

good for skin, mucous and synovial membrane, periosteum, fascia, muscle, lymph glands, nerves, viscera and even bone.

Anæsthesia exists only within the area infiltrated by the solution, and outside of that, normal sensation remains. In operations of, or through the skin and mucous membranes the first wheal is increased to the size of a dime by increased pressure on the piston; the needle is moved and reinserted at the periphery of the wheal, but still within it, and a new wheal raised. In this way the line of

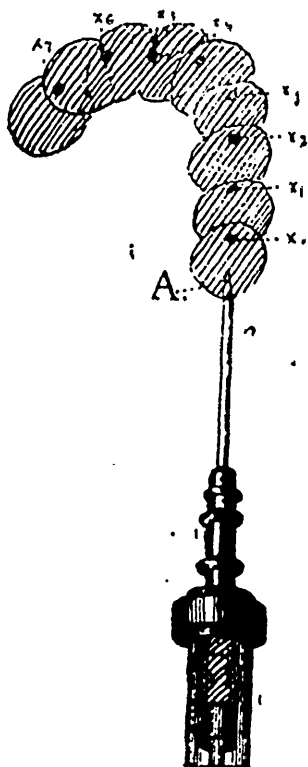


FIG. 2.—Formation of the cutaneous wheals. A.—Spot made anæsthetic by ether spray for the first injection.

incision is marked out to any desired length or breadth. (See Fig. 2.) In general surgical operations we would then infiltrate the underlying tissues, by slowly pushing in the needle and injecting a few drops at a time until the deeper tissue is edematized.

By cooling the spot selected for the formation of the first wheal by ether or rhigolene spray, or on mucous membranes by touching the spot with a strong solution of carbolic acid, or applying cocaine, the first injection may be made, if so desired, without ever feeling the prick of the needle. This is seldom necessary, as a very fine needle may be inserted without pain even in very tender tissues