

Global Spine J 2014; 04(01): 007-012

## Fluoroscopically Guided Extraforaminal Cervical Nerve Root Blocks: Analysis of Epidural Flow of the Injectate with Respect to Needle Tip Position

**Study Design** Retrospective evaluation of consecutively performed fluoroscopically guided cervical nerve root blocks.

**Objective** To describe the incidence of injectate central epidural flow with respect to needle tip position during fluoroscopically guided extraforaminal cervical nerve root blocks (ECNRBs).

**Methods** Between February 19, 2003 and June 11, 2003, 132 consecutive fluoroscopically guided ECNRBs performed with contrast media in the final injected material (injectate) were reviewed on 95 patients with average of 1.3 injections per patient. Fluoroscopic spot images documenting the procedure were obtained as part of standard quality assurance. An independent observer not directly involved in the procedures retrospectively reviewed the images, and the data were placed into a database. Image review was performed to determine optimal needle tip positioning for injectate epidural flow.

**Results** Central epidural injectate flow was obtained in only 28.9% of injections with the needle tip lateral to midline of the lateral mass (zone 2). 83.8% of injectate went into epidural space when the needle tip was medial to midline of the lateral mass (zone 3). 100% of injectate flowed epidurally when the needle tip was medial to or at the medial cortex of the lateral mass (zone 4). There was no statistically significant difference with regards to central epidural flow and the needle tip position on lateral view.

**Conclusion** To ensure central epidural flow with ECNRBs one must be prepared to pass the needle tip medial to midplane of the lateral mass or to medial cortex of the lateral mass. Approximately 16% of ECNRBs with needle tip medial to midline of the lateral mass did not flow into epidural space. One cannot claim a nerve block is an epidural block unless epidural flow of injectate is observed.

螢光鏡引導頸椎椎間孔神經根阻斷術：分析硬膜外注射液相對於針尖位置的流動

**研究設計** 連續性地對進行螢光鏡引導頸椎神經根阻斷術回顧性評價。

**目的** 為描述在螢光鏡引導頸椎椎間孔神經根阻斷術（ECNRBs）中硬膜外注射液相對於針尖位置中央流動的出現率。

**方法** 在 2003 年 2 月 19 日和 2003 年 6 月 11 日間，132 個連續性地以螢光鏡引導 ECNRBs 加入顯影劑在最後注射的材料（注射液）的 95 名病人進行了分析，平均每名患者有 1.3 注射劑。得到透視下點影像記錄的過程，作為標準質量保證的一部分。一個獨立的

觀察者不直接參與的程序，回顧性分析圖像，然後將數據放置到數據庫中。進行了圖像分析，以確定硬膜外注射液流動的最佳針尖定位。

**結果** 當針尖位置在外側到側塊的中線（區域 2），只有 28.9% 的注射的硬膜外注射液向中央流動。當針尖位置在側塊中線的內側（區域 3），83.8% 的注射液流到硬膜外腔。當針尖位置是在側塊的向內側，或在內側皮質（區域 4），100% 的注射液流向硬膜外。中央硬膜外流動和針尖位置的側位在統計學沒有顯著差異。

**結論** 為確保 ECNRBs 中央硬膜外流動，必須作好準備讓針尖通過側塊的內側至中間板或側塊的內側皮質。當針尖位置是在側塊的內側至中線，約 16% 的 ECNRBs 並沒有流入硬膜外腔。我們不能指神經阻斷術是硬膜外阻斷術，除非觀察到注射液在硬膜外流動的現象。