

removal. After wearing the small balls three or four days, much softening is effected, and any cicatricial bands felt are incised and a larger globe inserted. This process is continued from three to five weeks, until the vagina is well dilated, the cicatrices removed and the edges of the fistula well in view.

Conscious of the imperfect character of these remarks I kindly thank you for patient attention. Very much more might have been brought before you upon a topic so large and important; and I trust much will be added by the able visitors and members of the society. One has to be content to merely enter upon the threshold of an edifice at once so practical and attractive.

Progress of Medical Science.

REMARKS ON THE PATHOLOGY OF BURNS AND THEIR RATIONAL TREATMENT.

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After all that has been said and written relative to the treatment of this class of injuries, both by the educated and uneducated, the medical history of burns still remains far from being satisfactory, and as yet we have not made that progress in their amelioration and cure which could be desired.

Probably we are too much disposed to view these most serious forms of injury in an isolated light, as local in character, merely, rather than as affections holding most intimate and important relations with the general system.

The first impression made upon the general system by the local action of intense heat is that of nervous shock. This condition is too clearly understood to require allusion here. But there are certain coincidental morbid phenomena associated with shock, which are of more importance and less comprehended.

In those cases of excessive nervous shock caused by extensive burns, thrombosis of the heart and large veins entering the right side of that organ not unfrequently occurs. There are peculiar reasons why thrombosis should be a more common result of shock from burns than from almost any class of injury, this phenomenon being due to a combination of causes, one in the form of excessive nervous depression, the other from disorganized blood from the local action of heat which has been conveyed from the burned tissues to the centre of circulation. Thus, a few disorganized blood-corpuscles or a small portions of coagulated fibrin, or albumen, when carried into the general circulation, at once become nuclei for the formation of thrombosis of the heart and great vessels.

Hence the necessity of accurate diagnosis between simple nervous shock and thrombosis in point of treatment. In simple shock the pulse, though exceedingly feeble, is not usually much accelerated, and is generally regular in rhythm. The cardiac sounds are very feeble, but distinct. The temperature is

greatly reduced; the complexion pallid; the respiration is but little increased in frequency, and there is an absence of præcordial distress, though nausea may be present.

On the contrary in shock with thrombosis, the breathing is painfully labored, and frequent. The action of the heart is tumultuous, irregular, feeble, and very frequent. The complexion is livid, while the skin is cold and bathed in perspiration; præcordial distress is painful, and the cardiac sounds almost obliterated.

There cannot be a rational doubt that death following extensive burns directly is often the immediate result of cardiac thrombosis.

Secondary stages of burns.—Following the reaction after the first shock to the nervous system has passed off, probably capillary embolism and its legitimate consequences constitute one of the chief causes of mortality. Here, as in thrombosis, those properties or rather constituents of the blood whose vitality has been destroyed in the burned tissues, not only become a septic source, but, after passing through the large veins and heart, find lodgment either in the pulmonic or portal circulation, producing blood-stasis, hyperæmia, inflammation, and suppuration. Hence we generally see these peculiar phenomena in one or the other of these two circulatory systems. It is sometimes witnessed in the cerebral circulation, when symptoms of congestion, with active delirium, and, finally, coma, are prominent.

Thus we may have in the pulmonic, as a result of capillary embolism, chill, followed by either pleuritis pneumonitis, or abscess, with inflammatory fever; in the portal system, peritonitis, ulceration of the intestines, with either diarrhoea or dysentery, and abscess of the liver. In many of these cases all the characteristics of true pyæmia are developed. These microscopic emboli appear not unfrequently to manifest a tendency to find lodgment in the mucous surface of the small intestine,—for instance, the duodenum,—and then induce ulceration. This is probably due to an effort of nature to eliminate them from the circulation. As evidence of the fact that mere extent of burned surface is not always the cause of death, numerous instances of very extensive burns have come under the observation of the writer, which were progressing favorably in the healing process, when suddenly symptoms of capillary embolism, congestion, and inflammation of some internal organ, or ulceration with dysentery, appeared and speedily terminated the case.

On the local changes in the tissues from burns.—No other variety of injury either from mechanical or chemical cause is attended with such protracted and unceasing pain as that from burns. This peculiar element of this class of injury is probably a serious obstacle to the progress of restoration. All painful wounds heal less readily than when painless. We often see far greater destruction of tissue from other causes followed by but little pain, and which are much more rapidly healed. This peculiarity of burns is doubtless due both to the exposure and injury of the vital organism of the myriads of terminal branches of