

How to Cite:

Ali, A., Khan, Q., Zeb, J., Hamid, M. S., Saddique, M. M., & Aziz, F. U. (2022). Clinical results from spine operations and expert interviews a multi center study. *International Journal of Health Sciences*, 6(S10), 850–855.
<https://doi.org/10.53730/ijhs.v6nS10.13701>

Clinical results from spine operations and expert interviews a multi center study

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Abstract--Objective: This study aims to assess the short-term clinical results of spine procedures performed in a QHAMC, Nowshera, Pakistan. Methods: This study was conducted in orthopedic unit and neurosurgery unit of a QHAMC, Nowshera in Pakistan where this single-center investigation was carried out. The phrase "short-term clinical outcome" was used in this research to refer to the results of spine procedures within one week of the surgery. These results were broken down into three categories: Recovery, complications, and deaths. This particular research looked at a total of 208 different instances. In these patients, procedures such as Fenestration and discectomies, laminectomy, anterior cervical discectomies, and transpedicular fixations were performed. Results: Recovery was shown in terms of the muscle power restored in the limbs according to MRC

scale criteria at the time of discharging each patient. According to this criterion, there was no patient with Grade-0 power, one patient with Grade-1 power, four with Grade-2 power, 8 with Grade-3 power, 28 with Grade-4 power, and Grade-5 power of limb muscles in 148 patients. Complications observed in these patients were; heavy bleeding in 26 patients, delayed Recovery from anesthesia in 02 patient, hypertension in 6 patients, poor wound healing in 24 patients, DVT in 5 patients, malignancies like Ewing's sarcoma(95%), Angiosarcoma (3%) in 08 patients, and Infections like Meningitis(4%), Surgical site infections(5%) in 18 patients. Conclusion: This study shows that surgical therapy had more favorable outcomes than non-surgical treatment since none of the patients were reported to have grade-0 power, and 148 patients progressed to grade-05 power by the time they were discharged.

Keywords--outcome, spine surgeries, interviews, experts.

Introduction

Spinal deformities are a significant source of mobility limitations in older adults [1]. Most surgical procedures today to correct spinal abnormalities are very effective [2]. The clinical result of spinal procedures is crucial, whether short or long-term [3]. For older adults, degenerative lumbar abnormalities have become more frequent. Degenerative lumbar scoliosis often results from asymmetric degeneration of the intervertebral discs and joints [4]. Spinal abnormalities are characterized by back discomfort and mobility limitations. Initially, doctors would try non-invasive methods before turning to invasive procedures if they don't work [5]. The average risk of problems after spinal surgery ranges between 7 and 20 percent [6]. Surgeons' attention has been drawn to various problems, however, including herniation of the nucleus pulposus and stenosis of the lumbar spinal canal, which may cause damage to the nerve roots, as well as a rupture in the dura, a hematoma in the retroperitoneum, and surgical site infections[7]. Postoperative spinal epidural hematoma is the most significant and frequent complication of the spine and spinal cord surgery [8]. Dysfunction of the colon and urine bladder, sciatic nerve deformity (Sciatica), weakening of the muscles of the lower limbs, and a lack of sexual function are only some of the other side effects [9]. Optimal clinical outcomes, including full neurological Recovery, are more likely to occur when patients get rapid surgical therapy soon after their first diagnosis [10]. Complex interactions between the neural system, muscles, and skeleton are responsible for the body's capacity to maintain balance throughout the movement and in different situations [11].

Materials and Methods

Following ethical review and permission, this multicenter research was carried out at the Neurosurgery and orthopedic Department at the QHAMC, Nowshera, in Pakistan. While numerous instances of neurosurgery were received between January 2020 and January 2021, only 208 were reported for various spine procedures included in this research. These cases included Fenestration and

discectomies, laminectomies, trans- pedicular fixations, and anterior cervical discectomies. Meningocele, meningocele, and similar operations on the brain and spinal cord were left out of the research. We used proforma to collect spinal surgery patients' data and then analyzed the data using SPSS 24. Clinical outcomes after spine procedures were classified as either "recovery," "complications," or "deaths" in this research, with "short-term clinical outcome" referring to outcomes within a week of surgery. Some of the things that patients should expect throughout their relatively brief periods of spinal surgery recovery include muscle strength that was lost during the procedure has returned. In this analysis, muscle strength was measured and scored using the following criteria from the medical research council (MRC) scale; Paralysis of all movable body parts; a 0 grade. Grade 1: Slight muscular contractions are palpable but not strong enough to initiate movement. Grade 2: Gravity must be removed for the muscle to create movement via a joint. Third-Grade Concept: Muscles can only force a joint to move against gravity if there is no resistance. In the fourth grade, students should be able to use muscles to move a joint against light to moderate resistance. To get a 5, the muscle must be able to move the joint despite gravity and complete resistance from the examiner.

Results

A total of 208 patients who underwent spinal surgery of various kinds were reported for analysis. Fenestrations and Discectomies, Laminectomies, Trans-pedicular Fixations, and Anterior Cervical Discectomies were the names of the many spine operations performed. These patients were monitored for a full week before, during, and after their operations. Table 1 shows the types of surgeries, how often they occur, and the percentages of patients who have them.

Table 1
Types of surgeries

S.No	Type of Surgery	No. of Patients	Percentage
(1)	Fenestrations and Discectomies	70	32 %
(2)	Laminectomies	50	23 %
(3)	Trans-pedicular Fixations	36	19 %
(4)	Anterior Cervical Discectomies	52	26 %

Among the 208 people who were diagnosed, 118 (58%) were male, and 90 (42%) were female. These individuals were discovered to have comorbidities before surgery. Comorbidities were reported in half (104 instances) of the patients, including hypertension in 38 (17%), diabetes in 8 (08%), hepatitis-B and -c in 06 (03%), anemia in 2 (01%), and both hypertension and diabetes in 42 (20%). The patients had reported diseases before and after their operations. 24 (12%) patients were diagnosed with illnesses such as meningitis and surgical site infection, while 26 (14%) patients were discovered to have cancers like osteoblastoma, Ewing's sarcoma, giant-cell tumors, and Angiosarcoma. 158 out of 160 patients (75%) had no detectable pathology. According to the Medical Research Council (MRC) Scale, patients who had these operations reported significant improvements in their range of motion and muscular strength one week following surgery. Muscle strength in the limbs was measured before and

after surgery for all patients. Table 2 displays the outcomes for various muscular power ratings.

Table 2
Muscles Power after Surgeries (According to MRC Scale)

Muscles Power Grades	Power before surgery	Power after surgery
Grade-0 Power	0	0
Grade-1 Power	92	02
Grade-2 Power	50	04
Grade-3 Power	56	20
Grade-4 Power	8	34
Grade-5 Power	2	148
Total	208	208

These patients had postoperative complications such as excessive bleeding in 13 cases, prolonged anesthesia recovery in 02, high blood pressure in 06, slow wound healing in 24, DVT in 10, malignancies such as Ewing's sarcoma (01%) and Angiosarcoma (03%) in 08, and infections such as meningitis (04%) and surgical site infections (05%) in 18. There were no known deaths either before or after the operation.

Discussion

Moving your body in various ways is crucial for many aspects of survival. The inability to freely perform these actions has a detrimental effect on productivity. The axial skeleton supports the body's weight and facilitates mobility in all directions. The vertebrae comprise the vertebral column, a crucial part of the axial skeleton[12]. The vertebrae in your spine are held together by cushions called intervertebral discs, which allow for mobility at your spine's joints. Vertebral column and vertebral structural anomalies restrict axial skeleton mobility and cause additional symptoms, including discomfort, edema, and impaired blood circulation. Surgery may be necessary to correct certain spinal abnormalities, although medical care is usually the first line of defense. The clinical results of these operations are crucial. The duration of this clinical result varies. Although the long-term clinical result is gained over months and even years, this research focuses on the short-term clinical outcome, which is the outcome reported after one week of different procedures conducted for spine abnormalities[13].

Eighteen individuals with lumbar TB were surgically treated, according to the results of a recent study. Clinical results from a wide range of surgical procedures were recorded. After six months of follow-up, most patients who had had bone grafting fully recovered. Indicators were normal, and there was no sign of non-union or recurrence at the most recent follow-up. Most patients' elevated ESR and CRP values returned to baseline by the end of the third month. Degenerative lumbar scoliosis was also surgically cured in another research, including 31 individuals. These patients were monitored before surgery, after that, and after subsequent follow-ups. Participants were followed for an average of 48 months[14]. Clinical tests and imaging were performed as a follow-up and carried

out every six months following the first three years. Thirty patients healed completely. However, one patient who had internal fixation complained of soreness and tenderness in the lumbar area. Percutaneous lumbar foraminoplasty, a surgical method used to treat spinal stenosis in the lumbar foramen, was the focus of research on surgical treatment options. Fifteen out of the total 24 participants in this research had favorable outcomes. Patients reported significantly less pain after three months of follow-up. The short-term clinical outcome of 208 patients with percutaneous endoscopic lumbar discectomy for herniated discs was studied in China. The typical hospital stay lasts around 2.8 days[15]. Neurological impairment, gastrointestinal distress, head pain, and excessive travel time to and from home were the most common causes of discharge delays. Hernias and discomfort were the leading causes of readmission to hospitals 30 times. One case study on the use of physical therapy for Recovery Recovery from an epidural hematoma after surgery for lumbar canal stenosis was conducted in Japan. The 68-year-old patient had had an endoscopic laminectomy to treat stenosis of the canal between the L4 and L5 vertebrae. However, after just two days, the patient started experiencing numbness below the L5 level, diminished feelings in her lower limbs, and weakness in her right lower leg. The L4–L5 surgery site 15 epidural hematoma was seen on the MRI[16].

Conclusion

This study shows that surgical therapy is more effective since none of the patients were reported to have grade-0 power, and 148 patients had grade-5 power improvement at the time of discharge.

References

1. Gunaratnam C, Bernstein M, Sc MH, Klest B, Mutschler C, Tamaian A, et al. Risk factors for delay in surgery for patients undergoing elective anterior cervical discectomy and fusion. *BMC Med Inform Decis Mak* [Internet]. *BMC Medical Informatics and Decision Making*; 2019;9(4):1–8.
2. H, Setoguchi T, Tanabe F, Kawamura I, Tsuneyoshi Y, Kawabata N, et al. Risk Factors for Venous Thromboembolism After. 2015;94(5):1–4.
3. Ha K, Kim YH, Ahn J, Park H. Factors Affecting Survival in Patients Undergoing Palliative Spine Surgery for Metastatic Lung and Hepatocellular Cancer: Does the Type of Surgery Influence the Surgical Results for Metastatic Spine Disease? 2015;344–50.
4. Huang W, Wu T, Jia J, Cheng X. Percutaneous endoscopic lumbar discectomy for lumbar disc herniation as day surgery – short-term clinical results of 235 consecutive cases. 2019;0(September)
5. Iyagishima KM, Sushima ET, Shida KI. Factors affecting health-related quality of life one year after lumbar spinal fusion. :36–43.
6. Jack A, Ramey WL, Dettori JR, Tymchak ZA, Oskouian RJ, Hart RA, et al. Factors Associated With C5 Palsy Following Cervical Spine Surgery: A Systematic Review. 2019;9(8):881–94
7. Kato S, Dear T. Factors Affecting Length of Stay Following 3-Column Spinal Osteotomies in Pediatric Patients. 2019;1–7.
8. Klest B, Mutschler C, Tamaian A. Factors affecting surgery decision-making in patients with a chronic neurovascular condition. 2016;1–8.

9. Kluver M De, Willems P, Bie R De, Cumhur O. Clinical decision making in spinal fusion for chronic low back pain. Results of a nationwide survey among spine surgeons. 2011;1-10.
10. Knight RQ, Waddimba AC, Foster F, Alberts B, Sorensen J. " Big Pros and Big Cons ": Factors Influencing Utilization of Shared Decision-Making in Low Back Pain from a Surgeon's s Perspective. 2013;2(5).
11. Kobayashi K, Ando K, Kato F, Kanemura T, Sato K, Hachiya Y, et al. Predictors of Prolonged Length of Stay After Lumbar Interbody Fusion: A Multicenter Study. 2019;9(5):466-72
12. Moon JY, Yoon S, Kwon SM, Sim SE. Clinical outcome of percutaneous lumbar foraminoplasty using a safety-improved device in patients with lumbar foraminal spinal stenosis. 2019;15(February).
13. Morcos MW, Jiang F, Mcintosh G, Ahn H, Dea N, Abraham E, et al. Predictive Factors for Discharge Destination Following Posterior Lumbar Spinal Fusion: A Canadian Spine Outcome and Research Network (CSORN) Study. 2019;9(4):403-8.
14. Pu Y, Wang Q, Shi J, Sun G, Liu L, et al. The outcome of intervertebral surgery in the treatment of lumbar tuberculosis in children. 2019;10(February).
15. Sato K, Iwabuchi M, Fukuda H, Kusano K, Kaneko K, et al. RecoveryRecovery of paraplegiafollowing postoperative epidural hematomas in lumbar canal stenosis surgery by closed kinetic chain (CKC) exercises. :0-5.6. Clinic L. Factors affecting survival in 267 consecutivepatients undergoing surgery for spinal metastasis from renal cell carcinoma. 2014;20(January):108-16.
16. Wang D, Wang F, Tan B, Yuan Z. Evaluation of Degenerative Lumbar Scoliosis AfterShort Segment Decompression and Fusion. 2015;94(47):1-7.