Spine surgery complications

Complications in spine surgery can arise in the intraoperative or the immediate postoperative period or in a delayed manner. These complications may lead to severe or even permanent morbidity if left undiagnosed and untreated.

Complication rates after spinal surgeries are still high, especially in patients with spinal metastases and poor clinical status (KPS), requiring revision surgeries in several cases. Therefore, specific risk factors should be determined to carefully select surgery groups [1)].

Gelfoamis widely used in spine surgery and its complication is rare. Gelfoam has been used to control the bleeding and prevent scar adhesion when used after laminectomy as an effective interposing membrane.

Arterial air embolism

Arterial air embolism.

Cerebrospinal fluid fistula

see Spinal Cerebrospinal fluid fistula.

Intracranial Hemorrhage following Spine Surgery

Intracranial Hemorrhage following Spine Surgery.

Pneumocephalus

see Pneumocephalus.

Spinal epidural hematoma

see Spinal epidural hematoma.

Spinal subdural hematoma

see Spinal subdural hematoma

Spinal infection

see Spinal infection.

Surgical site infection

Surgical site infection in spine surgery

Venous thromboembolism

see Venous thromboembolism.

Wrong-site surgery

Wrong-site surgery

Case series

459 patients who were divided into 5 groups: group 1, patients with cervical degenerative disease treated with posterior decompression; group 2, patients with cervical degenerative disease treated with instrumentation for spinal fusion; group 3, patients with thoracolumbar degenerative disease treated with instrumentation for spinal fusion; group 4, patients with lumbar spinal stenosis treated with posterior decompression; and group 5, patients with lumbar spondylolisthesis treated with 1-level posterior lumbar interbody fusion. A deep venous thrombosis and pulmonary embolism (PE) screening was performed for all patients. Binomial logistic regression analysis was used to assess the association of risk factors.

The incidence of VTE was 2.8%, 3.4%, 10.8%, 12.5%, and 10.1% in groups 1, 2, 3, 4, and 5, respectively. Female sex, advanced age, spinal level, and neurological deficits, were all risk factors. Cervical spinal surgery in particular had an associated low risk. In patients with PE, 3 of the 4 had no deep venous thrombosis, indicating that screening for PE is also needed in high-risk patients.

The prevalence of venous thromboembolism (VTE) after elective spinal surgery was different in each group [2].

1)

Lange N, Stadtmüller T, Scheibel S, Reischer G, Wagner A, Meyer B, Gempt J. Analysis of risk factors

for perioperative complications in spine surgery. Sci Rep. 2022 Aug 23;12(1):14350. doi: 10.1038/s41598-022-18417-z. PMID: 35999446.

2)

Yoshioka K, Murakami H, Demura S, Kato S, Tsuchiya H. Prevalence and risk factors for development of venous thromboembolism after degenerative spinal surgery. Spine (Phila Pa 1976). 2015 Mar 1;40(5):E301-6. doi: 10.1097/BRS.0000000000000727. PubMed PMID: 25494320.