

Adrenalin in Medicine

4—Treatment of Hemorrhage

IN the control of all kinds of hemorrhage, with the exception of that following chloroform narcosis, Adrenalin is an efficient aid. The object of hemostatic treatment is to constrict the lumen of the bleeding vessels, thereby retarding the flow of blood and facilitating the formation of a clot which acts as a plug and arrests the hemorrhage.

Adrenalin is effective not only by virtue of its obvious vasoconstrictor action, but also because *it shortens the coagulation time.* This has been demonstrated by Cannon and his co-workers to be true particularly when small doses are injected intravenously or even subcutaneously.

In severe hemorrhages one drachm of Adrenalin 1:1000 in a pint of hot salt solution may be given by hypodermoclysis in the subcutaneous tissue under the breast or by infusion directly into a vein. This is not a large dose of Adrenalin if the hypodermoclysis or the infusion is given slowly.

Adrenalin is oxidized in the circulation so rapidly that the result of this injection is not the tumultuous effect that would be expected of one drachm of Adrenalin; it is rather the

evenly sustained effect of a few minims. Adrenalin restores and maintains the arterial tension, and the volume of fluid introduced into the almost exsanguinated vessels gives the heart something upon which to contract.

Superficial hemorrhages and others which, because of their location, are readily accessible may be treated by the topical application of previously moistened compresses to which are added a few drops of Adrenalin 1:1000. In the category of hemorrhages which are amenable to this local measure are those of the nose, mouth, throat, ear, vagina, uterus, and rectum.

In hematemesis give by mouth about one drachm of the 1:1000 solution. The ingestion of the remedy in this case brings it into immediate contact with the bleeding vessels. In hematuria the injection into the bladder of an ounce or two of a solution of Adrenalin 1:5000 or 1:10,000 is frequently effective.

Because of its vasoconstrictor action, Adrenalin is utilized also as an application to mucous membranes which are the sites of vascular engorgement or inflammation. Dilution to 1:5000 is proper when Adrenalin is used for this purpose.



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