Effect of Honey on Peridural Fibrosis Formation after Laminectomy in Rats: A Novel Experimental Study

Majid Reza Farrokhi,1, 2 Mohammad Vasei,3 Saeed Fareghbal,1 and Atefeh Bakhtazad1

1 Shiraz Neurosciences Research Center, Shiraz University of Medical Sciences, Shiraz, Iran
2 Shiraz Neurosciences Research Center, Chamran Hospital, Chamran Boulevard, 71966-93111 Shiraz, Iran
3Department of Pathology, Shiraz Neurosciences Research Center, Shiraz University of Medical Sciences, 71966-93111 Shiraz, Iran

Abstract

Despite progress in surgical techniques, some patients still face postoperative recurrence of pain. Recently, more attention has been focused on peridural fibrosis (PF), which may be responsible for recurrent pain after laminectomy or discectomy. Honey has been shown to exert anti-inflammatory effects on exposed tissues besides its well-known antibacterial properties. The aim of this study were to investigate the effects of honey on the prevention of postlaminectomy fibrosis formation in a rat model. A controlled blinded study was performed in 45 male adult white Sprague-Dawley rats that underwent laminectomy at the L5-L6 levels. They were divided into 3 groups (A, B, and C) of 15 rats each. Group A (sham) underwent laminectomy and group B was treated with normal saline at the laminectomy site. Rats in group C received 0.1mL honey at the laminectomy site. All rats were killed 4 weeks after laminectomy. PF was found in 5 rats (33%) of control groups A and B, and in 2 rats (10%) in honey-treated laminectomy group C. The difference was not statistically significant. Wound healing was not affected, and there was no cerebrospinal fluid leakage. Although honey appears to be safe, it cannot cause a significant reduction of PF formation after lumbar laminectomy in rats.