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# **COMPARATIVE STUDY BETWEEN CERVICAL CAGE AND PLATE APPLICATION AFTER ANTERIOR CERVICAL DISCECTOMY**

## **Thesis**

Submitted for partial fulfillment of M.D.in Neurosurgery

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### **Introduction**

Anterior cervical discectomy and fusion with an autogenous iliac bone graft is the gold standard treatment for cervical disc herniation. However, autologous bone grafts obtained from the anterior iliac crest are associated with significant donor-site morbidity and complications. To decrease bone graft-related problems, several types of interbody fusion cage have been developed and are used widely in clinical practice. ( **Fujibayashi et al.2008**)

Although the early results with the cages were satisfactory, problems such as migration, subsidence and structural failure of the cage with some difficulties in postoperative magnetic resonance imaging were observed . PEEK cages have recently been used in cervical surgery. PEEK is polyetheretherketone, a semi-crystal polyaromatic linear polymer. The use of a PEEK cage is becoming popular because of better elasticity and radiolucency . ( **Kahraman et al.2006**)

### **Aim of work**

To compare clinical and radiological short outcome of using either a cage or plate for cervical interbody fusion after anterior cervical discectomy.

## Anatomy

### Cervical vertebrae:

Because the cervical vertebrae bear the least weight, their bodies are relatively small and thin with respect to the size of the vertebral arch and vertebral foramen. In addition their diameter is greater transversely than in the anteroposterior diameter. **(Parke et al.2006)**

The lateral edges of the superior surface of each body are sharply turned upward to form the uncinata processes that are characteristic of the cervical region.

However, the most obvious diagnostic feature of the cervical vertebrae is the transverse foramina that perforate the transverse processes and transmit the vertebral arteries. The anterior part of the transverse processes represents fused costal elements that arise from the sides of the body. The lateral extremities of the transverse processes bear two projections, the anterior and posterior tubercles. The former serve as origins of anterior cervical muscles; the latter provide both origins and insertions for posterior cervical muscles. **.(Parke et al.2006)**

The cervical pedicles connect the posterior vertebral arch to the vertebral body. Anatomic studies have demonstrated that the cervical pedicle heights range from 5.1 to 9.5 mm, while width can range from 3.0 to 7.5 mm. The pedicles are angled medially between 90 and 110 degrees. **(Ebraheim et al.1997).**