CLINICAL LECTURE ON BURNS.

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No injuries of ordinary occurrence produce such great and prolonged suffering as burns. Unfortunately, they are rapidly increasing in frequency and severity, due to the use of heat in mechanical occupations, to the universal presence of friction-matches, and, most seriously, to the extended application of highly-inflammable and even explosive fluids for the purpose of illumination. Petroleum is answerable for a great number of the most dreadful of these injuries that we admit to the wards, and the ignorant or careless use of it in attempting to kindle fires, or in filling lamps whilst the wick is still burning, causes some of the greatest human misery and frequent death.

Probably our hospital experience would show that no class of injuries, in proportion to the number, is so fatal. The majority of burns are of domestic occurrence, and women and children the most frequent sufferers. Our records give evidence of the great mortality of cases of burns among children, and of the termination of the sufferings of many, dying within a short period after their admission to the wards, without reaction from the primary shock of injury.

You have seen already, during this clinical term, how varied may be the character of injuries from the application of either dry or moist heat, from a mere erythematous redness of the skin produced by a momentary flash of burning gas or escaping steam to the total disorganization and destruction of a part. Burns vary in severity according to their extent of surface as well as to destructive depth. The complete incineration of a part, as a hand or a foot, might be a matter of less gravity than even a merely diffuse erythema affecting a large area of the skin. A man once walked into this hospital who had fallen into a vat or tank, and was immersed in water not hot enough to produce more than a superficial irritation of the derma, and without in any place blistering, yet he died within a very few hours. I have had cases in which part of a limb has been totally charred, through integuments, muscles, and even bone. One was that of a man who had been held for some time in the ruins of a fallen blast-furnace, whilst portions of his feet and hands were immersed in flowing molten metal until even the bones were charred; yet he recovered,—of course in a maimed condition. In another instance a man's leg was, by a curious accident, so held in a pot of molten iron that he could not extricate it, and the disorganization was total. So it is evident to you how the grades of such injury must vary.

Arbitrary classifications of burns are made by some surgical authorities, based on their depth, but you need not be troubled about memorizing six or eight distinctions if you will merely bear in mind that the pathological significance, the prognosis, and the treatment of the injury will vary with its locality, the extent of surface involved, and the depth of penetration. If the application of heat be only momentary, a mere erythematous redness will follow, the cuticle will soon desquamate, and then complete restoration will ensue. A more prolonged application of heat will produce serous effusion, elevating the cuticle in the familiar blisters of bullæ. A deeper burn disorganizes the entire skin, so that effusion cannot take place; and I have spoken of still deeper destruction, even to the complete incineration, of a part.

A scald results from the application of moist heat, which, with water or steam, is not usually above a temperature of 212°, and the action is liable to be but momentary and superficial in effect. But the prolonged impression of moist heat may be as destructive—and in a pathological view the effect is the same—as that of dry heat, and I am inclined to use the word burn in a generic sense, to include the general action of heat, moist or dry, on the body.

Some of the cases of deeply destructive burning of parts I have seen among persons who were insensible at the time of receiving the injury, as in cases of epileptics who have fallen into open fires or against stoves, and the coma of drunkenness has frequently caused the same. One of the most extensive and deep burns I have ever seen in these wards was in the case of a man who was at the time intoxicated by the fumes of a lime-kiln by which he had lain to warm himself until his back was deeply roasted from the nape to the coccyx.

It is one of the curious traditions of surgery that the effect of exposure of the surface of the body to the rays of the sun, producing erythema of the skin, is in the text-books classed with burns. That effect is rather due to the intensity of solar light than to heat. I have seen the so-called sun-burn produced when the air was cold and the parts exposed necessarily colder than those which remained covered by clothing; and in the case of a boy whose neck and back were extensively vesicated from exposure to the sun whilst bathing, the skin had been continually wet with cold water, and actual burning was impossible.

When a severely burned patient is first brought into the wards, our intension is at once directed to two important and urgent demands of treatment,—the great pain that he is suffering, and the shock of injury. The immediate inhalation of an anæsthetic and a hypodermic injection of morphia are the speedy recourse, and these should be followed, if pain continues, by the internal administration of morphia, decisively, but yet with caution. When the injury is very severe and the prostration extreme, the patient