Abstract #: 117

Low frequency hearing loss occurs in after unintentional dural puncture with epidural needle in Obstetric patients

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Introduction: The reported incidence of transient low-frequency hearing loss after spinal anesthesia in non-obstetric patients varies widely from 0.4% to 92%. The purpose of this study was to determine if such hearing loss occurs on obstetric patients following unintentional dural puncture with epidural needle, and to assess the severity and recovery of such complications.

Methods: After REB approval and informed consent, the study was conducted in 45 parturients who received epidural analgesia for labor. Of these, 25 patients had unintentional dural puncture with 17G Touhy needle (study group), and 20 patients had epidurals placed without any dural puncture (control group). In both groups, audiometry testing was done within 24-72h after the epidural placement. In the study group, the patients were assessed for associated symptoms, and those not responding to conservative management were offered epidural blood patch (EBP). Audiometry was repeated in this group after 2 months. The data was analyzed by non-Wisconsin parametric test.

Results: There were no differences in patient demographics between groups. The audiometry results showed significantly higher hearing levels in decibels (db) in the study group as compared to the control group at low frequency hearing thresholds (250 Hz, p=0.013; 500 Hz, p=0.038; 750 Hz, p=0.048) (Fig 1). Also at low frequency, significantly high number of patients had slight to moderate (16 - 55 db) hearing loss in the study group (60%) compared to the control group (25%). Such differences were not seen at high frequency. In the study group, all patients reported headache, which was moderate to severe in 72% patients. Vestibular (nausea, vomiting, dizziness) and cochlear symptoms (hearing loss, plugging, tinnitus, ear pain) were reported by 44% and 32% patients respectively while 52% had musculoskeletal symptoms (neck/scapular pain), and 4% had blurry vision. EBP was performed in 44% patients in the study group. The audiometry results in the study group did not show any significant change after 2 month follow-up.

Conclusion: There is an evidence of mild to moderate hearing loss at low frequency as detected by audiometry in the obstetric population after unintentional dural puncture with epidural needle. These finding warrant prompt attention to aggressively treating such patients. Follow up for more than 2 months may be required for resolution of audiometry changes.

References: Reg Anesth 1996; 21:197-201; Anesthesia 2006;

Additional File:
Audiometry Results Between the Groups at Different Hearing Thresholds

Study Group Median (db) ± Interquartile Range

Hearing Level (Hz)