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SHORT COMMUNICATION

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Reparation of peripheral nerves with fibrin glue prepared from snake venom. Preliminary results

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A new fibrin glue obtained from snake venom is presented, with possible utilization in various fields of medicine. The preparation procedures and tests in the reparation of peripheral nerves are described. The preliminary results were similar to the conventional fibrin glue procedure.

UNITERMS: Fibrin glue. Snake venom. Peripheral nerves. Rats.

A trombim-like fraction was isolated from crude Crotalus snake venom through molecular exclusion and affinity chromatography (1). The active fractions were pooled and concentrated by dialysis (1,2,8). The pool was analyzed for protein concentration (6) and characterized by sodium-dodecil-sulfate polyacrilamide gel electrophoresis and immunoblotting (SDS-PAGE). The fibronogen source was the wet cryoprecipitate obtained from fresh human plasma through cold precipitation, containing an average of 120 mg/ 100 ml of fibrinogen (8).

The fibrin glue was obtained from the solution 1 (cryoprecipitate containing fibrinogen) (9) and the solution 2 (trombin-like snake venom fraction). The area to be glued was prepared, receiving Solution 1 as a first step, followed by application of equal volume of Solution 2 on top of it. After application, the rite was tightly in place for three minutes, so as to obtain firm adhesiveness (3,4,7,8). This procedure was tested for the reparation of sciatic nerves in Wistar rats, yielding results similar to those reported by other with conventional fibrin glue (5,7). The efficacy of the Snake Venom Glue can be evaluated through figures 1-3: the normal aspect of sciatic nerve (Fig. 1); the distal ending, after reparation by the Snake Venom fibrin Glue (Fig. 2); the number of nerve fibers is lower than in the proximal ending. When the distal ending was not repaired (Fig. 3), extensive fibrosis and absence of nerve fibers was seen. Comparing figures 2 and 3, we can conclud that

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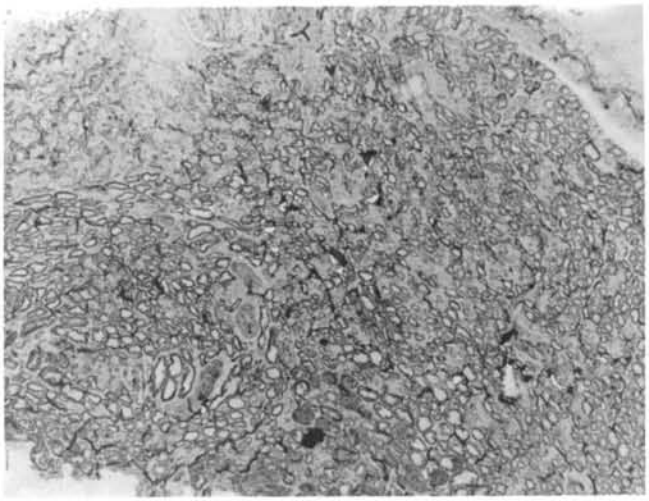

Figure 1. Transverse cut of rat sciatic nerve, proximal stump, with normal characteristics (16x)

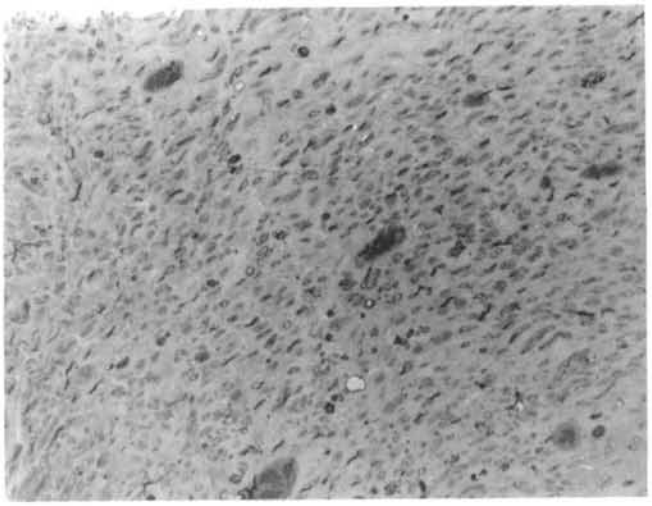

Figure 2. Transverse cut of rat sciatic nerve, right side. Distal stump, repaired by the fibrin glue derived from the snake venom (16x).

the fibrin glue allowed adequate adherence and nerve regeneration.

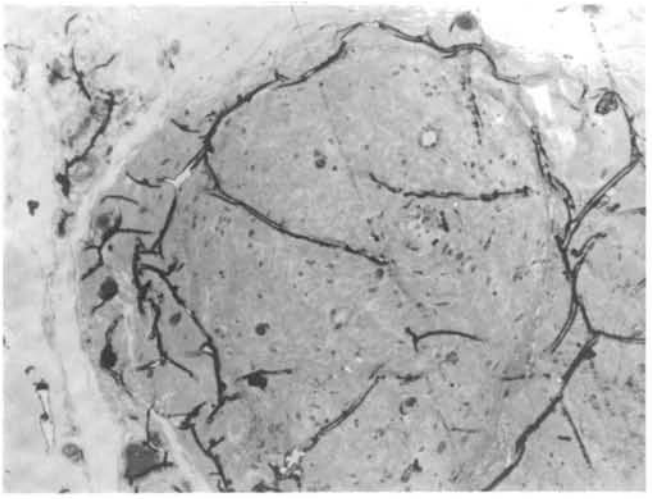

Figure 3. Transverse cut of rat sciatic nerve, left side, not repaired, distal stump (16x).

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RESUMO

Objetivo: Os autores apresentam um novo produto denominado cola de fibrina derivada de veneno de cobra, com possível utilização em várias áreas da medicina. **Material e Métodos:** Descrevem seu processo de preparação e a reparação em nervo periférico. **Resultados:** Os resultados preliminares obtidos foram semelhantes aos da cola de fibrina convencional.

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