



Intraoperative Blood Loss in Thoracolumbar Tuberculosis

Mlak Spath*, Daniel Jackson

Department of Internal Medicine, Ohio State University in Columbus, Ohio, USA

DESCRIPTION

During surgery for thoracic and lumbar tuberculosis infection, patients can lose a significant amount of blood and thus require a perioperative blood transfusion. However, the risk factors for increased intraoperative blood loss and perioperative blood transfusion have yet to be identified.

Subacute and chronic spinal infections are usually caused by a wide spectrum of pathogens, of which *Mycobacterium tuberculosis* is considered the most common [1]. The most common type of spinal tuberculosis is spondylodiscitis. In the last two decades, there has been a resurgence of tuberculosis in developed countries [2]. However, there are still challenges in the management of spinal tuberculosis [3,4]. Surgical treatment is indicated for patients with infections that are resistant to antibiotic therapy or patients with bone destruction, kyphosis, neurologic impairment and severe pain [4,5]. Generally, debridement and bone grafting are the first choice of surgical procedures.

Despite advances in surgical techniques, spinal tuberculosis is still associated with substantial blood loss, and many patients require a perioperative blood transfusion. Because tuberculosis is a systemic disease, the use of autologous blood transfusion is not recommended for such patients. In addition to issues regarding shortages and cost, allogeneic blood transfusion can be associated with serious complications and a prolonged operation. Thus, identifying patients at a high risk of intraoperative blood loss and those who are likely to require a perioperative blood transfusion is an important step to improve postoperative outcomes, reduce complications and minimize health resource utilization.

To date, few studies have elucidated the risk factors for blood loss during spinal tuberculosis surgery. Research has also yet to identify which clinical factors predict the need for perioperative blood transfusion and blood loss in patients undergoing debridement and reconstruction procedures.

Several clinical factors, including the higher number of involved discitis, higher levels of instrumentation and combined surgical approach, were found to be correlated with the increased rate of blood transfusion and intraoperative blood loss. However,

after adjusting for interactions between covariates in the multivariate analysis, the influence of these factors was revealed to be nonsignificant, and the odds of transfusion increased by 4.5 times when patients had a pathological fracture or kyphosis. The choice of surgical approach has been reported to be linked to intraoperative blood loss. Previous studies reported that one-stage anterior operation had advantages when compared to posterior instrumentation, as both instrumentation and grafting are performed as single-stage surgery through the same incision, which may minimize total blood loss. In contrast, other studies illustrated that the posterior approach favors less intraoperative blood loss. This difference may be attributed to the preference and experience of surgeons. Usually, the combined approach often leads to prolonged operative time and more blood loss, which may be associated with significant kyphosis and multiple-level lesions. Furthermore, our investigation revealed that increased operative time is strongly associated with a higher likelihood of blood transfusion and a higher amount of blood loss.

Therefore, the objective of the present study was to identify predictors of high intraoperative blood loss and the need for perioperative blood transfusion from our series.

REFERENCES

1. Skaf GS, Kanafani ZA, Araj GF, Kanj SS. Non-pyogenic infections of the spine. *Int J Antimicrobial Agents*. 2010;36(2):99-105.
2. Pellise F. Tuberculosis and Pott's disease, still very relevant health problems. *Eur Spine J*. 2013;22:527-528.
3. Dunn RN, Ben Husien M. Spinal tuberculosis. *Bone Joint J*. 2018;100(4):425-431.
4. Chen Y, Yang JS, Li T, Liu P, Liu TJ, He LM, et al. One-stage surgical management for lumbar brucella spondylitis by posterior debridement, autogenous bone graft and instrumentation: A case series of 24 patients. *Spine*. 2017;42(19):1112-E1118.
5. Li L, Xu J, Ma Y, Tang D, Chen Y, Luo F, et al. Surgical strategy and management outcomes for adjacent multisegmental spinal tuberculosis: A retrospective study of forty-eight patients. *Spine*. 2014;39(1):40-48.

Correspondence to: Mlak Spath, Department of Internal Medicine, Ohio State University in Columbus, Ohio, USA, E-mail: mspath@yahoo.com

Received: 14-Mar-2022, Manuscript No. JBBDT-22-16388; **Editor assigned:** 16-Mar-2022, Pre QC No. JBBDT-22-16388 (PQ); **Reviewed:** 22-Mar-2022, QC No JBBDT-22-16388; **Revised:** 28-Mar-2022, Manuscript No. JBBDT-22-16388 (R); **Published:** 04-Apr-2022, DOI: 10.4172/2155-9864.22.13.496.

Citation: Spath M, Jackson D (2022) Intraoperative Blood Loss in Thoracolumbar Tuberculosis. *J Blood Disord Transfus*. 13:496.

Copyright: © 2022 Spath M, et al. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.