

Experimental closure of gunshot wounds by fibrin glue with antibiotics in pigs.

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Publication Date: 2015

Abstract:

Background/Aim. Gunshot wounds caused by the automatic rifle M70AB2 (AK-47) 7.62 mm, after the primary surgical management, were closed with delayed primary suture during the next four to seven days. This period coincides with the fibroblastic phase of wound healing. Fibrin glue is used as a local hemostatic and as a matrix for the local dosed release of antibiotics. Antibiotics addition to fibrin glue resulted in continuous diffusion into the surrounding next 4 to 7 days. The aim of this study was to create the preconditions for gunshot wounds closing without complications by the application of fibrin glue with antibiotics 24 h after primary surgical treatment. **Methods.** A total of 14 pigs were wounded in the gluteofemoral region by the bullet M67, initial velocity of 720 m/s. All wounded animals were surgically treated according to the principles of the warsurgery doctrine. Seven wounds were closed with primary delayed suture four days after the primary surgical treatment (traditional approach). Fibrin glue with antibiotics was introduced in seven wounds during the primary surgical treatment and primary delayed suture was done after 24 h. The macroscopic appearance and the clinical assessment of the wound were done during the primary surgical treatment and during its revision after 24 h, as well as histopathological findings at the days 4 and 7 after wounding. **Results.** Gunshot wounds caused by the automatic rifle M70AB2 (AK-47) 7.62 mm, and treated with fibrin glue with antibiotics after primary surgical management, were closed with primary delayed suture after 24 h. In further wound evolution there were no complications. **Conclusion.** Uncomplicated soft-tissue wounds caused by an automatic M70AB2 rifle may be closed

primarily with delayed suture without the risk of developing complications if on revision, 24 h after primary surgery, there were no present necrotic tissues, hematoma, and any signs of infection when fibrin glue with antibiotics (ceftriaxone and clindamycin) was applied. The use of this method should be limited to individual and strictly controlled cases in civil practice for now.

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