471964 - EPIDURAL CATHETER MIGRATION DURING LABOUR - A COMPARISON BETWEEN STANDARD VERSUS EPI-GUARD FIXATION

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Introduction: Epidural catheter migration is a known problem that exists in labour analgesia, and has been reported in some studies to occur in >50% of parturients (1). There have been case reports of previously functioning epidural catheters that have subsequently migrated, leading to catheter failure and other complications (2-3). The aim of this study is to uncover a more effective method of epidural catheter fixation that will limit its movement for labouring women, which could improve its analgesic capacity and decrease the potential complications of intravascular or subdural injection of medications.

Methods: After IRB approval, 112 labouring women were recruited and randomized. The standard dressing group consisted of coiling the epidural catheter on the skin and covering the coil with a transparent, occlusive dressing; the study group utilized the Epi-Guard epidural fixation device. The epidural catheter marking at the skin was recorded at the time of insertion and removal, as well as the duration of the epidural. Any inward movement was recorded as a positive value and any outward movement was assigned a negative value (to the nearest 0.5 cm). Study subjects were given a questionnaire regarding any complications they experienced, their satisfaction in the level of analgesia as well as the comfort of the fixation device. Results were analyzed using student t-test and a z-test for proportions. Statistical significance was assumed when $P < 0.05$.

Results: Catheters secured with standard method had a greater rate of migration (2.32 cm vs. 1.15 cm, $P = 0.0024$). Only 23% of catheters in the control group had no migration, compared to 54% of catheters secured with Epi-Guard fixation device ($P = 0.0013$). When considering 1 cm inward migration or 2 cm outward migration to be clinically significant, the control group had a migration rate of 43%, as compared to 12% in the study group. There was no statistically significant difference in complication rates. Two patients in the control group had complete dislodgement of the epidural catheters.

Discussion: We have shown a reduction in clinically significant catheter migration from 43% to 12% in the Epi-Guard group. Although 46% of catheters still migrated in the study group, the majority of them were less than 1 cm inward and 2 cm outward. The Epi-Guard dressing itself was considered comfortable by all women. There were no concerns regarding skin irritation or catheter damage as a result of the dressing. The sample sizes used in this study are not adequate to detect a statistical difference in complication rates between the 2 groups. Because women move significantly during labour, we feel that an effective way of securing epidural catheters can decrease the number of times these catheters need to be replaced or re-secured due to dislodgement. We feel that this study provides evidence that the Epi-Guard epidural catheter securement device is effective in decreasing catheter migration.

References: 1. Anaesthesia 42:661-663 1987. 2. Br J Anaesth 58:1194-1197 1986.

3. Anesth Analg 58:252-253 1979.

Epidural catheter movement

	Control	Epi-Guard	P value
Inward Movement (cm)	1.09	0.5	0.0046
Outward Movement (cm)	2.86	1.24	0.02
Absolute Movement (cm)	2.32	1.15	0.024
No Movement (%)	23	54	0.0013
Movement > 1cm inward or > 2 cm outward (%)	43	12	<0.0010