EPIDURAL SPREAD AFTER CHAYEN APPROACH TO LUMBAR PLEXUS BLOCK

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INTRODUCTION. Epidural blockade has previously been noted as a serious complication of the Lumbar plexus block (LPB). The incidence of local anesthetic epidural spread varies according to the technique used.

OBJECTIVE. We hypothesized that Chayen's approach, which involves a more caudal and more lateral needle entry point than the major techniques described in the literature, would be associated with a lower rate of epidural spread.

METHODS. We performed a retrospective study of all adult patients who underwent orthopedic surgery for total hip arthroplasty (THA) and hip hemiarthroplasty due to osteoarthritis and femoral neck fracturewith LPB, between January 1,2002, and December 31, 2017, in our institute. The LPB was performed according to Chayen’s technique using a mixture of mepivacaine and levobupivacaine (total volume, 25 ml) and a sciatic nerve block by the parasacral approach. The sensory and motor block was evaluated bilaterally during intraoperative and postoperative period.

RESULTS. A total of 731 patients met the inclusion criteria. Thirty-one cases were excluded due to lack of documentation. After exclusions, 700 ASA physical status I to IV patients undergoing a combined of LPB and sciatic nerve block for THA and hip hemiarthroplasty were included for analysis. The LPB was successfully performed in all patients. 284 of them (41%) were males and 416 (59%) were females. The mean age was 64.7 ± 20.1 years. Epidural anesthesia was reported in a single patient (0.14%; $p < 0.05$). Since the rate of epidural spread described with the other approaches is 8.44%, this involved a reduction of 8.30%. No other complications were recorded.

CONCLUSION. This study indicates that more caudal and more lateral approach to the LPB, such as the Chayen’s approach, is characterized by a lower epidural spread than the other approach to the LPB.

ARTICLE	APPROACH	METHOD	NUMBER OF PATIENT (n)	EPIDURAL SPREAD (n)
Biboulet	Dekrey	ENS	15	4
Parkinson	Dekrey	ENS	25	4
Parkinson	L4/L5	ENS	23	1
Capdevila	Capdevila	ENS	77	0
De Biasi	Capdevila	ENS	169	3
Mannion	Capdevila	ENS	30	10
Mannion	Winnie	ENS	30	12
Jankowski	Winnie	ENS	18	0
Stevens	Winnie	ENS	28	3
Farny	Winnie	ENS	45	4
Souron	Winnie	ENS	26	0
Pandin	Chayen	ENS	132	2
Tokat	Chayen	ENS	15	0
Our Study	Chayen	ENS	700	1

TABLE I. The table shows the epidural spread frequency of the local anesthetic in the various approaches for lumbar plexus block described in the literature by various authors.
ENS: electrical nerve stimulation.