

## SURGICAL ANATOMY OF DORSAL ROOT ENTRY ZONE OF CERVICAL SPINAL NERVES : CADAVERIC STUDY

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### ABSTRACT

**Background:** The main purpose of this study is to determine the detailed morphometric data of Dorsal Root Entry Zone (DREZ) of cervical spinal nerves. This knowledge is necessary for diagnosis, treatment and surgical management of pain due to many conditions like brachial plexus avulsion injury, post-herpetic neuralgia, phantom pain and cancer pain involved in cervical myelo-radiculopathy. There are fewer studies reported in this field of DREZ.

**Materials and Methods:** Twenty five adult formalin fixed cadavers are taken for this study. Conventional Spinal cord dissection is followed as per Cunningham's Dissection Manual.

**Findings:** The parameters included are Number of dorsal rootlets, Longitudinal Length of DREZ, Distance between two successive DREZ, Length of dorsal rootlets, Distance between right and left DREZ, Distance between DREZ and Ligamentum denticulatum, Cranial angles of Superior & inferior rootlets.

**Results:** Results were noted for all the parameters and are compared with the previous studies. The significant observations are obtained.

**Conclusion:** Surgical anatomy of Dorsal Root Entry Zone (DREZ) of cervical spinal nerves will be useful for the neurosurgeons doing Drezotomy procedure, in which the nociceptive fibres alone are specifically severed with preservation of other sensations.

**KEYWORDS:** DREZ, Dorsal Root Entry Zone, Cervical Spinal Nerves, Pain.

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### INTRODUCTION

Dorsal Root Entry Zone (DREZ) is the region on the posterolateral sulcus of spinal cord, where the dorsal rootlets carrying sensory fibers enter into the spinal cord. It is the junction between spinal cord (CNS) and spinal nerves (PNS).

Through these dorsal rootlets, all the sensations are carried to the spinal cord. Number of dorsal rootlets is not constant for all the spinal nerves. Region between entry points of first to last rootlet of one spinal nerve is called as Dorsal

Root Entry Zone of that nerve.

Chronic patients with cancer, brachial plexus avulsion injuries [1,2,3,4], paraplegia[5,6], spinal cord lesions[2,7], peripheral nerve lesions, phantom limb pain[1,8], post herpetic neuralgia[2,9,10]etc., suffer severe intolerable pain. When conservative treatments fail to abolish pain, surgeons prefer any one of the following.

They are: