Case Report

Home massage tool induced acute thoracic spinal epidural haematoma – a case report

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Abstract

Background: Spinal epidural haematoma is a rare but potentially devastating condition that may present as an acute neurosurgical emergency. Prompt recognition and intervention are critical to prevent permanent neurological deficits.

Aim: To report a rare case of spinal epidural haematoma following the use of a home massage tool and to highlight the importance of early diagnosis and urgent surgical management.

Case Report: We present a 72-year-old man who was admitted into the emergency room after developing weakness of both lower extremities following the use of a home massage tool. Definitive diagnosis was made after magnetic resonance imaging was done. He subsequently underwent an emergency decompressive laminectomy and evacuation of the haematoma.

Conclusion: Spinal epidural haematoma can present as a surgical emergency. Early diagnosis with magnetic resonance imaging and prompt surgical decompression are essential for favourable outcomes. With the increasing availability and use of commercial body massagers, greater public awareness and caution are warranted.

Keywords: Home massage tool, spinal epidural haematoma

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INTRODUCTION

Spinal epidural haematoma (SEH) is a rare condition that may present with acute onset of spinal pain or neurological deficits. It requires early diagnosis and prompt treatment, which can include surgical intervention. Aetiology may be spontaneous, traumatic, surgical, post-epidural catheterisation or idiopathic.[1] ‘Spontaneous’ herein refers to atraumatic aetiology. Several factors, such as anticoagulants, straining, lifting, sneezing, haemophilia, neoplasms, arteriovenous malformation, hypertension and others have been implicated.[2] This entity should be differentiated from ‘idiopathic’, in which there is no clear aetiology and represents about 40–60% of all spontaneous spinal epidural haematomas.[1]

Spontaneous spinal epidural haematoma was first described by Jackson in 1869.[3] Since its initial description, over 300 cases have been documented in the literature, with an even smaller number reported from the West African subregion.[4] It has an incidence of about 0.1 per 100,000 patients per year[5] with a male-to-female ratio of 2:1.[6] There is no race predilection, and it is most common between the ages of 40 and 80 years old.[7]

Clinical signs can rapidly develop with progressive and catastrophic neurologic sequelae.[8] Magnetic Resonance Imaging (MRI) is the diagnostic modality of choice.[9] When indicated, symptomatic spinal epidural haematoma requires urgent surgical decompression of the spinal canal with evacuation of the haematoma. Outcome is dependent on the location, degree of neurologic deficit, duration of symptoms and time to intervention.[10]

We present a case of an acute non-traumatic paraplegia due to a thoracic spinal epidural haematoma following the use of a commercial home massage tool.

CASE REPORT

A 72-year-old man presented with the inability to move both lower extremities and urinary retention of about 24 hours' duration. He developed sudden onset, electric shock-like pains in the mid back with radiation to both lower extremities while using a vibrating body massager (Figure 1). There was associated numbness and reduced power in both lower extremities. He was unable to pass urine and had faecal incontinence. He previously suffered from chronic, recurrent low back pain of about 4 years duration for which he had regularly used the device.

Figure 1: Home massage tool used by the patient

After initial care in a primary health care centre, where he was catheterized and was transferred to our facility, which is about 135 km from his domicile, for specialist care. He was a known hypertensive and diabetic, not on any anticoagulants or antiplatelet medication.

When examined, he was slightly agitated with Medical Research Council (MRC) power grade zero across the lower limbs and areflexia across the knees and ankles. He had a sensory level of T9 partially preserved to T11 with no sacral sparing. There was lax anal sphincter tone. Both the anal and bulbocavernosus reflexes were absent. He had point tenderness in the thoracolumbar junction, but there was no swelling or skin changes. A clinical assessment of T9 non-traumatic myelopathy American Spinal Injury Association (ASIA) grade A in spinal shock, was made. Blood investigations done, including complete blood count and clotting profile, were normal. The thoracic spine MRI showed an extra-axial mass lesion dorsal to the cord at T9, which had no enhancement on contrast administration (Figure 2). Differentials considered included a mitotic lesion and epidural haematoma. He had emergency T8-10 decompressive laminectomies. Intraoperatively, an acute haematoma with marked thecal compression was seen (Figure 3). The haematoma was evacuated, and rehabilitation commenced immediately. Pathological examination demonstrated a haematoma without malignant cells or abnormal blood vessels. Upon his last clinic visit, 3 years post op, he had power of MRC grade 2 in the lower extremities up to the right big toe with perianal sensation, but bi-sphincteric dysfunction persisted.

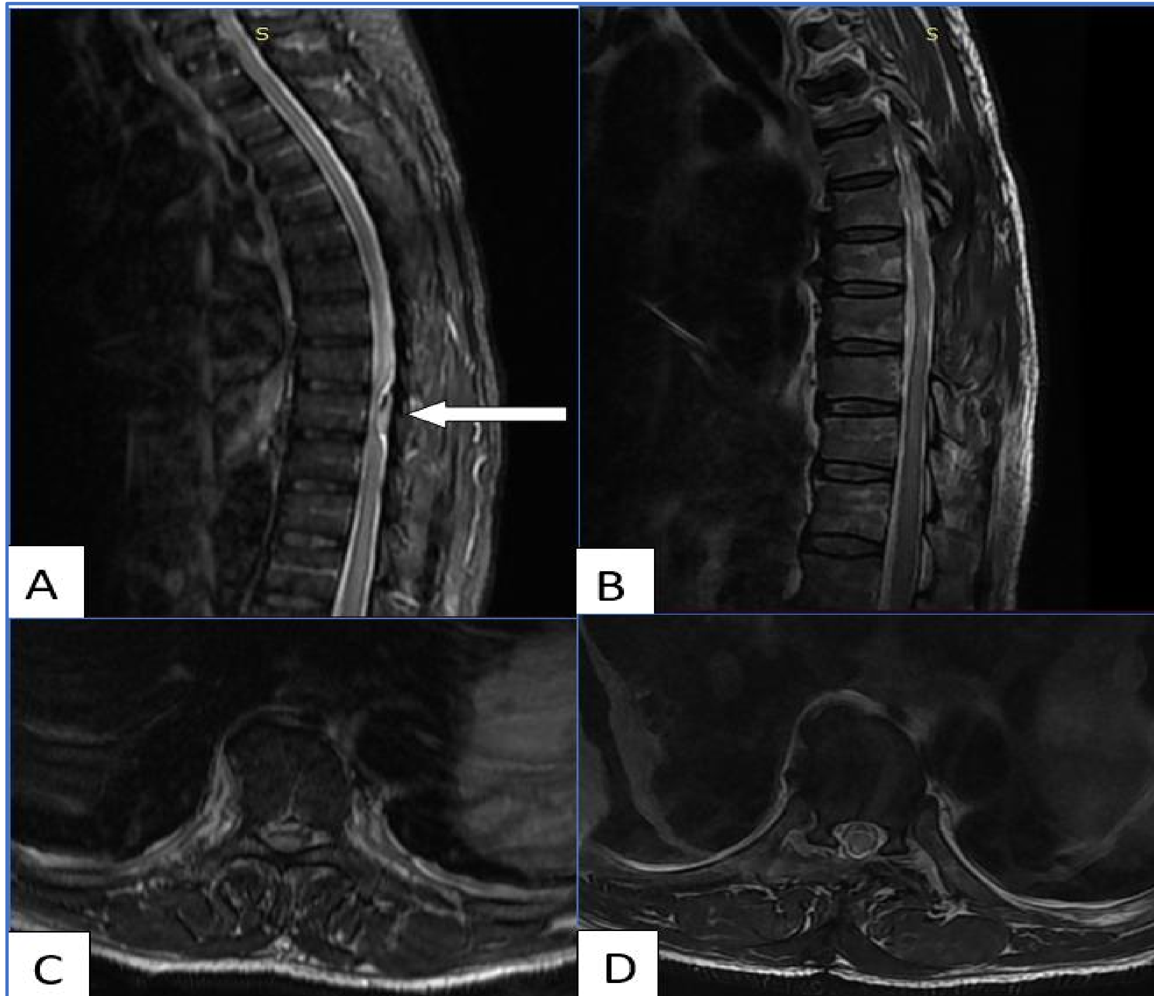

Figure 2: Magnetic Resonance Imaging (MRI) scan (T2-weighted) shows the dorsally located haematoma at the T9 vertebra level with cord compression, before (A and C) and three months after surgery (B and D).

DISCUSSION

The most common clinical presentation of SEH is the sudden onset of neck pain or back pain associated with features of spinal cord dysfunction or cauda equina compression. These symptoms and signs usually evolve rapidly after the onset of pain but may also present in a delayed fashion. It has been reported to occur at all anatomic levels in the spinal column, but it usually falls within two groups, C5-T2 and T12-L2.[11]The index case, with haematoma localisation at T9, therefore falls outside these commonly reported clusters. The spinal axial diameter across different anatomic levels is smallest at the thoracic vertebra level. The thoracic spinal cord is also known to have a tenuous blood supply with fewer radiculo-medullary branches compared to the thoracic and lumbar enlargements, which may affect neurological recovery after insult. Thoracic localisation may therefore contribute to more severe neurologic deficits and poorer recovery as seen in the index patient.

The diagnosis of acute epidural haematoma is usually based on clinical examination findings to determine the gross anatomic level and degree of neurologic compromise and radiological assessment to confirm the diagnosis and define the extent of the lesion. The combination of these usually determines if

surgical intervention is warranted. The definitive diagnosis is thus not based on history alone. This is due to the fact that aetiologic factors are heterogeneous and varied. Our patient had no clear risk factors, and it was initially difficult to link his symptoms with the body massager, as it was a device he had used for a long time. Also, this wasn't a common complication of its use, though recognised.[12] In cases where symptoms are more of mild weakness and radiculopathy, a strong differential would be a herniated disc. This is a more common clinical condition and must be considered when reviewing these patients.[5]

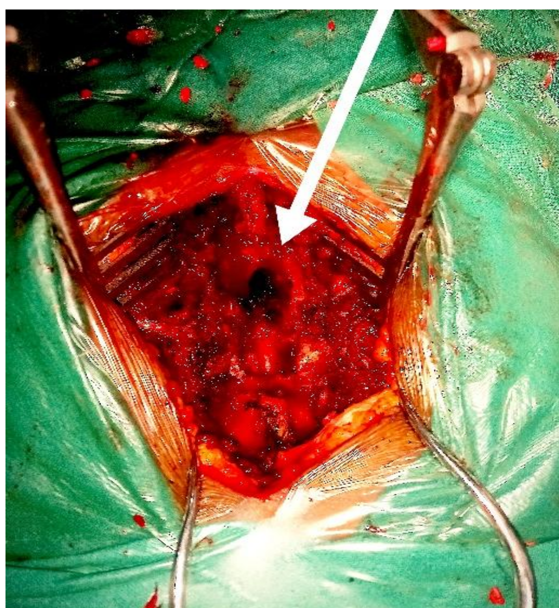

Figure 3: Intraoperative photograph after a decompressive laminectomy was done, with an arrow pointing to the lesion.

Magnetic Resonance Imaging (MRI) is the preferred diagnostic tool for SEH and can reveal the location and extent of the haematoma, the degree of spinal cord compression and the signal changes within the spinal cord. Signal characteristics vary according to the stage of haematoma evolution, aiding temporal characterisation.[2,5]Another major usefulness of the MRI is in differentiating other differentials of epidural cord lesions. In the index case, definitive diagnosis was established only after MRI evaluation, consistent with previous reports by other investigators.[6,11,13]

Where MRI is contraindicated or unavailable, spinal computerised tomography (CT) scans with or without myelography can also be useful, although with a slightly inferior sensitivity. Limited access to advanced neuroimaging remains a significant barrier in many low- and middle-income countries (LMICs) where high infrastructure costs and maintenance challenges continue to be a major impediment to its availability.[14] This contributes to significant delays in diagnosis and possible intervention, especially in sub-Saharan Africa, contributing to poorer outcomes.

Commercially marketed home massage tools are increasingly being used in the management of neck pain and back pain. These devices are perceived as affordable, convenient and easy to use. They are also being used as adjuncts to spinal manipulation therapy (SMT). Spinal manipulation therapy involves the application of high- velocity, low- amplitude forces to articulate the spinal column and is widely used to treat neck pain. SMT is rarely the cause of SEH, and the mechanism linking SMT and SEH is unclear.[15]Bleeding from the fragile epidural venous plexus is postulated to be the cause. A combination of these two methods of therapy may increase the risk of SEH, and further studies are warranted to clarify this potential association. In our patient, the commercial massage tool was the only aetiological factor we could identify. The vibrations of the tool could have been sufficient to rupture friable venous vessels in this elderly patient, as even relatively light external forces have been documented to result in traumatic SEH.[12]

Several factors influence postoperative recovery, including haematoma location, preoperative neurologic status, rapidity of symptom progression and timing of surgical decompression. The longer the duration of symptoms, the less likely full neurologic recovery. However, complete neurologic recovery has been reported up to 96 hours after symptom onset. Thus, even with delayed diagnosis, operative interventions can be offered.[4] In our patient, decompressive laminectomy was performed more than 48 hours after the onset of back pain. Although partial motor recovery was achieved, persistent lower

limb weakness and urinary dysfunction remain three years postoperatively, underscoring the prognostic significance of initial neurological severity and delayed intervention.

Delayed diagnosis in this case was multifactorial, reflecting both limited proximity to neurosurgical services and broader workforce shortages. Africa still has a very low neurosurgeon-to-population ratio, with most surgeons concentrated in the continent's urban centres.[16] This disparity exacerbates delays in definitive care for time-sensitive neurosurgical emergencies such as SEH and remains a major structural determinant of outcome.

CONCLUSION

SEH is a neurosurgical emergency that can rapidly lead to neurologic deficits, which can be permanent and life-altering. Its prognosis is usually dependent on its anatomic location, morphology of the lesion, duration of symptoms and timing of intervention. We present the case of an elderly patient who developed SEH following the use of a home massaging tool. Perhaps these vibrating tools may predispose elderly patients to developing this condition. However, due to its rarity, more research needs to be done. Treating physicians should be aware of the subtle signs of SEH in the setting of minimal or no clear antecedent trauma and should initiate prompt and appropriate imaging and treatment.

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Conflict of Interest:

There are no conflicts of interest.

REFERENCES

1. Duffill J, Sparrow OC, Millar J, Barker CS. Can spontaneous spinal epidural haematoma be managed safely without operation? A report of four cases. J Neurol Neurosurg Psychiatry 2000;69(6):816-819.
2. Zhong W, Chen H, You C, Li J, Liu Y, Huang S. Spontaneous spinal epidural haematoma. J Clin Neurosci 2011;18(11):1490-1494.
3. Jackson R. Case of spinal apoplexy. Lancet 1869;94(2392):5-6.
4. Dinsmore AJ, Leonard RB, Manthey D. Spontaneous spinal epidural haematoma: a case report. J Emerg Med 2005;28(4):423-426.
5. Holtas S, Heiling M, Lonntoft M. Spontaneous spinal epidural haematoma: findings at MR imaging and clinical correlation. Radiology 1996;199(2):409-413.
6. Kim T, Lee CH, Hyun SJ, Yoon SH, Kim KJ, Kim HJ. Clinical outcomes of spontaneous spinal epidural haematoma : a comparative study between conservative and surgical treatment. J Korean Neurosurg Soc 2012;52(6):523-527.
7. Meuga MW, Konan ML, Dongo S, Derou KL, Gbazi MS , Okamon DM, et al. Motor recovery after acute hemiparesis caused by spontaneous cervical spinal epidural haematoma: a case report. East Afr J Neurol Sci 2024;3(2):69-75.
8. Hammoud M, Mohammed HO, Chakour K, El Faiz Chaoui M. Spontaneous spinal epidural haematoma in infants: a case report and review of the literature. Surg Neurol Int 2024;15:320.
9. Labeodan OA. Spinal epidural haematoma mimicking spontaneous subarachnoid haemorrhage. Emerg Med J 2005;22(8):606-607.
10. Groen R, van Alphen H. Operative treatment of spontaneous spinal epidural haematomas: a study of the factors determining postoperative outcome. Neurosurgery 1996;39(3):494-509.
11. Raasck K, Habis AA, Aoude A, Simões L, Barros F, Reindl R, et al. Spontaneous spinal epidural haematoma management: a case series and literature review. Spinal Cord Ser Cases 2017;3(1):16043
12. Tominaga Y, Hirayama I, Nonaka M, Yano T, Ishii M. Commercial massage tool-induced spinal epidural haematoma. Acute Med Surg 2023;10(1):e886.
13. Hsieh CT, Chiang YH, Tang CT, Sun JM, Ju DT. Delayed traumatic thoracic spinal epidural haematoma: a case report and literature review. Am J Emerg Med 2007;25(1):69-71.
14. Ogbole GI, Adeyomoye AO, Badu-Peprah A, Mensah Y, Nzeh DA. Survey of magnetic resonance imaging availability in West Africa.

Pan Afr Med J 2018;30:240

15. Ryu JI, Han MH, Kim JM, Kim CH, Cheong JH. Cervical epidural haematoma that induced sudden paraparesis after cervical spine massage: case report and literature review. World Neurosurg 2018;112:217-220.
16. Ahmed H, Furqan M, Okon II, Oduoye MO, Mitchell UO, Akpan U, et al. The availability, access, challenges and advancements in neurosurgical care in Africa: a mini review. Ann Med Surg (Lond) 2024;86(4):2011-2015.