

Comparison of Superficial Surgical Site Infection in Simple Interrupted and Hybrid Mattress Suture after Posterior Approach for Spine Surgery

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Abstract

Objective: To compare the incidence of superficial surgical site infection after posterior approach procedures between simple interrupted suture group and hybrid mattress suture group.

Methods: A number of 38 patients who underwent posterior approach procedure were randomized into two groups. First group was sutured using simple interrupted suture while the second was using hybrid mattress suture. Bivariate statistical analysis was performed using Chi square test and Mann Whitney test. The superficial surgical site infection incidence was evaluated and recorded for both groups.

Results: A superficial surgical site infection was found in 26.3% of the simple interrupted group and no infection was found in the hybrid mattress group. Statistical analysis showed a p value of 0.046.

Conclusions: Compared to simple interrupted suture, hybrid mattress suture has less superficial surgical site infection in posterior approach for spine surgery.

Received:
June 5, 2014

Revised:
July 22, 2014

Accepted:
August 31, 2015

Keywords: Hybrid mattress suture, simple interrupted suture, superficial surgical site infection, wound healing

IJHS. 2015;3(1):85-8

Introduction

Surgical site infections are one of the major causes of morbidity and mortality of patients after surgery.¹⁻⁴ Surgical site infections will lead to a longer antibiotic administration, prolonged hospitalization time, disruption of wound healing, implant removal, and increased likelihood of reoperation for debridement.^{2,4-8}

Wound suture facilitates a good wound healing and prevents infection. Suturing the wound will prevent local ischemia that may lead to a decreased cellular proliferation, reduced defense against infection, and lower production of collagen, thus producing cumulative effect.^{9,10}

This study aimed to compare the incidence of superficial surgical site infection after

posterior approach between patients who underwent simple interrupted and hybrid mattress sutures.

Methods

A randomized prospective double blind study was conducted in patients who had undergone spine surgery with standard posterior approach. Patients were randomly divided into 2 groups; First group received simple interrupted suture while the second group received hybrid mattress suture.

After the posterior approach procedure, simple interrupted suture was performed by needle insertion at the edge of the wound to the contralateral side and continued with knot tying (Fig. 1a). The first hybrid mattress suture was performed as in simple interrupted suture, the second needle insertion was performed more medial and superior than the first needle insertion (Fig. 1b). Knot tying was performed

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