Outcomes Following Spinal Intradural Hematoma at a Single Institution

Jennifer L. Perez, M.D., Ph.D., Maria D. Astudillo Potes, B.S., Maria Peris Celda, M.D., Michelle J. Clarke, M.D., William E. Krauss, M.D., Mohamad Bydon, M.D., Jeremy L. Fogelson, M.D., Benjamin D. Elder, M.D., Ph.D.

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INTRODUCTION

Intradural hematomas are a rare neurosurgical condition that can cause severe and debilitating neurological deficits most frequently associated with anticoagulation or local trauma. Given the rarity, only a few case reports exist in the current body of literature with varying management approaches and outcomes. Here we aim to present the largest single institutional cohort describing risk factors, management strategies, and outcomes of intradural hematomas.

METHODS

This is a retrospective cohort study of all patients who were evaluated by Neurosurgery at the Mayo Clinic for spinal intradural hematoma from 1997-2023. Patients with isolated epidural hematoma and spinal subarachnoid hemorrhage secondary to intracranial pathology were excluded. Anticoagulation/antiplatelet use, trauma, and presence of a tumor were investigated as risk factors. Primary outcomes were neurological exam at discharge and after 6 months follow-up.

RESULTS

- Eight of 11 patients presented with partial or complete loss of motor function. Of these, 2 of 8 (25%) had improved motor exam postoperatively, one with full functional recovery.
- Nine of the 11 patients underwent surgical decompression and hematoma evacuation with or without expansile duraplasty.
- The greatest risk factors were antiplatelet use (64%), anticoagulation (45%), and trauma (36%); 6 of 11 (55%) patients had greater than 1 risk factor.
- The most common postoperative complication was secondary intracranial blood products in 4 of 11 (36%) patients ultimately contributing to 2 deaths.

Table 1

#	ASIA Initial	AP/AC	Trauma	ASIA follow-up
1	C	Y/Y	Y	B
2	C	Y/N	Y	C
3	A	N/Y	Y	A
4	C	N/Y	N	C
5	C	Y/N	N	C
6	E	N/N	N	E
7	D	Y/?	N	E
8	D	Y/N	N	D
9	E	N/N	N	E
10	E	Y/Y	Y	E
11	C	Y/Y	Y	D

Abbreviations: ASIA=The American Spinal Injury Association Impairment Scale. AP=Antiplatelet. AC=Anticoagulation. Y=Yes, N=N.

DISCUSSION

Consistent with existing literature, the most common risk factors for intradural spinal hematoma were the use of anticoagulation or antiplatelet medications. Trauma more rarely results in interdural hematoma in the literature, however, this accounted for 36% of our patient population. Operative evacuation of intradural hematoma did not significantly improve motor function in patients with moderate to severe motor impairment at the time of presentation but did resolve in a patient with mild motor deficits. Management of intradural hematomas remains controversial and has mixed outcomes due to low patient sample number and no randomized trial.

CONCLUSIONS

The risks and benefits of operative management of spinal intradural hematoma should be carefully considered in patients with moderate to severe motor impairment at the time of presentation.

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