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Case Report

Double trouble-unveiling the hidden pain: bilateral paediatric parsonage-turner syndrome: an unprecedented encounter

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ABSTRACT

Parsonage-turner syndrome (PTS), also known as idiopathic brachial neuritis, is a rare disorder characterized by sudden-onset severe shoulder pain followed by weakness and atrophy of the shoulder and arm muscles. This case report presents the clinical scenario of an 11-year-old girl diagnosed with PTS, highlighting the unique challenges and considerations in the paediatric population. In our case, a 11-year-old girl presented with sudden-onset severe bilateral shoulder pain, followed by weakness and atrophy of the shoulder and upper arm muscles. The clinical examination revealed muscle wasting and limited range of motion. The diagnosis of PTS was confirmed through MRI and electromyography (EMG) showing denervation in the affected shoulder muscles. Patient was managed with symptomatic supportive treatment in the form of analgesics and physical therapy. Patient is on the road to recovery and on regular follow up. We concluded that prompt recognition and appropriate management of PTS are crucial to optimize outcomes and prevent long-term disability, particularly in the paediatric population.

Keywords: PTS, Idiopathic brachial neuritis, Paediatric, Shoulder pain

INTRODUCTION

Parsonage-turner syndrome (PTS), also known as idiopathic brachial neuritis/neuralgic amyotrophy, is a rare disorder characterized by sudden-onset severe shoulder pain followed by weakness and atrophy of the shoulder and arm muscles. While the condition most commonly affects adults, it can also occur in children, although paediatric cases are relatively uncommon.[1,2] This case report describes an 11-year-old girl presenting with PTS and emphasizes the importance of early recognition and appropriate management in the paediatric population.

CASE REPORT

History of presenting illness

An 11-year-old girl presented to the paediatric orthopaedic clinic with a two-day history of severe bilateral shoulder pain. The pain started abruptly without any preceding trauma or infection. She described it as a sharp, burning pain that limited her shoulder movement. The pain gradually subsided over the next few days but was followed by the weakness as well as the noticeable atrophy of the right shoulder and upper arm muscles. She denied any sensory changes or the constitutional symptoms.

Clinical examination

Physical examination of the bilateral upper limb revealed significant muscle wasting involving the deltoid, supraspinatus, and infraspinatus muscles. Active range of the motion of the right shoulder was limited in all directions due to pain and weakness. Sensation, reflexes, and strength in the rest of the upper limb were intact and suggesting that the nerve involvement was primarily motor in the nature.

Imaging and investigations

Electromyography (EMG) was performed to confirm the diagnosis of PTS. The EMG findings demonstrated evidence of denervation in the bilateral deltoid, supraspinatus and infraspinatus muscle groups, indicating peripheral nerve damage. This supported the diagnosis of PTS and ruled out other neuromuscular conditions that could present with similar symptoms.[3]

In addition to EMG, an MRI scan of the bilateral shoulder was done which showed-diffuse thickening with abnormal signals involving the trunks, cords and divisions of bilateral brachial plexus (Right>left) along with muscle atrophy and fatty infiltration in the muscle planes. This further supported the diagnosis of PTS.[4]

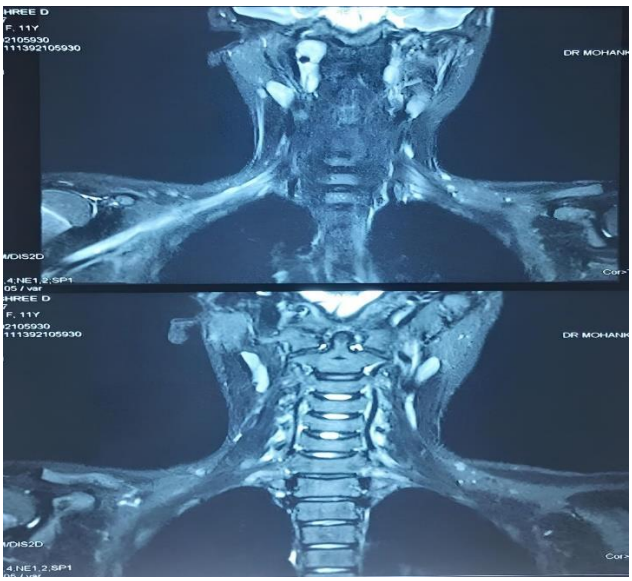

Figure 1: MRI bilateral shoulders.

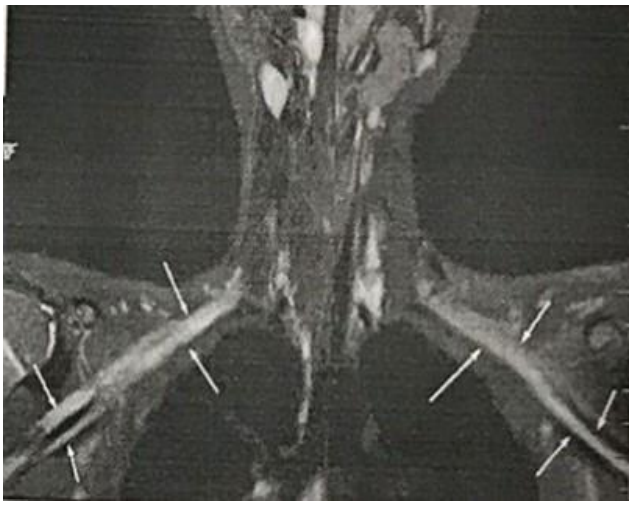

Figure 2: MRI bilateral shoulders.

MRI images in Figure 1 and 2 reveal the following features: Diffuse thickening with abnormal signals involving the trunks, cords and divisions of bilateral brachial plexus (Right>left)-suggestive of neuritis / non compressive neuropathy. The roots of brachial plexus show normal intensity. No evidence of pseudo-meningocoele formation. Normal signal intensities seen within cervical cord. No evidence of any mass or hematoma adjoining the brachial plexus.

DISCUSSION

PTS is a rare neurological disorder characterized by the sudden onset of severe shoulder pain followed by muscle weakness and atrophy. The exact etiology of PTS remains unclear, but it is believed to involve an immune-mediated inflammatory response leading to nerve damage.[5] This immune-mediated mechanism suggests a potential role for genetic and environmental factors in the development of the syndrome.[2]

While PTS is more commonly observed in adults, it can also affect children, although paediatric cases are relatively uncommon.[1] The case presented here highlights the importance of considering PTS in the differential diagnosis of shoulder pain and weakness, even in paediatric patients. The abrupt onset of severe shoulder pain in the absence of preceding trauma or infection is a key characteristic of the syndrome.[6]

The diagnosis of PTS is primarily clinical, based on characteristic symptoms and physical examination findings. In the presented case, the 11-year-old girl displayed significant muscle wasting involving the deltoid, supraspinatus, and infraspinatus muscles, along with limited range of motion and weakness. These findings are consistent with the typical presentation of PTS.[2]

To exclude other potential causes of shoulder pain and weakness, laboratory investigations were performed, including complete blood count, inflammatory markers, and autoimmune screening, all of which returned within normal limits. These investigations help rule out other possible etiologies and contribute to the diagnostic process.[2]

Electromyography (EMG) plays a crucial role in confirming the diagnosis of PTS. In the presented case, EMG revealed evidence of denervation in the affected shoulder muscles, supporting the diagnosis. This finding indicates peripheral nerve damage and is a hallmark of the syndrome.[3] MRI of bilateral shoulders had revealed-diffuse thickening with abnormal signals of the plexus, further confirming the diagnosis.

Overall, the clinical examination findings, along with the EMG results, were consistent with PTS. The presence of severe shoulder pain, followed by muscle weakness, atrophy, and denervation in the affected muscles, supported the diagnosis. These findings aligned with the characteristic clinical and electro-diagnostic features of PTS in paediatric patients.[1,2]

Management of PTS is primarily supportive and aimed at alleviating pain, promoting functional recovery, and preventing long-term disability. Conservative measures, such as analgesics for pain relief and physical therapy to improve shoulder range of motion and muscle strength, were employed in the management of the 11-year-old girl in this case.[6] Patient is on the road to recovery and on regular follow up.

Regular follow-up visits were scheduled to monitor the progression of muscle recovery and assess functional outcomes. Long-term prognosis for PTS is generally favourable, with most patients experiencing spontaneous recovery over a period of months to years.[2] However, in some cases, residual weakness and functional impairment may persist.

CONCLUSION

Prompt recognition and appropriate management of PTS are crucial to optimize outcomes and prevent long-term disability. This case report underscores the importance of considering PTS in the differential diagnosis of shoulder pain and weakness, even in paediatric patients. Early diagnosis and management, including analgesics and physical therapy, are essential for achieving favourable functional outcomes. Further research is warranted to better understand the pathophysiology and identify more targeted interventions for this rare neurological disorder.

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REFERENCES

1. Babu E, Basu S. Brachial neuritis (Parsonage-Turner syndrome) in children: A report of three cases and review of the literature. J Pediatr Neurosci. 2018;13(2):234-6.
2. Dumitru D. Parsonage-Turner syndrome. In: Dumitru D, Amato AA, Zwarts MJ, eds. Electrodiagnostic Medicine. 3rd ed. Hanley &Belfus; 2019:759-62.
3. Sheehan FT, Jacobs CA, Sacks AD. Parsonage-Turner syndrome in pediatric orthopaedics: A systematic review of the literature. J PediatrOrthop. 2019;39(6):311-6.
4. Wong JH, Pun WK. Parsonage-Turner syndrome in a pediatric patient: A case report. J Pediatr Orthop B. 2019;28(4):375-7.
5. Kissel JT. Parsonage-Turner syndrome. Semin Neurol. 1992;12(4):328-32.
6. Sheehan FT, Port A, Harner CD. Parsonage-Turner syndrome (brachial neuritis): A case report. Orthopedics. 2019;42(6):e566-69.

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