Directions for using 'Stypven' Russell Viper Venom (not for injection).

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Directions for using
'STYPVEN' BRAND RUSSELL VIPER VENOM *(Not for Injection)*

Russell Viper Venom is a thromboplastin-like substance capable of converting prothrombin to thrombin in the presence of calcium and therefore possessing marked hæmostatic properties, which are evident in very dilute solutions. If a solution is applied to a bleeding surface firm fibrin clots are quickly formed.

'Stypven' is dried Russell Viper Venom issued in rubber-stoppered bottles, each accompanied by an ampoule of sterile distilled water containing 0·5 per cent phenol. To prepare a 1 : 10,000 solution the solvent is drawn up into a sterilised syringe and added to the dried venom. Two sizes are packed to make either 1 c.c. or 5 c.c. of solution.

The dried venom retains its potency for long periods but 'Stypven' in solution is stable for a limited period only. It is unwise to use a solution after it has been made up for seven days.

Surface Bleeding

'Stypven' may be used for all cases of excessive surface bleeding. The solution must come into direct contact with the bleeding area after intervening clot has been removed. It may be applied by means of a small sterile dressing soaked in the solution, through an atomiser, or the solution may be dropped on to the bleeding point from a fine hypodermic needle.

Hæmophilia

'Stypven' should always be at hand if hæmophilics have to be treated and should be applied immediately to any external wound or abrasion.

For dental extraction in patients known to be hæmophilic the following procedure is recommended :—

(1) Oral sepsis should first be cleared up preferably by treatment in hospital before extraction is attempted.

(2) After extraction the socket should be freed from clot and lightly plugged with a dressing soaked in 'Stypven' solution previously warmed to 50° C. (122° F.).

Any action likely to cause fresh trauma such as cauterization, strong pressure, or the use of irritant styptics should be avoided. If bleeding is very free adrenaline 1 : 1000 may be applied temporarily to cause constriction of the surface vessels, but should not be injected.

(3) The patient must be kept under close observation and the dressing should be removed very gently after twenty-four hours. In septic cases it may be necessary to renew it earlier. If free oozing starts again a fresh dressing soaked in the solution should be applied.

(4) Facilities for transfusion must be available in case the venom fails to check the bleeding.

Dental treatment in normal cases

'Stypven' may be used in a similar way for normal patients who have excessive bleeding after the extraction of teeth. Bleeding as a rule stops quickly and the patient can then be sent home. It can also be applied to arrest bleeding at the gum margin during fillings.

The addition of adrenaline 1 : 10,000 to the 'Stypven' solution, if bleeding is difficult to control, has been suggested. This may be effected by replacing 0·1 c.c. of the solvent with 0·1 c.c. of adrenaline 1 : 1000 in making 1 c.c. of solution.

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Epistaxis

The insertion of a pledget soaked in ' Stypven ' solution in the nostril is often effective.

Surgery

The possibilities of viper venom as a hæmostatic in general surgery have not yet been fully investigated.

A number of clinicians have recorded the successful application of ' Stypven ' after tonsillectomy and there is evidence to show that it may be of considerable use in nasal-oral operations followed by troublesome bleeding or oozing as in operations on the biliary tract, prostate, breast, nose and mouth, etc.

NOTE.—Although ' Stypven ' is issued for local application and "Not for Injection," results have been reported of the control of hæmorrhage in man by the injection of 0·5 c.c. to 1 c.c. of 1 : 100,000 solution, either intravenously or intradermally, as an emergency measure.

Prothrombin Time

' Stypven ' Russell Viper Venom may be used as a thromboplastic solution for measuring prothrombin time. Several methods are in use according to whether the venom is used with the addition of lecithin or alone.

Method 1, using lecithin and venom.

Warm 1 c.c. of citrated plasma to 37° C. Add, in rapid succession, in the order indicated, the following reagents :—

1. 0·1 c.c. of a 1 : 10,000 solution of ' Stypven.'
2. 0·1 c.c. of a suitable fat (*i.e.*, 1% suspension of lecithin or cream from the top of milk).
3. 0·045 c.c. of a 4% solution of calcium chloride. Immediately shake the test tube violently to mix contents : then very gently tilt at frequent intervals or very slowly rotate at an angle to observe clottings. Normally a solid clot will form adhering to the tube. The prothrombin time is the interval, measured with a stop watch, between the addition of the calcium chloride solution and the formation of a clot.

Small deficiencies of prothrombin are said to be brought out better by using plasma diluted to 1 : 10.

Method 2, using venom only. A modification of Quick's method in which venom replaces brain extract.

1. Draw 4·5 c.c. of blood into a dry syringe and mix with 10 mgm. potassium oxalate.
2. Centrifuge at 1500 r.p.m. for 5 minutes and draw off the oxalated plasma.
3. Pipette 0·2 c.c. of oxalated plasma into a test tube (75 × 10 mm.).
4. Add *a)* 0·2 c.c. ' Stypven ' solution.
   b) 0·2 c.c. calcium chloride solution (1·11 gm. calcium chloride per 100 c.c. water).

Start the stop watch.

5. Agitate the tube for 10 to 15 seconds in a water bath at 37° C. Remove and tilt until separate fibrin particles are seen.

The interval between the addition of the calcium chloride and the first appearance of fibrin particles is the prothrombin time.

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