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Case Report: 14 Years-Old Boy with Paraplegia and Aneurysmal Bone Cysts f Neck Who Responded to Anti-Tuberculosis Treatment

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ABSTRACT

This article discusses a rare case of Aneurysmal Bone Cyst (ABC) affecting the cervical spine, presenting with neck pain and progressive weakness in all extremities. A 14-year-old boy experienced these symptoms for three years without any history of trauma. Physical examination revealed weakness and tenderness in the cervical vertebrae. MRI showed cervical compression, paravertebral abscess, spinal nerve swelling, and canal stenosis, suggestive of tuberculosis spondylitis. The surgical intervention involved laminectomy and tumor debulking, confirming the diagnosis of a aneurysmal bone cyst. Despite initial motor deficits, anti-tuberculosis treatment significantly improves motor function and neck mobility over several weeks. This case underscores the rarity of cervical spine involvement in aneurysmal bone cyst and highlights the importance of prompt diagnosis and treatment to prevent neurological complications and achieve favorable outcomes. The study emphasizes considering aneurysmal bone cyst as a potential differential diagnosis for lytic lesions involving the spine in young patients, emphasizing the need for vigilance in clinical practice.

KEYWORDS: aneurysmal bone cyst, cervical vertebrae, tuberculosis spondylitis, weakness, anti-tuberculosis

ARTICLE DETAILS

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INTRODUCTION

Aneurysmal bone cyst were initially described as a clinicopathological disorder by Jaffe and Lichtenstein[1] in 1942. Although these lesions are generally considered non-neoplastic, these tumors are expansive, consisting of thin-walled, blood-filled cystic cavities, and are often found in pediatric populations. The incidence of bone aneurysm cysts is approximately 1.4% of all bone cancers and 15% of all primary spinal cancers.[2,3] Although these cysts can involve any bone on the body, bone aneurysm cysts most commonly affect the pelvic flat bones and long bone metaphysis. About 10 to 30% of cases involve the spine, most often in the thoracic and lumbar regions.[1,4,5,6] The etiology of this condition is unknown and is still debated. In the spine, these lesions can complicate diagnosis and treatment and often lead to neurological abnormalities.

METHODS

A 14-year-old boy had presented with complaints of neck pain for the past three years and experienced progressive swelling and weakness in all extremities. Notably, there was no history of trauma to the affected area. Physical examination showed weakness of the entire extremities (motoric examination 3/3/3/3 with good sensory response), accompanied by tenderness in the spinous processes of vertebrae C4-7. There was no limited movement of the neck. MRI of the cervix with contrast showed a paravertebral abscess above the right side of the C4-7 level, extending into

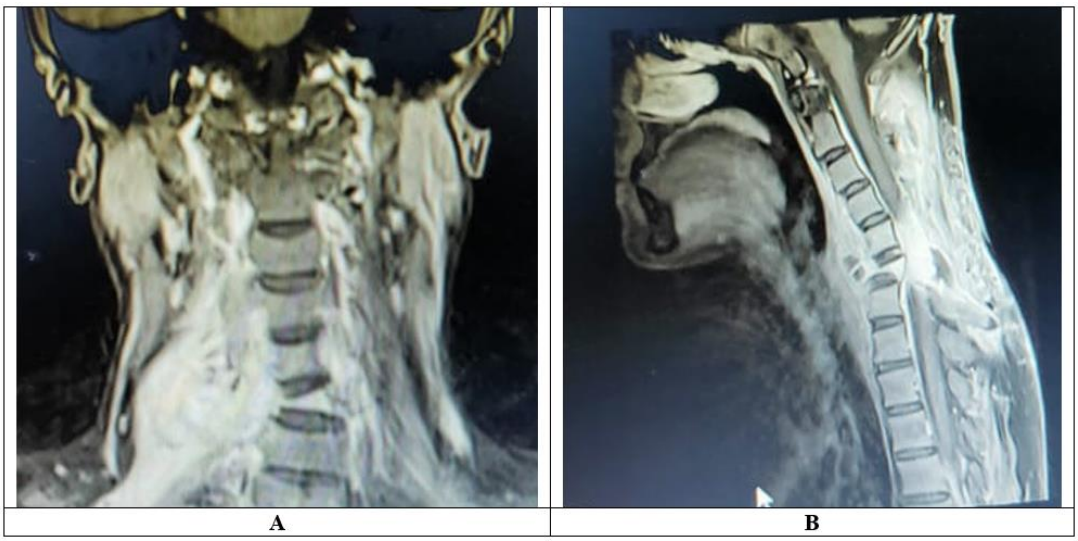

Figure 1: MRI of the cervix with contrast showed 3rd-degree compression above the C6 level and paravertebral abscess above the right side of the C4-7 level, extending into the epidural space along with canal stenosis and spinal nerve swelling; A Coronal View, B Sagital View

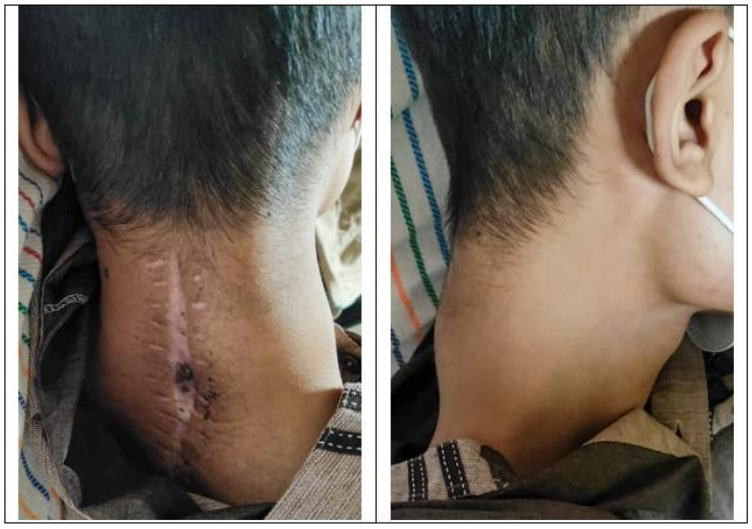

Figure 2: Postoperative wounds dry and lumps disappear

The epidural space along with canal stenosis and spinal nerve swelling, as shown in Figure 1. There was also 3rd-degree compression above the C6 level. This radiological examination provides an image of tuberculosis spondylitis. During the surgical procedure, severe bleeding occurred while trying to separate the muscle above the tumor capsule. Laminectomy with removal of all abnormal tissue was performed above the C4 level to obtain adequate decompression. Debulking of the tumor left the tumor encased on the laterally right side of the C5. The spinous process and lamina of the C5 vertebrae were found to be enlarged, supple, and filled with a reddish material resembling vascular granulation tissue. A biopsy revealed the tumor's wall made of fibrous and woven bone, with giant cell-like osteoclasts with multiple nucleates resembling bone cysts aneurysms. The surgical wound shows signs of satisfactory healing after the surgery as shown in Figure 2. There were motor deficits of all extremities (motoric examination 1/1/1/1 with good sensory response), neck stiffness, and inability to turn head to the right and left. This condition had worsened for two weeks before the anti-tuberculosis drugs were given to the patient. After several weeks of anti-tuberculosis treatment (approximately three months), motor deficits improve (motoric examination 4/4/4/4 with good sensory response), and the neck can turn to the right and left. The patient can now move the entire extremity and walk independently.

RESULTS

The authors report a rare case whereby the sites of tumors in the cervical spine and posterior arch involvement were accompanied by weakness of all extremities, and these cases responded favorably to the administration of anti-tuberculosis drugs.

CONCLUSIONS

Aneurysmal bone cyst of the cervical spine are rare. Although the most common symptom is pain, most cases are asymptomatic, especially for lesions involving the posterior arch. These lesions can extend to the spinal canal, resulting in pathological fractures and neurological deficits due to progressive growth. Hence, timely and effective detection is

imperative to mitigate the risk of unfavorable outcomes. Aneurysmal Bone Cyst (ABC) should be used as a differential diagnosis of lytic lesions extending to the spine in young patients.

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