

Early Decompressive Surgery for Compressive Neuropathy by Hematoma after Posterior Spinal Decompressive Surgery

Yong-Min Kim, M.D., Choong-Hee Won, M.D., Eui-Seong Choi, M.D., Byung-Ki Cho, M.D.

Department of Orthopaedic Surgery, College of Medicine, Chungbuk National University, Cheong-ju, Korea

– Abstract –

Study Design : A retrospective analysis was performed to identify the diagnostic and therapeutic factors related to postoperative compressive neuropathy by hematoma after posterior spinal decompressive surgery.

Objectives : To document by analysis the clinical course of postoperative compressive neuropathy by hematoma, the efficacy of early surgical decompression, and to recommend methods of prevention.

Summary of Literature Review : Various diagnostic and treatment modalities have been applied to postoperative compressive neuropathy after spinal surgery. However, the timing of surgical decompression remains controversial.

Materials and Methods : Five cases of postoperative compressive neuropathy after posterior spinal decompressive surgery, which occurred from May 1996 to May 2000, were investigated in terms of causes, clinical courses, and management profiles after early surgical decompression, and final outcome.

Results : Five cases (2.14%) among 234 patients were managed by re-decompression including the evacuation of hematoma. Four cases, which had been managed by earlier surgical decompression showed neurologic improvement after 2 postoperative weeks, and achieved favorable clinical results without grave neurologic sequelae. However, in one case, in which surgical decompression had been delayed, weakness of the peroneii remained.

Conclusion : Early evacuation of hematoma achieved a more favorable result than a delayed operation. Early diagnosis and prompt surgical decompression is recommended to reduce neurologic sequelae.

Key Words : Early decompressive surgery, Compressive neuropathy, Hematoma

Address reprint requests to

Yong-Min Kim, M.D.

Department of Orthopaedic Surgery, Chungbuk National University Hospital

#62, Gaesin-dong, Cheong-ju, Chungbuk 360-711, Korea

Tel : 82-43-269-6077, Fax : 82-43-274-8719, E-mail : ymkim@med.chungbuk.ac.kr

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Table 1. Profile of Compressive Neuropathy by Hematoma after Spine Surgery

Case	Sex/Age	Spine problem	Level of decompressive op. [§]	Level of compressive neuropathy	Interval to reoperation
1	F/65	Spinal stenosis	L4-S1	Rt. L5, S1 root	24hr
2	M/38	L2 bursting Fx.*	L2	Cauda equina	20hr
3	F/35	Traumatic disc rupture	L3-4	Cauda equina	16hr
4	F/24	HIVD [†]	L4-5, L5-S1	Rt. L5, S1 root	8month
5	M/51	CSM [‡]	C3-7	Lower cervical cord & root	24hr

*Fx: fracture, [†]CSM: cervical spondylotic myelopathy, [‡]HIVD: herniated intervertebral disc, [§]op: operation

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Table 2. Profile of Postoperative Neurologic Signs of Five Cases

Case	Motor signs (Rt. / Lt.)	Sciatica	Sensory change	D.T.R*		Anal reflex	Ankle clonus
				Knee	Ankle		
1	TA [†] 2+ / 4+ EPH [‡] 3 / 4+ Peronei 3 / 4+	Rt.	Rt. L5 & S1 area Perianal sense (++)	+/+	+/+	++	-/-
2	TA 0 / 0 EPH 0 / 0 Peronei 0 / 0	Both	Both L3-S1 area Perianal sense (±)	-/-	-/-	±	-/-
3	TA 2 / 0 EPH 0 / 0 Peronei 0 / 0	Both	Both L4-S1 area Perianal sense (-)	-/-	-/-	-	-/-
4	TA 3+ / 5 EPH 2 / 5 Peronei 1+ / 5	Rt.	Rt. L5 & S1 area Perianal sense (++)	+/+	-/+	++	-/-
5	Finger flexor 3 / 3 Finger abductor 2 / 3	-	Both C5-C8 area Perianal sense (++)	+++ Biceps jerk Triceps jerk	+++ ++ +++	++	-/-

*D.T.R: deep tendon reflex, [†]TA: tibialis anterior muscle, [‡]EPH: extensor hallus longus muscle

Table 3. Profile of Neurologic Signs at Final Follow-up of Five Cases

Case	Follow-up period	Motor signs (Rt. / Lt.)	Sensory signs	D.T.R*		Final complaint
				Knee	Ankle	
1	PO [§] 14 month	TA [†] 4+ / 5 EPH [‡] 4+ / 5 Peronei 5 / 5	symmetric intact Perianal sense (++)	+++	+++	Low back pain
2	PO 22 month	TA 4+ / 5 EPH 4+ / 5 Peronei 4+ / 5	Rt. S1 area Perianal sense (++)	+++	+++	Both L/E weakness
3	PO 17 month	TA 5 / 4+ EPH 5 / 5 Peronei 5 / 5	symmetric intact Perianal sense (++)	+++	+/+	Low back pain
4	PO 16 month	TA 3+ / 5 EPH 4- / 5 Peronei 3- / 5	Rt. L5 area Perianal sense (++)	+++	+++	Rt. foot drop
5	PO 12 month	Finger flexor 5 / 5 Finger abductor 5 / 5	Both C6-C7 area Perianal sense (++)	+++ Biceps jerk Triceps jerk	+++ ++ ++	Both hand tingling sense

*D.T.R: deep tendon reflex, [†]TA: tibialis anterior muscle, [‡]EPH: extensor hallus longus muscle, [§]PO: postoperative, L/E: lower extremity

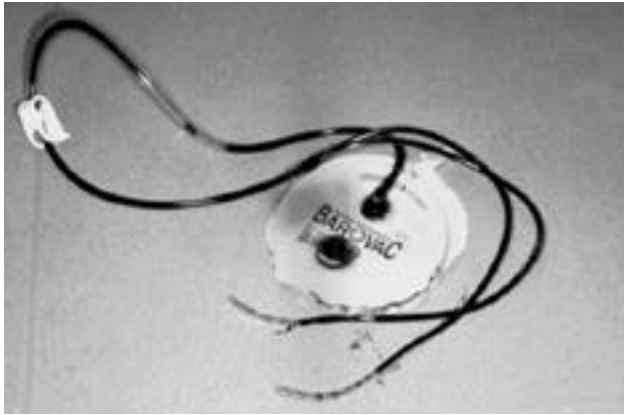


Fig. 1. Removed Hemo-vac shows malfunction of suction lines due to occlusion by blood clot

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Fig. 2. Immediate myelogram shows broad filling defect at main laminectomy site

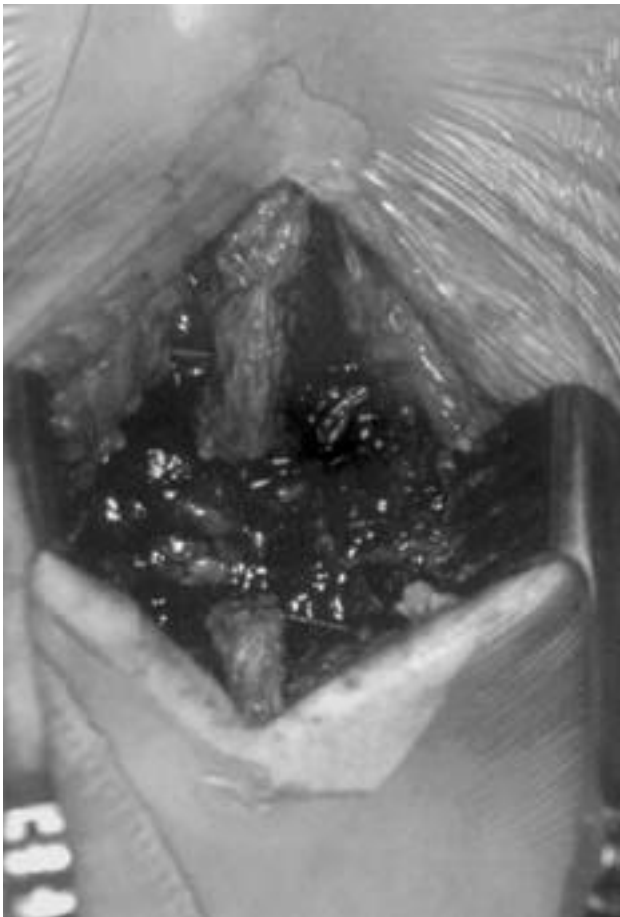


Fig. 3. Abundant blood clots compressing dura were evacuated within 24 hours after initial decompressive surgery

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Klenzak

steroid 12 11 1 (Fig. 4).

90% 4+ 3- (steppage gait) 4 4~5 5 (Fig. 5). 8



Fig. 4. Right L5 & S1 roots were not visualized in myelogram performed on 11th postoperative day (white arrows)

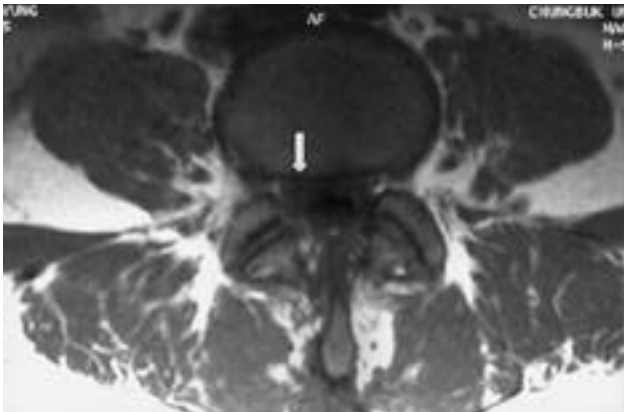


Fig. 5. MRI performed on postoperative fourth month shows severe scar adhesion by granulation of hematoma at right L5 root (white arrow)

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Tel : 82-43-269-6077, Fax : 82-43-274-8719, E-mail : ymkim@med.chungbuk.ac.k