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Use of vacuum systems for early implant-associated infection after decompression and stabilization surgery for lumbar spinal stenosis

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Objective: To analyze the results of treatment of patients with implant-associated surgical site infection after decompression and stabilization surgery performed for lumbar spinal stenosis.

Material and Methods: Results of treatment of 43 patients with early (up to 90 days after the operation) suppuration of the surgical wound after decompression and stabilization operations for lumbar spinal stenosis were analyzed.

Results: A total of 4033 operations for lumbar spinal stenosis with implantation of stabilization systems were performed from 2015 to 2019. There were 43 (1.06 %) cases of early suppuration of the surgical wound with the installed instrumentation. Out of them seven (16.27 %) cases were superficial and 36 (83.78 %)– deep. The wound revision, surgical debridement and installation of a vacuum assisted closure (VAC-dressing) were performed. The treatment of superficial suppuration was accompanied by a single installation of a VAC-dressing before wound closure, and deep suppuration from 2 to 8 VAC-dressings were changed. Wound healing achieved in all patients within 14–55 days. Timely diagnosis of the complication and application of negative pressure therapy allowed arresting the inflammatory process and preserving the implants in all patients with a follow- up period of 12 months.

Conclusion: In the case of development of early suppuration of the surgical wound, the patient needs an urgent sanitizing operation. Negative pressure treatment with VAC-dressings is an effective and safe way to relieve this complication. This method combined with etiotropic antibiotic therapy makes it possible to quickly cleanse and heal the wound while preserving the implanted instrumentation.

Recent publications

1. Basankin IV, Giulzatyan AA, Takhmazyan KK, Shapovalov VK et al. Features of TLIF/PLIF in lumbar spine nerve root anomalies. The literature review and own experience. Neyrokhirurgiya=Russian Journal of Neurosurgery 2020;23(3):75–84.
2. Shapovalov VK, Basankin IV, Afaunov AA, Gyulzatyan AA, Takhmazyan KK, Tayursky DA, Tomina MI. Use of vacuum systems for early implant-associated infection after decompression and stabilization surgery for lumbar spinal stenosis. Hir. Pozvonoc. 2021;18(3):53–60.
3. Basankin IV, Porkhanov VA, Takhmazyan KK, Shapovalov VKet al. Transpedicular endoscopic removal of highly migrated disc herniations of lumbar spine. Neyrokhirurgiya = Russian Journal of Neurosurgery 2020;22(3):42–50.

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