



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.1287349>Available online at: <http://www.iajps.com>

Research Article

**EFFICACY AND CLINICAL RESULTS OF
INSTRUMENTATION IN SPINE SURGERY****¹Dr. Agha Mubaraz Khan, ²Dr. Ania Ehsan, ³Dr. Masooma Zafar**¹Medical Officer DHQ Hospital, Mianwali²House officer Jinnah Hospital Lahore³THQ Hospital, Chak Jhumra**Abstract:**

Objectives: Our aim is to know the instrumentation efficacy in the caries column of spine and to know clinical results of patients treated with this type of protocol.

Study design: A cross sectional Retrospective study

Place and Duration: The study was held in the Orthopedic Department Unit I of Bahawal Victoria Hospital, Bahawalpur for the period of one year from December 2016 to December 2017.

Materials and Methods: In the management of the vertebrae, 36 patients (21 females, 15 male) with an average age of 33 were undergo surgical intervention. Debridement of the affected spinal field was performed, followed fusion in all patients and by instrumentation. Surgical indications were medical treatment response, persisting instability and pain, progressive angular deformity and neurological deficit of the spine for three months. Antituberculosis therapy continued for 1 year postoperatively. By phone over the contact numbers given to them at the time of application all patients were approached and for evaluation the patients were called to the hospital. 31 patients were included in the study after informed consent. After 24 months of surgery The Oswestry Disability Index (ODI) was calculated for every patient.

Findings: In 2 out of 31 patients (6.6%), according to Oswestry disability index there was no disability. 23 patients (73.3%) were mildly disabled, and moderate disability occurs in 4 patients (13.3%). 1 patient was disabled completely and 1 had severe disability.

Conclusion: Long term functional outcome of spinal instrumentation for treatment of Tuberculous spondylitis is a good.

Key words: Instrumentation, Disability, Caries.

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Please cite this article in press Agha Mubaraz Khan *et al.*, *Efficacy and Clinical Results of Instrumentation in Spine Surgery*, *Indo Am. J. P. Sci.*, 2018; 05(05).

INTRODUCTION:

In Pakistan Tuberculous spondylitis is quite common. It forms all osteoarticular effects in 50-60% . Lesion is a form of arthritis and tuberculous osteomyelitis, usually involving one vertebrae or more and extending into nearby intervertebral discs. The support capacity of the spine mechanically may be reduced in parallel with disease severity and the size of the affected spinal structures. Musculoskeletal tuberculosis treatment is mainly medicinal. chemotherapy is for Conservative treatment however, has results are not much good, although new drugs may be available in some cases. Among patients treated conservatively with chemotherapy Tuberculosis Kifon is an important issue, plaster devices or jackets. The area of infection, the age of the patient determine the progression of kyphosis and the number of vertebrae involved. In childhood illnesses severity of deformity is greater and in many cases. The sagittal balance loss resulting from the appearance of vertebral involvement and for the surgeons to correct or prevent kyphosis kyphotic deformity is important to correct with surgical treatment alternatives.



Fig.1: Tuberculous osteomyelitis leading to loss of sagittal balance

(Figure 1) Medical treatment as well as surgical intervention has proved to be a effective way to address the issue. The vertebral issue is treated and all tissue and remaining devitalized are removed, the abscess is evacuated and for histopathology tissue can be removed. Autogenous bone graft can be used to fill the gap. Strut grafting can help to stabilize and correct angular deformity. For the effectiveness of medical treatment Debridement is necessary due to removal of the barrier created by fibrous tissue for antibiotics penetration. However, residual kyphosis, neurological complications keeps the risk high even after using the radical surgery and rib graft or iliac crest mentioned earlier. Even after complete healing of the infection, residual kyphosis management remains a problem for the surgeon. Moon *et al.* Concluded that only the anterior graft of the arm is unreliable for vertebral collapse prevention and that previous radical surgery should be done with stabilization. This enhances stability but also it also helps to form early grafts. Stabilization with metal implants has reduced the need for postoperative immobilization and has not been shown to increase the risk of long-term infection, even in the active phase of the disease.

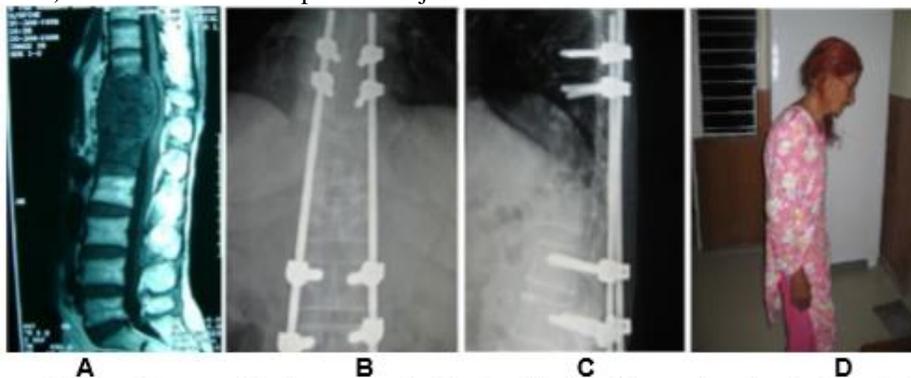
MATERIALS AND METHODS:

This cross sectional Retrospective study was held in the Orthopedic department Unit I of Bahawal Victoria Hospital, Bahawalpur for the period of one year from December 2016 to December 2017. Thirty-seven patients (31 patients) (N = 31) were included in the study because four patients disappeared or the contact numbers changed. Two patients were discharged from the hospital and then died. Debridement of the affected spinal field was performed, followed by instrumentation and fusion in all patients. Surgical indications were medical treatment response, persisting pain and instability, progressive neurological deficit and angular deformity of the spine for three months.

Table 1: Regional distribution of affected area of the spine of patients included in the study

Number of cases	Regional distribution
3	Cervical spine
12	Thoracic spine
7	Thoracolumbar junction
2	Lumbar spine
4	Lumbosacral junction
3	more than one level

The regional distribution (Table 1) showed that most patients were admitted with tuberculous lesions in the thoracic vertebrae (Figure 2). Almost all cases had previous injuries.

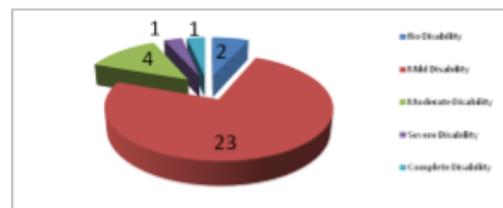
**Fig.2 :** Instrumentation (Transpedicular screw fixation) with debridement and anterior strut graft done in Tuberculous Osteomyelitis of D11-L1

All patients were approached by phone numbers given to them at the time of application and for evaluation patients were called to the hospital. After 24 months of surgery Oswestry Disability Index (ODI) was calculated in all patients. To evaluate the quality of life of a patient and to evaluate the results Oswestry disability index is a tool that have proven to be an effective tool for assessing disability. Personal care consists of questions based on various daily activities such as walking, lifting, standing, sitting, sex life (if any), sleeping, travel and social life. In addition, the interview asks about the intensity of the pain. The "best answer" given by the patient is scored accordingly to explain their pain or limitations. The total score possible for each episode is the addition of the scores taken from each episode that determine the disability level classified as follows: Mild 5-14, None 0-4, Heavy 25-34, Moderate 15-24 and Complete > 35. Anthrax decompression and canine fixation were performed and 8 patients underwent transpedicular fixation with screws and 3 patients underwent anterior decompression and plate fixation. Thirty-one patients (31 patients) of 37 patients operated between 2015 and 2016 were included in the study because 4 patients disappeared or the contact numbers changed. Patients were discharged from the hospital after the

discharge. The preparative magnetic resonance of the lesion, B & C post-operative images, 2 years follow-up image D.

RESULTS:

In 2 out of thirty one patients (6.6%) there were no obstacles according to the Oswestry Disability Index. mildly disabled patients were 23 patients (73.3%) , and moderate disability in 4 patients (13.3%) . Serious disability in 1 patient (3.3%) only and 1 patient was disabled completely. (Fig.3)

**Fig.3 :** Number of patients with different grades of disability after 12 months of surgery**DISCUSSION:**

Despite the high tuberculous spondylitis incidence, there is still a debate about surgical and medical treatment. However, patients with neurological deficit, abscess and kyphotic deformity require

surgery radical. patients with severe pain In our experience who did not respond to treatment medically gave surgically excellent results when applied. We analyzed the surgically managed tuberculosis patients results by the Oswestry disability index. This is a time-tested device to assess the results used to measure the level of disability of the patient in various daily activities. The quality of life can be classified. It is one of the measures specific to the main outcomes used in the treatment of spinal disorders.10 The original version of the ODI has been reviewed since its original development. The latest inspection was published in 2000. We applied our patients operated at least one year ago to determine the long-term results of the instrumentation carried out in the caries management. Some patients could not be seen and disappeared in their follow-up. They are not included in the study. 80% of our patients lead a good quality of life after one year of surgery. They can cope with most daily activities of life and do not receive any additional treatment other than advice on lifting, sitting and exercising. Patients (13.3%) are experiencing more pain, sitting, lifting and difficulty in getting up. Social and travel life is harder and you can not work. Personal care, sexual activity and sleep are not severely affected, and in general the patient can be managed conservatively. Only 1 patient has a serious disability. Pain is the main problem and affects daily life activities. This patient then requires detailed research and active management. A patient has back pain that affects all aspects of the patient's life. Some interventions are necessary, but there are many comorbidities that make the patient insufficient for future surgeries.

CONCLUSION:

In appropriately selected patients, spinal instrumentation is verified by obtaining safety and efficacy and a good long-term functional outcome.

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