alleviation of pain by chloroform; but now the patients are entitled to profit by the knowledge we possess, that life is on the whole prolonged, and suffering mitigated by the removal of the primary tumour. Be it ever so true that Cancer sooner or later returns, that constitutes no ground for refusing to a patient the months or years of absolute health which an operation confers. To promise final exemption from the disease upon the removal of the first tumour would, in the present state of our knowledge, be unprofessional; it is no less so, in default of such a promise, to withhold from the patient the opportunity of temporary, and it may be long, respite by means of an operation. Is it, once more, to keep the patient in ignorance as long as possible of the nature and probable issue of her disease? By such a course, indeed, much present anxiety of mind is spared, except sometimes to the sufferer in secret; but it is at the expense of length of life and eventual increase of pain. From the expressions of patients who, aware too late of the nature of their ailment, cast much blame on their early advisers, it seems that, even at this day, some are suffered to live on in a delusive doubt as to their tumour "becoming Cancer", that is, in their sense, ulcerating, during all the time when the occult Cancer already existing is capable of being removed.

I am far from designing to fix on surgical practice in general, the fault of the progress of Cancer. Ignorance or timidity on the part of the patients them-