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STUDY OF TUBERCULAR SPINE CONSERVATIVE MANAGEMENT VS SURGICAL MANAGEMENT

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ABSTRACT **Introduction:** Numerous regions in the world are endemic with tuberculosis. . The most prevalent type of tuberculosis affecting bones and joints is spinal tuberculosis; treatment approaches vary depending on the biology, mechanics, and neurology involved. Over the years, management approaches have evolved dramatically, moving from cautious monitoring to forceful debridement to targeted surgical indications predicated on well-established concepts. This has been made possible by the advancement of treatment through the development of innovative diagnostic tools for early illness identification, potent antitubercular therapy, and related research. With the introduction of minimally invasive spine surgery and its use in the treatment of spinal infections, this picture is quickly evolving. **Method:** From June 2020 to January 2021, the Department of Neurosurgery conducted this investigation. All patients with spinal tuberculosis diagnoses at the time of admission were included in the study. Patients were selected at random to receive both conservative and surgical therapy. Patients with a history of spinal injuries were not included in this study. The data was collected by the researcher in person. Each patient provided their informed consent. A one-tailed x2-test (Fisher's exact test) was employed in SPSS statistical analysis. **Result:** Of the ten patients, two underwent plate and screw fixation, one underwent a laparoscopic evaluation for a cold abscess, and three underwent decompression. One person had physiotherapy, two received antitubercular therapy, and one was put on bed rest. **Conclusion:** surgical intervention was a more effective means of improving the condition of individuals with spinal tuberculosis than antitubercular medication alone. Therefore, it may be concluded that surgical treatment is significantly more effective than conservative treatment for TB of the spine.

KEYWORDS : Tubercular Spine, Conservative management, Surgical Management

INTRODUCTION:

The first known instance of spinal tuberculosis (TB) was reported by Percival Pott in 1779, despite the fact that the disease was initially identified in 5,000-year-old Egyptian mummies. Less than 1% of TB patients have spinal involvement, but the disease is becoming more common in both industrialized and developing nations, making spinal TB a health concern. 50% of all instances of skeletal TB are caused by spinal TB, often known as Pott's disease. It is the most prevalent and dangerous type of TB. Any region of the spine may be impacted by spinal tuberculosis; however the thoracolumbar junction appears to be the most frequently involved place. [1]

The most prevalent illness affecting the skeleton in our nation is spinal tuberculosis, which can have disastrous and irreversible effects if not treated properly. HIV, a long-standing virus, has become a devastating and horrifying illness due to the rise of drug-resistant forms of the disease. The continuation of the illness in our society is attributed to unsanitary living conditions and low socioeconomic status. The lack of access to high-quality treatment and the careless and unscientific use of second-line antibiotics have contributed to the epidemic catastrophe that faces us all.[2]

The spine is where this disease's bone spread occurs most frequently. In roughly 1% of TB patients, it might be present. Patients with spinal TB, one-third to two-thirds may also have pulmonary TB. Hematogenous transmission is the main method of tuberculosis (TB) to the spine. Six since spinal TB typically progresses slowly; there may be a few months between the beginning of symptoms and the need for proper medical care. Individuals with spinal tuberculosis (TB) may exhibit a range of indications and symptoms, such as pain in the back or legs, kyphotic deformity, palpable mass in the paraspinal area, and neurological deterioration.[3]

About 1-2% of tuberculosis patients develop spinal tuberculosis, also known as Pott's spine, which accounts for 40–50% of musculoskeletal tuberculosis cases. It is brought on by a combination of the lymphatic drainage system and the haematogenous pathway leading to bone infection with Mycobacterium tuberculosis germs. Before the sickness itself is discovered, the organism typically remains latent in the skeletal system for a considerable amount of time. Arthritis and osteomyelitis are the main lesions. Granulation tissue may directly affect the spinal cord and leptomeninges, or the cord may be compressed by bony.[4]

METHOD

This study was conducted in the Department of Neurosurgery from June 2020 to January 2021. It was designed as a pragmatic randomized control experiment. The study included all patients diagnosed with spinal TB at the time of admission. Patients with a confirmed diagnosis of tuberculosis (TB) based on investigative results were chosen as the study population. Patients receiving both conservative and surgical care were chosen at random.

This study excluded patients with a history of spinal injuries. The researcher personally gathered the data. Every patient gave their informed permission. Utilizing SPSS, a one-tailed x2-test (Fisher's exact test) was used for statistical analysis to compare the results of conservative and surgical management for spinal TB.

RESULT: Table 1 Sex Distribution Of Study Subjects.

SEX	NO OF SUBJECTS
MALE	06
FEMALE	04
TOTAL	10

Out of 10 subjects, 6 were males and 4 were females.

TABLE 2: Management Of Tubercular Spine

SURGICAL MANAGEMENT	NO OF SUBJECTS
DECOMPRESSION	O3
PLATE AND SCREW FIXATION	02
LAPROSCOPIC COLD ABSCESS EVALUATION	01
MEDICAL MANAGEMENT	
ANTI TUBERCULAR TREATMENT	02
PHYSIOTHERAPY	01
BEDREST	01
TOTAL	10

Three of the ten patients had decompression, two had plate and screw fixation, and one had a laparoscopic examination of a cold abscess. Two participants received antitubercular therapy, one underwent physiotherapy, and one was placed on bed rest.

DISCUSSION

There are roughly 7.7 billion people on the planet. Among which one-fourth have TB. Approximately 2.79 million instances of TB on its own in India. One to three percent of all tuberculosis patients have skeletal system involvement. The most prevalent type of skeletal tuberculosis is spinal tuberculosis. Although it can strike at any age, spinal tuberculosis is more prevalent in the first three decades of life. The age range in this study was 6 to 67 years old, with a mean age of 26.4 years. The first three decades of life had the highest incidence (55%).[5]

An anterior technique with decompression, strut grafts, and internal fixation with plates or titanium mesh cages is the best surgical choice for cervical TB. There are a few small series reporting the use of posterior instrumentation for cervical tuberculosis however, the primary drawback is the twofold approach and rising morbidity. Special attention should be paid to tuberculosis at the craniovertebral junction since it can result in respiratory depression and quadriplegia. The course of treatment is determined by the patient's neurological condition, the degree of bone loss and spinal cord compression, the atlantoaxial dislocation that is linked to it, and the clinical outcome of antituberculous medication therapy.[6]

The cornerstone of treatment for both difficult and uncomplicated tuberculosis is multidrug antitubercular therapy (ATT). Because there are many types of bacilli in a lesion, multidrug ATT is necessary. Each of these forms—which can be extracellular, intracellular, latent, or quickly multiplying—has unique growth and metabolic characteristics. Multidrug ATT also lowers the incidence of drug resistance. The WHO recommends a 9-month course of treatment for spinal tuberculosis, consisting of two months of "initiation" chemotherapy (isoniazid, rifampicin, pyrazinamide, ethambutol, or streptomycin) and seven months of "continuation" chemotherapy (isoniazid and rifampicin for 7 months).[7]

Numerous studies have demonstrated a clear link between the intensity of back pain and sagittal spine misalignment. Hirakata et al.'s study demonstrated that a two-staged posterior (first) and anterior fusion procedure effectively restored and maintained spinal alignment in cases of spinal TB. They also mentioned how posterior instrumentation led to a significant reduction in pain. It is commonly recognized that posterior transpedicular instrumentation can prevent the development of late angular deformity by offering enough spinal stability. A crucial part of treating STB is early spinal instability repair, which helps to suppress the infection and provide a somewhat stable internal environment that reduces recurrence. Additionally, it has been shown in experiments that stiff spine stability aids in neurological rehabilitation.[8]

CONCLUSION

In 86% of cases, conservative treatment for patients with spinal TB is successful. In our patient sample, the WHO-recommended therapy period has shown to be sufficient with the required modifications determined by tracking clinical, laboratory, and radiographic development. According to this study, surgical intervention improved the condition of patients with spinal tuberculosis more effectively than antitubercular treatment by itself. Thus, it can be said that for tuberculosis of the spine, surgical treatment is far more successful than conservative treatment.

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