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Short Communication

Surgical Outcomes and Interventions of Cervical Kyphotic Deformity

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ABOUT THE STUDY

The most prevalent abnormality of the cervical spine is Cervical Kyphotic Deformity (CKD) [1]. Surgery is necessary if Cervical Kyphosis (CK) progresses and results in spinal cord injury [2]. The spine surgeon faces a problem while treating CK surgically since there is a wide range in the surgical approaches and results. Degenerative disc disease, trauma, neoplastic illness, infection, congenital deformity, neuromuscular diseases, and iatrogenic processes are among the well-researched causes of CK [1,3]. Nonetheless, several surgeons have noted an increase in outpatients with cervical spine kyphosis, whose pathophysiology was distinct from any of the explanations indicated above. Also, recent research has shown that the majority of patients are young people who often use smartphones for extended periods of time. Adolescent idiopathic CK was described in studies that documented 4 cases of CK with no apparent explanation and raised the possibility that postural habits may be connected to this condition [2]. Currently, it seems quite obvious that forward-flexed neck activities, such as constant texting, and sewing tasks, such as hand-weaving carpets and sewing clothes, are thought to be the main contributors to neck discomfort and related symptoms. Yet it is important to understand if a chronically forward-inclined head contributes to the onset of CKD and the precise mechanism.

There has been evidence between degenerative alterations in the CEP with multilevel laminectomy of the cervical spine [4]. Apoptosis of CEP chondrocytes in mouse intervertebral discs grown in organ culture has been linked to static mechanical stress. In their subsequent studies, an experimental model was developed to estimate the pathogenesis of chondrocyte apoptosis. This model revealed that mechanical stress induces apoptosis in rat cervical endplate chondrocytes through Mitogen-Activated Protein Kinase (MAPK) signalling pathway, which regulates mitochondrial-mediated apoptosis. Kong, et al. reported that the number of apoptotic CEP chondrocytes It should be highlighted that CEP chondrocyte death is important for spinal illnesses, however to our knowledge, no studies have looked into CEP apoptosis in CK in relation to spinal diseases.

Several surgeons reported an increase in outpatients with kyphotic alignment of the cervical spine in their offices. These patients, who were almost young, frequently used smartphones for extended periods of time while flexing their cervical spines. Students and young employees at shoe manufacturers and apparel companies in Iran and China have a high incidence of CK. These patients frequently have forward-flexed neck from prolonged hard exertion. While CK associated with forward head position has been extensively observed, no study has specifically shown the deformity's progression to yet. Shen, et al [5], theory that the kyphotic deformity may have a mechanical origin and that the neck extensors' weakening may play a role in the development of teenage idiopathic CK was put out. The strains placed on the cervical spine dramatically increased at more flexed positions, according to a new finite element analysis.

CONCLUSION

The absence of unbalanced force acting on the spine in the sagittal plane may be the reason. Moreover, the forward-flexed neck group's kyphotic curvature may be brought on by an unbalanced stress on the spine in the sagittal plane. Compared to the bipedal group and the normal group, the forward flexed neck group had histologic alterations and a higher frequency of apoptotic cells, suggesting that chondrocyte apoptosis may be essential to the development of CKD linked to prolonged forward flexion of the neck.

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