Journal of Case Reports and Studies
Volume 14 | Issue 2
ISSN: 2348-9820

Case Report Open Access

Left Trapezius Muscle Atrophy Following Cervical Lymph Node Biopsy in Idiopathic Multicentric Castleman Disease: A Case Report

Running Title: Trapezius Atrophy after Cervical Lymph Node Biopsy

Adnan A Aladraii[1*], Khalil Awad Al Malki[1], Muaath Mahna Alrehaili[1] and Lama Essa Ali Zidan[1]

[1]Department of Orthopaedic Surgery, King Abdullah Medical City, Makkah, Saudi Arabia

[*]**Corresponding author** Adnan A Aladraii, 1Department of Orthopaedic Surgery, King Abdullah Medical City, Makkah, Saudi Arabia, E-mail: Almalki.K@kamc.med.sa

Citation: Adnan A Aladraii, Khalil Awad Al Malki, Muaath Mahna Alrehaili, Lama Essa Ali Zidan (2026) Left Trapezius Muscle Atrophy Following Cervical Lymph Node Biopsy in Idiopathic Multicentric Castleman Disease: A Case Report. J Case Rep Stud 14(2): 101.

Received Date: August 15, 2026 **Accepted Date:** August 22, 2026 **Published Date:** August 31, 2026

Abstract

Background: Idiopathic multicentric Castleman disease (iMCD) requires excisional lymph node biopsy for definitive diagnosis. Although considered routine, cervical lymph node excision places the spinal accessory nerve (SAN) at risk due to its superficial course in the posterior cervical triangle. SAN injury is uncommon but can result in profound functional disability, cosmetic deformity, and long term morbidity.

Case Presentation: A 28 year old male with HHV 8–negative iMCD developed acute shoulder pain, weakness, and visible trapezius wasting ten days after left cervical lymph node biopsy. Despite achieving complete metabolic remission of iMCD following prednisolone and rituximab therapy, he exhibited persistent trapezius atrophy and scapular winging at 12 months. Electrodiagnostic studies confirmed SAN neurapraxia, while MRI and CT demonstrated marked trapezius volume loss and fatty infiltration. Intensive physiotherapy led to substantial functional improvement, yet residual weakness and deformity remained.

Conclusion: This case highlights SAN neurapraxia as a clinically significant and under recognized complication of cervical lymph node biopsy in iMCD. Early identification, targeted rehabilitation, and multidisciplinary management are essential to optimize recovery. Even with nerve remyelination and disease remission, trapezius atrophy may be irreversible, underscoring the importance of preventive surgical strategies and vigilant postoperative assessment.

Key Message: A "routine" cervical lymph node biopsy can produce long lasting functional impairment—prompt recognition of SAN injury is critical to preserving shoulder function.

Keywords: Idiopathic multicentric Castleman disease; spinal accessory nerve; trapezius atrophy; cervical lymph node biopsy; neurapraxia; scapular winging

Introduction

Idiopathic multicentric Castleman disease (iMCD) is a rare, complex, polyclonal lymphoproliferative syndrome without HHV 8 or POEMS syndrome, characterised by generalised lymphadenopathy, systemic inflammation, cytopenias, and multiorgan dysfunction [1,2]. Diagnosis requires excisional lymph node biopsy for histopathological evaluation to differentiate it from other lymphoproliferative and autoimmune disorders [3,4]. Cervical lymph node excision is the standard diagnostic procedure for suspected iMCD due to accessibility and high diagnostic yield. However, the surgical route traverses the posterior triangle of the neck, an area superficially crossed by the spinal accessory nerve (SAN), making it vulnerable to iatrogenic injury [5,6]. SAN injury can occur in up to 8% of cases [7] and is a leading cause of surgical morbidity following cervical lymphadenectomy [8].

Injury to the SAN causes denervation of the trapezius muscle, resulting in shoulder droop, pain, impaired abduction, scapular winging, and eventual visible muscle atrophy [9,10]. These deficits significantly impact quality of life and often require extensive rehabilitation [11]. We describe a case of left SAN neurapraxia with persistent trapezius muscle atrophy and scapular winging following cervical lymph node biopsy in a patient with iMCD.

Case Presentation

Clinical Course and Initial Evaluation

A 28-year-old male presented with a 3 month history of fever, malaise, and generalised lymphadenopathy. Examination revealed hepatosplenomegaly and palpable cervical, axillary, and inguinal lymph nodes. Laboratory tests showed normocytic anaemia, thrombocytopenia, high CRP, hypoalbuminemia, and polyclonal hypergammaglobulinemia.

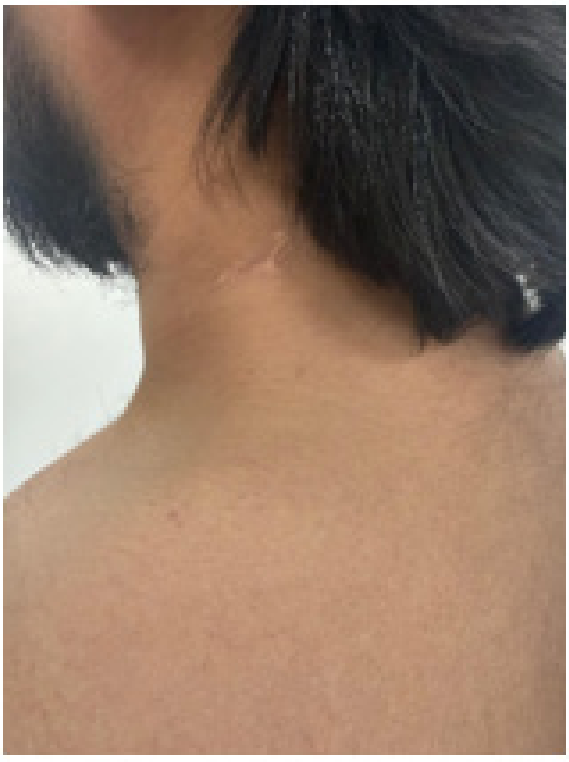

Figure 1A. Photograph of the left lateral neck demonstrating the healed surgical scar from the cervical lymph node excision, located in the posterior triangle where the spinal accessory nerve is most vulnerable to iatrogenic injury

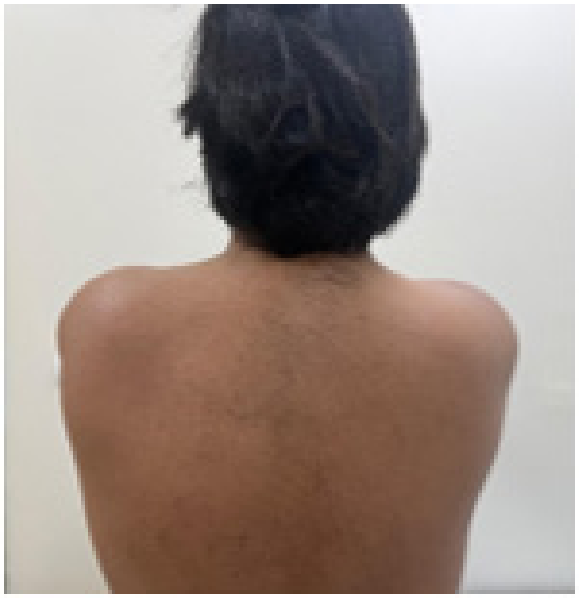

Figure 1B. Clinical photograph demonstrating marked left trapezius muscle atrophy with pronounced lateral scapular winging following cervical lymph node biopsy

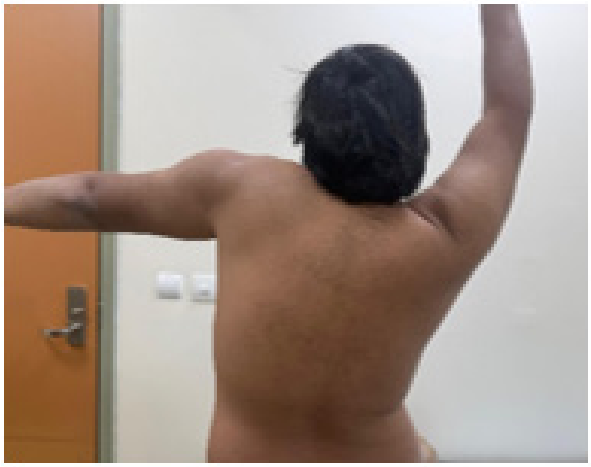

Figure 1C. Clinical photograph demonstrating limited active shoulder abduction (approximately 90°) on the left side, associated with trapezius weakness and scapular winging following cervical lymph node biopsy

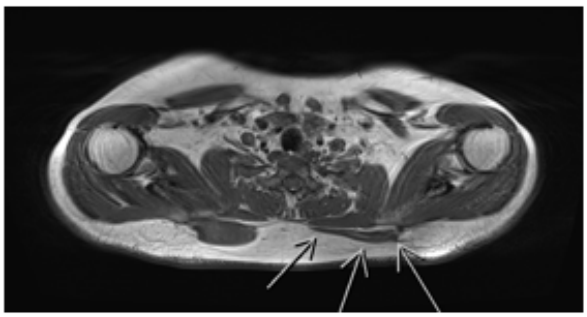

Figure 2. Axial MRI of the cervical and upper thoracic region demonstrating marked atrophy of the left trapezius muscle (white arrows) with increased signal intensity and volume loss with fatty infiltration, consistent with denervation changes following spinal accessory nerve neurapraxia.

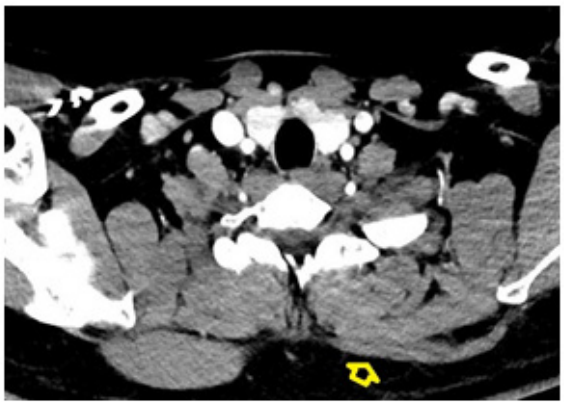

Figure 3. Axial CT image of the cervical and upper thoracic region demonstrates marked atrophy of the left trapezius muscle (yellow arrow) and showing trapezius volume loss and fatty infiltration. Consistent with denervation changes following spinal accessory nerve neurapraxia.

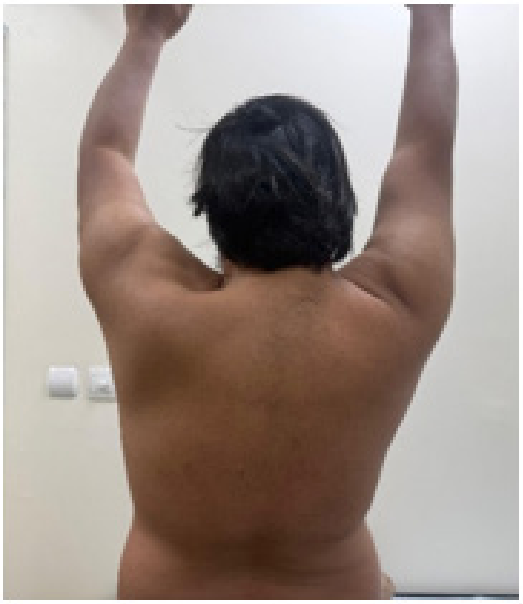

Figure 4. Clinical photograph showing improved active shoulder abduction after structured physiotherapy, demonstrating restoration of range of motion with residual mild scapular winging.

PET/CT revealed prominent supra and infra diaphragmatic lymphadenopathy (Figure 3A). Excisional biopsy of the left cervical lymph node confirmed HHV 8–negative iMCD (Figure 4A).

- Post-operative Complication
- Ten days after biopsy, the patient developed:
- Sudden onset left shoulder pain with ptosis
- Loss of muscle bulk in the left trapezius
- Scar of left neck posterior triangle open biopsy (Figure 1A)
- Active shoulder abduction with pronounced scapular winging (Figure 1B)

- Limited active ROM (flexion and abduction up to 90°; Figure 1C) with full passive ROM
- Positive Jobe and Speed tests
- Negative impingement signs

Evaluation for Diagnosis

Neurological Examination

Isolated trapezius weakness; sternocleidomastoid preserved; no generalised limb weakness.

Electrodiagnostic Studies

Nerve conduction study showed left SAN demyelinating neurapraxia with no evidence of nerve injury in any of the tested left side shoulder girdle nerves (accessory, axillary, suprascapular, long thoracic)

Imaging

- MRI: Signal hyperintensity and atrophy of the left trapezius (Figure 2).
- CT: Volume loss and fatty infiltration of the left trapezius (Figure 3).
- MRI shoulder: No rotator cuff or glenohumeral pathology.

Management and Outcome

Castleman Disease Treatment

Prednisolone (1 mg/kg) and six weekly rituximab infusions resulted in complete metabolic remission on PET scan at 3 months.

SAN Injury Treatment

Intensive physiotherapy focusing on scapular stabilisation and trapezius strengthening was initiated.

- At 12 month follow up:
- Flexion restored to 180°
- Abduction improved to 160°
- Mild–moderate trapezius atrophy and scapular winging persisted (Figure 4.)
- Serial nerve conduction studies showed partial recovery consistent with progressive remyelination

Discussion

Iatrogenic SAN injury is a recognised complication of cervical lymph node excision, with potential long term functional and cosmetic sequelae [7,12]. Due to the superficial course of the nerve in the posterior cervical triangle, especially at Erb's point, it is vulnerable to traction, transection, or thermal injury during dissection [13,14]. The hallmark is trapezius weakness and atrophy leading to shoulder dysfunction and scapular winging [9,15]. Early diagnosis is essential. In this case, early symptom onset and electrodiagnostic confirmation allowed timely rehabilitation. Most SAN injuries are neurapraxic and show significant recovery within months if physiotherapy is initiated early [16,17]. However, persistent muscle atrophy may occur in up to 30% of cases, particularly with prolonged denervation or incomplete reinnervation [18,19]. MRI and CT help quantify muscle atrophy and guide prognosis [20,21]. Differentiating iatrogenic focal neuropathy from systemic disease related weakness in iMCD is crucial. Multidisciplinary care involving haematology, neurology, and physiotherapy is essential. Surgical nerve repair or tendon transfer may be considered if conservative management fails, though most patients improve without surgery [22,23]. Prevention includes careful nerve identification, intraoperative nerve monitoring, and limited dissection [5,24]. Postoperative neurological assessment should be routine.

Limitations

This single patient report limits generalisability. Pre biopsy baseline neurological evaluation may have missed subclinical dysfunction. Long term outcomes beyond one year were not recorded. No standardised rehabilitation protocols exist for SAN injury in iMCD.

Conclusion

SAN neurapraxia is a rare but potentially disabling complication of cervical lymph node biopsy in iMCD. Early recognition, nerve conduction studies, imaging, and structured physiotherapy are key to optimising outcomes. Muscle atrophy may persist even after nerve recovery and disease remission, highlighting the need for preventive strategies and long term follow up.

Conflict of Interest Statement

The authors declare no conflicts of interest

Funding

No external funding was received for this study

Ethical Approval

Not required for single patient case reports according to institutional policy.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author Contributions

- Dr. Adnan A Aladraii: Conceptualization, clinical data collection, manuscript drafting, critical revision.
- Lama : Radiology interpretation, imaging figure preparation, manuscript review.
- Muaath: orthopaedic evaluation, electrophysiology interpretation, clinical follow up data.
- Khalil A AlMalki: Case analysis, figure annotation, manuscript editing.
- **All authors:** Approved the final manuscript and agree to be accountable for all aspects of the work.

References

1. Fajgenbaum DC (2020) The diagnosis and management of Castleman disease: a systematic review. Lancet Haematol 7: e435-e445.

2. van Rhee F (2017) International, evidence-based consensus diagnostic criteria for HHV-8-negative/idiopathic multicentric Castleman disease. Blood 129: 1646-1657.

3. Dispenzieri A (2015) Castleman disease. Cancer Treat Res 165: 323-345.

4. Munshi N (2018) An approach to the diagnosis of Castleman disease. Hematol Oncol Clin North Am 32: 37-52.

5. Moore KL, Dalley AF, Agur AMR (2018) Clinically Oriented Anatomy. 8th ed. Wolters Kluwer.

6. Tregaskiss AP (2019) Spinal accessory nerve injury: a narrative review. J Neurol Neurosurg Psychiatry 90: 1036-1044.

7. Fiddian NJ, King RJ (1982) Iatrogenic injury to the spinal accessory nerve. J Bone Joint Surg Br 64: 647-650.

8. Chhetri DK, Berke GS (2002) Accessory nerve injury during neck surgery: a review. Am J Otolaryngol 23: 302-307.

9. Ganel A, Atar D, Engel J (1977) Injury to the spinal accessory nerve: diagnosis and treatment. J Bone Joint Surg Am 59: 1019-1021.

10. Williams AF (1992) Accessory nerve injury following cervical lymph node biopsy. Br J Surg 79: 791-793.

11. Kang JH (2018) Physical therapy in accessory nerve injury. Phys Med Rehabil Clin N Am 29: 111-120.

12. Zani BG (2019) The impact of iatrogenic accessory nerve injury after neck dissection. Ann Otol Rhinol Laryngol 128: 538-544.

13. Sunderland S (1978) Nerves and Nerve Injuries. 2nd ed. Churchill Livingstone.

14. Netter FH (2018) Atlas of Human Anatomy. 7th ed. Elsevier.

15. Chepeha DB (2002) Functional assessment using the Constant score after accessory nerve injury. Head Neck 24: 989-995.

16. Lee SH (2014) Prognosis of iatrogenic accessory nerve injury: a clinical and electrophysiological study. Muscle Nerve 50: 233-237.

17. Lee YS (2013) Long-term outcome of accessory nerve injury after neck dissection. Clin Exp Otorhinolaryngol 6: 89-93.

18. Baek CH (1999) Clinical and electrophysiological evaluations of accessory nerve injury after neck dissection. Am J Surg 178: 491-494.

19. Hems TE (2013) The outcome of shoulder function after spinal accessory nerve injury. J Plast Reconstr Aesthet Surg 66: 939-945.

20. Tashiro Y (2017) Evaluation of muscle atrophy and fatty degeneration with MRI after nerve injury. Muscle Nerve 56: 733-737.

21. Bendszus M, Stoll G (2006) Technology insight: visualizing peripheral nerve injury using MRI. Nat Clin Pract Neurol 2: 442-450.

22. Matsuoka H (2014) Surgical treatment of chronic SAN palsy: functional outcomes. J Plast Reconstr Aesthet Surg 67: 825-831.

23. Parry CB (1978) Surgical repair of the spinal accessory nerve. J Bone Joint Surg Br 60: 101-104.

24. Chiofalo MG (2018) The role of intraoperative nerve monitoring in reducing accessory nerve injury. Head Neck 40: 1011-1017