

Postoperative wound healing can pose a problem in patients undergoing instrumented surgery for pyogenic spondylodiscitis. Robotic guidance allows the minimally invasive placement of pedicle screws in the thoracolumbar spine. We assessed whether using this technique to perform minimally invasive surgery had an impact on wound healing in patients with pyogenic spondylodiscitis when compared to conventional open fluoroscopy-guided surgery. We reviewed charts of 206 consecutive patients who underwent instrumentation for pyogenic spondylodiscitis. The need for wound revision was the primary outcome measure. Patient variables and comorbidities as well as surgical technique (robotic versus fluoroscopy-guided) were analyzed. We also compared fluoroscopy times between the two groups. Multivariate regression analysis was performed to identify predictors of wound breakdown. A total of 206 patients underwent surgery for spondylodiscitis. Robotic surgical assistance was used for percutaneous instrumentation in 47.6% of cases (n = 98). Wound healing problems requiring revision occurred in 30 out of 206 patients (14.6%). Univariate analysis revealed a potential association of wound breakdown with (1) robotic technique, (2) age > 70 years, and (3) the presence of methicillin-resistant *Staphylococcus aureus*. After multivariate correction however, only robotic technique retained significance with an odds ratio of 0.39 (CI 95% 0.16-0.94; p = 0.035). Wound revision was required in eight out of 98 patients (8.1%) in the robot group and 22/108 (20%) in the conventional surgery group. Fluoroscopy times were significantly lower in the robot group with a mean of  $123 \pm 86$  s in comparison with a mean of  $157 \pm 99$  s in the conventional group (p = 0.014). While initially designed to improve the accuracy of pedicle screw placement, robot-assisted minimally invasive technique had a tangible effect on both radiation exposure and the rate of wound breakdown in patients with pyogenic spondylodiscitis in our large single-center study <sup>1)</sup>.

<sup>1)</sup>

Alaid A, von Eckardstein K, Smoll NR, Solomiichuk V, Rohde V, Martinez R, Schatlo B. Robot guidance for percutaneous minimally invasive placement of pedicle screws for pyogenic spondylodiscitis is associated with lower rates of wound breakdown compared to conventional fluoroscopy-guided instrumentation. *Neurosurg Rev.* 2017 Jul 20. doi: 10.1007/s10143-017-0877-1. [Epub ahead of print] PubMed PMID: 28726010.

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