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A CASE STUDY ON- A PHYSIOTHERAPY INTERVENTION CERVICAL DISC BULGE

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ABSTRACT

With radicular syndromes or cervical myelopathy, multilevel cervical degenerative disc degeneration is well-known in the cervical spine pathology. Adults frequently experience one or two levels of cervical herniation, and older people with spinal stenosis frequently experience multilayer cervical degenerative disc herniation. Both conditions are caused by the disc's slow degradation. We present the case of a patient who had undergone anterior cervical microdiscectomy at both levels and fusion at C5-C6 for a two-level cervical disc herniation (C4-C5 and C5-C6). Five years later, the patient returned with left C7 radiculopathy, and an MRI revealed a left C6-C7 disc herniation. He underwent anterior microsurgical discectomy, which provided prompt symptom relief. Adults with three-level cervical herniated discs are uncommon, and this condition is treated with an anterior microdiscectomy with or without fusion.

Key words:- cervical disc bulging , cervical radiculopathy.

INTRODUCTION

The cervical intervertebral disc's deterioration is the most frequent cause of cervical disc herniation, while it can also happen as a result of cervical trauma. Rarely, a significant cervical disc herniation can result in paraplegia, bladder incontinence, and is a surgical emergency. Patients often appear with isolated neck discomfort, arm pain, or cervical radiculopathy. Spinal stenosis and neurologic compression are diagnosed through medical investigation using cervical MRI. The most common level affected by cervical herniated discs is C5-C6, followed by C4-C5 and C6-C7, and the annual incidence is 5.5/100,000 people. The majority of patients are in their fifth decade of life. cervical nerve compression is treated surgically with the symptomatic treatment. Anterior cervical microdiscectomy with or without fusion and microscopic posterior cervical foraminotomy are two surgical options.

A cervical disc herniation (CDH) can happen suddenly due to trauma, but it usually develops gradually as a result of mechanical and chemical degenerative processes. This article's primary goal is to describe the epidemiological patterns and pathophysiologic processes that lead to the symptoms and clinical manifestations of cervical disc herniation. While the information in this review is comprehensive and up to date, readers should be aware that there is less information available on cervical disc herniation than there is on lumbar disc herniation.

Disc herniations, which are abnormal protrusions of some disc material, are one of the most frequently observed disc problems. Depending on the degree of disc protrusion, an intervertebral disc herniation can have a number of different implications. Depending on the amount of the herniation, if the disc protrudes far enough, it may impinge on a spinal nerve as it leaves the vertebral column, which could result in symptoms spreading to the limbs. When flexion, extension, rotation, and their combination

exceed the strength of the annulus fibrosis and the supporting anterior and posterior ligaments, cervical disc herniation typically results. It has been demonstrated that the highest compressive force on the disc is produced by cervical flexion.

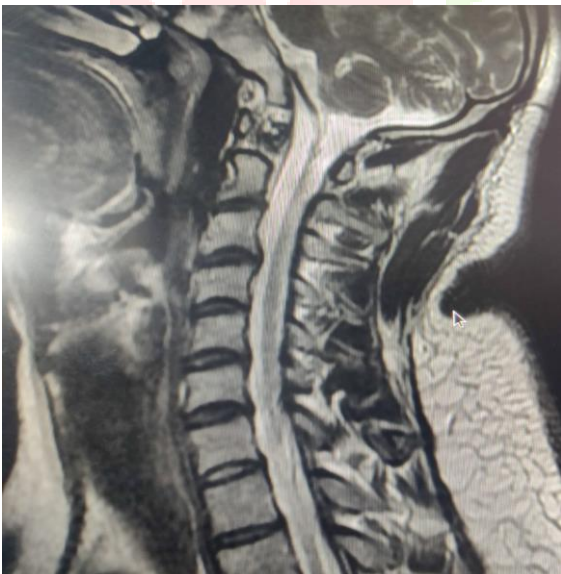
The annulus fibrosis's strength is affected by the disc's decreased moisture. The annulus fibers become less flexible and stiffer as the discs lose moisture. When compression is applied to the disc, this may cause the annulus fibrosis to break, and the nucleus pulposus may then protrude through the broken fibers. According to a study by Callaghan et al., herniations can happen even with low compression and flexion/extension moments when there are a lot of motion cycles. Therefore, if there is excessive repetitive activity of the cervical spine, a disc herniation can happen even with minimal levels of compression. The posterior lateral region is where disc herniations occur most frequently because of the posterior.

In rehabilitation settings, cervical traction has been widely utilized to reduce neck pain caused by muscle spasm or nerve compression. Because it helps to enlarge the disc gaps, traction, whether continuous or intermittent, has been recognized as an effective treatment for herniated cervical discs. The herniated discs regress and the traction relieves discomfort. Numerous stories have discussed the herniated discs shrinking either naturally or throughout the course of treatment. The goal of this case report is to describe how a patient with a cervical disc herniation was managed, as well as to demonstrate the effectiveness of cervical traction as a primary form of treatment for cervical disc herniation when combined with an effective at-home exercise regimen for ongoing management of disc herniation symptoms.

The hydration of the intervertebral discs themselves has the ability to alter both the amount of pressure and the ensuing movement. Due to the nucleus pulposus' high proteoglycan aggrecan content, it can withstand compressive loads. However, as we get older, the disc's structure changes and does not stay the same throughout life. The nucleus pulposus's 20% drop in proteoglycan content in mature adults is the most noticeable modification. Adults' water content of the nucleus decreases by around 75% along with this loss, which lowers the tissue's capacity to withstand compression. It is believed that the nucleus has lost its capacity to evenly distribute the applied loads.

A CASE DESCRIPTION

A 30-year-old man came in complaining of neck pain radiating to his right arm and forearm, as well as numbness and tingling, pain radiating to the right hand's thumb side, and weakness in his right hand. These symptoms started two months after a vigorous exertion, and he said the discomfort and weakness got worse three weeks later. During a physical examination, a weak right brachioradialis reflex was discovered.



MRI (magnetic resonance imaging) scan results revealed Cervical intervertebral discs are mildly desiccated. at C3/4, C4/5, C5/6, and C6/7 Levels minimal diffuse disc bulges are seen causing minimal indentation over thecal sac without significant compromise of bilateral lateral recess and neural foramina.

Microdiscectomy at both levels and fusion at C2-C7 were carried out using an anterior cervical technique, and the patient returned to work a month later.

Special Test



Figure 1 Spurling test

Test was Positive



Figure 2 Spurling test

Test was Positive

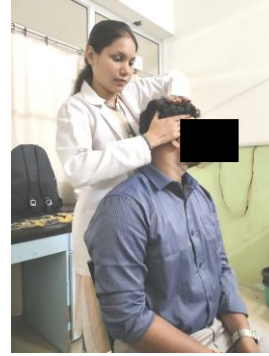


Figure 3 Spurling test

Test was Positive



Figure 4 Spurling test

Test was Positive



Figure 5 Vertebral artery test

Test was Positive



Figure 6 Vertebral artery test

Test was Positive



Figure 7 Vertebral artery test

Test was Positive



Figure 8 Distraction test

Test was Positive

DISCUSSION

Cervical disc herniation happens when the nucleus pulposus pushes through the annulus fibrosus as a result of severe strain on either the healthy intervertebral disc or the degenerated intervertebral disc. Signs of cervical Neck pain, pain in one arm that extends down to the hand or fingers, numbness or tingling in the arm or hand, unilateral weakness, etc. are symptoms of a herniated disc.

The cervical spine is examined with magnetic resonance imaging (MRI), which reveals the herniated disc, the cervical cord, and any neural foraminal or central canal stenosis that may be present. Surgery options include anterior cervical discectomy with or without fusion, posterior foraminotomy, and cervical complete disc replacement, whose indications are debatable. Nonoperative treatment options include medicines and physical therapy. The indications for cervical complete disc replacement, posterior foraminotomy, and anterior cervical discectomy with or without fusion remain debatable.

Our patient had a symptomatic, simultaneous three-level cervical disc herniation that was treated at two different time points: first, the patient had two level cervical disc herniations (C3-C4 and C5-C6) that were treated by anterior cervical microdiscectomy at both levels and fusion at C5-C6, and then, few time later, the patient had a left C6-C7 herniated disc that was treated by a second anterior microdiscectomy.

CONCLUSION

In adults without cervical degenerative disc disease, three-level cervical ruptured discs are uncommon, and intervertebral disc overstress is a factor in disc herniation. The intervertebral discs' deterioration and subsequent third disc herniation in this patient may be attributed to the fusion's reduction of the normal mobility on the next level.

This pathology can be treated by doing an anterior cervical microdiscectomy with or without fusion.

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