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The significance of timing in operative intervention of spinal epidural abscess and its effects on early and long-term neurological outcomes

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Objectives: Early surgical intervention in Spinal Epidural Abscess (SEA) leads to better post-operative outcomes. The significance of urgent operative intervention in SEA as soon as the diagnosis is made in patients with preoperative neurological disability and the association between timing of surgery and onset of symptoms (neurological deficits) with its effects on early and long-term outcomes were analysed.

Material and Methods: This retrospective single centre study over 6 years (2011-2017) analysed 79 patients with SEA who presented with Neurological Deficits (ND) preoperatively and underwent operative treatment. All patients underwent laminectomy plus or minus spinal stabilisation. Timing from the diagnosis of SEA to surgical intervention noted and patients were categorised into 4 groups (<12hrs – 21/79, 12-24hrs – 37/79, 24-48hrs – 8/79, >48hrs – 13/79). Furthermore, time from onset of symptoms (ND) to surgery determined from history in all patients and noted. ASIA impairment scale utilised to assess the ND preoperatively and, followed up at discharge and 6,12 months intervals to measure the neurological outcomes.

Results: There was significant difference in improvement of ND at discharge in patients who underwent surgery <12hrs of diagnosis of SEA (90.5%) at $p=0.023$. Patients who had surgery within <24hrs (58/79) had their ND significantly improved at discharge ($p=0.048$) compared to the groups who had surgery after 24hrs (21/79). There was no significant difference in outcomes at 6 months and 1year between these two groups ($p=0.093$). Patients who received surgery within 48hrs of onset of their neurological symptoms had significantly good outcomes over patients who had surgery after 48hrs of symptom onset at discharge and at both 6 and 12 months follow up ($p=0.034$).

Conclusion: Urgent surgery within 24 hrs of diagnosis of SEA results in significantly improved early neurological outcomes although no significant difference in long term results. Earlier the surgery better the outcome. Surgery within 48hrs of onset of symptoms, significantly improve both early and long-term neurological outcomes.

Notes: