EFFICACY OF CLOSED SUCTION DRAINAGE IN ANTERIOR SPINAL FUSION FOR LUMBAR SPINAL TUBERCULOSIS

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Abstract  [Objective] Recently, the effectiveness of closed wound drainage has been evaluated for various types of orthopedic surgery. Some studies showed insufficient evidence to support the routine use of a drain. In the current analysis, the efficacy of closed suction drainage in anterior spinal fusion for lumbar spinal tuberculosis was retrospectively evaluated. [Patients and Methods] Ninety-one consecutive patients treated from January 1997 to January 2016 were included. Before 2006, a closed suction drainage system was placed immediately before wound closure (31 patients). From 2007, no drain was used (60 patients). The two groups of patients were compared regarding postoperative laboratory data (hemoglobin, albumin, and C-reactive protein [CRP]), postoperative complications (deep hematoma, paralysis, wound infection, wound healing, and wound discharge), and healing of the tuberculous lesion. [Results] There were no significant differences in decrease of hemoglobin and albumin between the second and seventh postoperative day. On the other hand, CRP showed a significantly smaller decrease in patients treated with a drain. Deep hematoma and postoperative paralysis were not detected in either group. Surgical site infection was detected in two patients with a drain. Delayed wound healing was noted in three patients with a drain and one patient without a drain. Persistent discharge was noted in nine patients with a drain. All patients showed excellent healing of the tuberculous lesion. [Conclusion] Comparison between patients with and without a suction drain did not show any definite advantage of drainage. Therefore, the routine use of a drain in anterior spinal fusion for lumbar spinal tuberculosis is not recommended.

Key words: Spinal tuberculosis, Drainage, Postoperative complication

Introduction

Closed wound suction drainage is commonly used in posterior spinal surgery to prevent postoperative hematoma, which can result in paralysis or wound infection. It is also used in anterior spinal fusion for spinal tuberculosis for the same reasons, as well as for the purpose of pus drainage. However, it is questionable whether drainage placement for removing pus from the surgical site is necessary after thorough debridement with anti-tuberculous drug treatment. Recently, the efficacy of closed wound drainage has been evaluated for various types of orthopedic surgery, due to its potential adverse effects, including wound contamination via the drainage tube or excessive bleeding. Some of these studies showed insufficient evidence to support the routine use of postoperative drainage\(^1\). From 2007, we stopped using closed suction drainage in anterior spinal fusion surgery for lumbar spinal tuberculosis in order to avoid the risk of postoperative infection. In the current study, we retrospectively evaluated the efficacy of closed suction drainage in anterior spinal fusion for lumbar spinal tuberculosis by comparing patients with versus without drain placement.

Patients and Methods

We retrospectively reviewed 91 consecutive patients underwent anterior spinal fusion for lumbar spinal tuberculosis from January 1997 to January 2016. The surgery was performed with the patient under general anesthesia. Debridement and tricortical iliac bone grafting were performed using the standard retroperitoneal approach. Before 2006, closed suction drainage systems (a 28FG catheter connected with an under water sealed drain system) were placed immediately before wound closure. Postoperatively, the drains were removed when the daily amount of drainage decreased to little or none. The drain insertion site was sutured after the removal. After 2007, no drain was used. Patients who underwent anterior and posterior fusion were excluded from the analysis. All patients received antibiotics using a standard anti-tuberculous drug.