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Successful Management of Spondylodescitis in a three Years Old Girl: A Case Report

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Abstract- **Spondylodescitisis considered one of the rare diseases that cause back pain. The disease pathology is not yet been clearly known, however, in most patients the disease thought to be spreading hematogenously from a previously existing site of infection. We report two years and 11months old child, previously healthy girl, presented to the emergency department with twoweeks' history of weakness of the lower extremities and lumbar back pain with slightly arched back. She had a complete recovery with early intervention and complete course of antibiotics.**

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I. Introduction

Spondylodiscitis (SD), is infectious process of the spine involving vertebral bodies and intervertebral discs. It remains a rare condition with an estimated incidence of around one to two cases in 30000.[2] this case report describes spondylodescitis in tow years old girl who presented with acute back pain, irritability and inability to walk. SD although it's rare disease, it should be kept as one of the deferential diagnosis in children present with non-traumatic back pain. *Staphylococcus aureus* is the causative agent of SD accounting for 80% of the cases. [2,7,14,15,16,17,18] Treatment of SD is usually a combination of both pharmacological and non-pharmacological.

II. Case Presentation

A two years and 11 months old toddler, previously healthy girl, presented to the emergency department in a tertiary center in Muscat, Oman in 2019, with a two weeks' history of weakness of the lower extremities with back pain and slightly arched back. There was no history of trauma, unexplained weight loss, or any other systemic manifestation. There was no history of fever, joint pain or skeletal deformity, skin rash, seizure, or photophobia. She was not known to have any chronic diseases. She was up to date with her vaccinations. Her parents reported no exposure to individuals with similar symptoms. In addition, none of her family members and neighbors had recently suffered from chronic cough or unexplained weight loss. There was no history of previous admission.

On admission, she was irritable, her vital signs were within normal ranges. Her physical examination revealed normal gait with slight hyperextension of lower back. In addition, she was bearing weight with support due to pain and there was slight pain in lower back while flexion and extension of the back. Otherwise, no muscle wasting, full range of movement of all joints actively and passively, with normal tone, power and reflexes. A blood investigations revealed complete blood count: Hemoglobin of 9.2 g/dl, increase in platelet count of 736 * 10^9 /L, normal white cell counts and slight increased level of acute phase reactants C-reactive protein(CRP)of 11.1 mg/L and erythrocyte sedimentation rate of 42mm/hour. Pelvic X-RAY was done and was reported as normal and Ultrasound hip showed no fluid in hip joint. She was started on non-steroidal anti-inflammatory medications and on vancomycin and ceftriaxone but the next day vancomycin was switched to flucloxacillin and child showed clinical improvement. Lumbar puncture was done as she was inactive and it showed normal microscopy, count, protein and glucose, with negative CSF and blood culture. On day five of admission, MRI done which showed bone marrow changes of L4 and L5 vertebrae associated with endplates irregularities and mild destruction, with loss of intervertebral space and indentation of thecal sac suggestive of spodilodescitis due to pyogenic or granulomatous infection. Child was tested for Q fever, tuberculosis and brucellosis in which all test were negative. Child was treated with ceftriaxone and flucloxacillin for two weeks as she was responding to the treatment and finally discharged on oral cefdinir for four weeks after consultation with infectious disease doctor. On subsequent follow up as outpatient she showed marked improvement and she started to regain her full movement of lower limbs.

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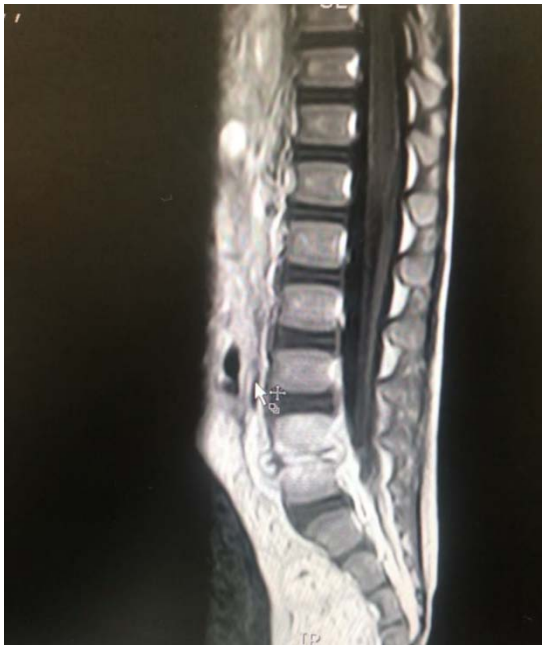

Figure 1: MRI of the patient reported in the case show, Bone marrow changes of L4 and L5 vertebrae associated with endplates irregularities and mild destruction, loss of intervertebral space and indentation of the thecal sac suggestine of spondylodescitis due to pyogenic or granulomatous infection.

III. Discussion

We report almost three years old girl with two weeks' history of lower back pain and lower limb weakness in whom MRI spine showed destructive changes of L4 and L5 with high ESR of 42 mm/hour and all other tests were not significant. When lumbar pain is accompanied by significant irritability, (as was evident in our case), this should lead pediatrician to include infectious discitis among the differential diagnosis. Kang et al[1] reported that approximately 60% of discitis and SD cases were diagnosed in children <3 years old showed that irritability was the most common among all other symptoms at the time of disease presentation. Discitis and SD are infectious processes of the spine involving vertebral bodies and intervertebral discs. It remains a rare condition with an estimated incidence of around one to two cases in 30,000 [2]. In our case, there was no delay in establishing the correct diagnosis where it has been established in the fifth day of admission. Delays of diagnosis for four to six months have been reported [2,3,4]. These delays are attributed to the often non-specific clinical presentation of children with discitis or SD and their inability to describe the site of discomfort [2,5,6]. This delay can lead to an increase risk of permanent abnormalities [7]. Its pathophysiology has not yet been clearly established, but in most patient, pathogens reach the spine hematogenously, starting from a previously existing site of infection [2,7]. A prodrome with a distant focus of infection has been identified in most cases. Mylona et al[8], described these to include the genitourinary tract 17%, skin and soft tissue 11%, intravascular devices 5%, gastrointestinal tract 5%, respiratory tract 2% and the oral cavity 2%. A wide range of pathogens can cause this disease and many studies showed it is primarily monomicrobial bacterial infection. Many attempts to identify the causative pathogen of Discitis and SD of children through blood and/or vertebral aspiration cultures have failed to identify the organisms; causing related problems in selecting the most appropriate antibiotic therapy [9,10,11,12,13]. When positive, pyogenic bacteria are usually detected, with *Staphylococcus aureus* being the cause of discitis and SD in approximately 80% of the cases that occur in first months of life and in most of those that develop in older children [2,7,14,15,16,17,18]. The most specific imaging method to diagnose discitis is MRI[19]. Intravenous antibiotic treatment, analgesia and physical rehabilitation treatment showed complete recovery in most cases. Treatment include pharmacological like antibiotics and non-pharmacological such as physiotherapy and bed rest[20]. Mortality has dropped from 25-26% [21,22] to less than 5% [23] with antibiotics treatment.

IV. Conclusion

SD is a rare disease which represents an important disease in children and should be kept as deferential diagnosis in patients presented with back pain. High suspicion of the disease result in early treatment which reduce the risk of bone lesions requiring surgical interventions or the development of a permanent alteration of spine mobility. Clinical presentation varies according to age, however as in our case back pain, irritability, and walking difficulties are common signs and symptoms of the disease. MRI is a best modality to confirm the diagnoses of the disease. Antibiotics are the drugs of choice, taking into account covering *S. aureus* and Gram-negative organisms. Discontinuation of antibiotic depends on resolution of symptoms and the normalization of ESR or CRP.

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