

Coxo Vertebral Syndrome Causes and Statistics

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Abstract: Vertebra plana is an affliction of childhood: it usually appears between 6 and 12 years of age. The most frequent clinical symptoms are thoracolumbar pain, short-segment kyphosis and loss of interest in playing. Radiologically, the flattening of the anterior part of the vertebral body is seen. For long, the affliction (described by Calvé as “osteochondritis”) was considered a form of aseptic, avascular bone necrosis, involving a single vertebral body. In 1954, Compere argued that Calvé’s theory was not correct and the affliction was caused instead by eosinophilic granuloma [3]. Many other publications and a large number of cases presented later supported his views [5–8].

Keywords: cox arthrosis, morbidity, causes, statistics.

However, the case presented here is to prove that osteochondritis is a possible, even if possibly rare, cause of vertebra plana. Spinal disorders include a wide and heterogeneous spectrum of diseases that affect the vertebrae, intervertebral discs, facet joints, tendons, ligaments, muscles, spinal cord, and nerve roots of the spine.¹ Spinal disorders are classified based on etiology (namely, specific and non-specific spinal disorders) or according to the time course of the symptoms (namely, acute, subacute, or chronic).¹ Specific spinal disorders have clear etiologies and can be diagnosed based on specific structural pathologies and clinical pictures (10-15%), whereas non-specific spinal disorders are primarily pain syndromes and are difficult to relate to pathomorphological sources. Most spinal disorders (ranging from 85-90%) are classified as non-specific.¹ Spinal disorders can include, but are not limited to pain syndromes, disc degeneration, spondylosis, radiculopathy, stenosis, spondylolisthesis, fractures, tumors, and osteoporosis. Spinal disorders have enormous economic and psychosocial effects. For example, low back pain (LBP) is a common spinal disorder and is the most common cause of disability in the population of the USA younger than 45 years old, the second most common reason for visits to a physician, the fifth most common cause of hospital admission, and the third most frequent cause of surgery.² Despite this fact, research investigating the epidemiology of these disorders is in its early stages relative to other disorders such as cancer and cardiovascular disorders.³ Physical therapy is a “healthcare profession that assesses, diagnoses, treats, and works to prevent disease and disability through physical means.”⁴ “Physical therapists, doctors, and other health professionals often work as part of a team that plans and tailors treatment for a specific condition.”⁴ Physical therapists address patients with numerous diagnoses, including those affecting the spine. In Australia and the USA, physical therapists are the first-contact practitioner, which means that a physician’s referral is not required for a patient to be treated by a physical therapist. In contrast, in Saudi Arabia, patients seeking physical therapy care need to be referred by a physician. Literature review revealed a lack of studies on the prevalence of the diagnoses and characteristics of patients with spinal conditions who are referred to physical therapy clinics in Saudi Arabia or even worldwide. Identifying the prevalence of spinal disorders can help guide resource allocation and subsequently improve the quality of care. Therefore, the

current study aimed to 1) establish the period prevalence of spinal disorders that lead to referrals to the physical therapy clinic of a university hospital in Saudi Arabia, and 2) determine whether the patients' ages and genders play roles in the prevalence of the common spinal disorders.

As noted, neck, and LBP were the most common disorders of the cervical and lumbar spines. In a population-based study of 34,902 adult Danish twins, Leboeuf-Yde et al⁶ found that LBP was the most common followed by the neck pain and then thoracic pain. The 3-month prevalence of back, or neck pain was 31% in a population-based survey of US adults >18 years.⁷ Elfering and Mannion¹ reported that neck pain and LBP were the most common symptoms among non-specific spinal disorders. Work-related disability from non-specific spinal disorders is epidemic, and although only a minority of the patients are chronically disabled, these patients are responsible for most of the care costs.¹ The lifetime prevalence of LBP was reported to be 75-85%, the 12-month prevalence was 15-45%, the 12-month incidence was as high as 20%, and the yearly recurrence rate was reported to be as high as 60%.¹ A recent systematic review of the global prevalence of LBP found that the point prevalence was 11.9% and the one-month prevalence was 23.2%.⁸ In a systematic review of 56 epidemiological studies of a world population, Fejer et al⁹ found that neck pain was common with a mean point (namely, at any given time) prevalence of 7.6%, a mean one-week prevalence of 12.5%, a mean one-month prevalence of 23.3%, a mean 6-month prevalence of 29.8%, a mean one-year prevalence of 37.2%, and a mean lifetime prevalence of 48.5%.⁹ Cervical spondylosis occurred in 13.1% of 47,560 patients who were included in a study from USA between 2006 and 2011.¹⁰ They observed a prevalence of cervical spondylosis in 31% patients with thoracolumbar spinal deformities. The present study revealed that neck pain (60.5%) was more common among patients <30 years than in older patients. A systematic review¹¹ identified studies of idiopathic adolescent spinal pain and found that spinal pain was the most commonly reported measure with a lifetime prevalence that ranged from 4.7-74.4%. The lifetime prevalence of LBP in adolescents ranges from 7-72%.¹¹ A national prevalence study from the USA, found that LBP, neck pain, and LBP and neck pain were more common in women and among older age groups.⁷ Neck pain and LBP exhibited a mild peak near middle age.⁶ Our study found that LBP was more prevalent in female patients than in male patients. This finding supports the findings of the systematic review of the global prevalence of LBP conducted by Hoy et al⁸ and the findings of a Danish study by Leboeuf-Yde et al.⁶ The current study also found that lumbar spondylosis was more prevalent in women than in men. A Japanese cohort study¹² that included 2288 participants aged >60 years found that the prevalences of radiographic spondylosis with Kellgren/Lawrence (KL) grade >2 at the severest intervertebral level was 75.8% and grade >3 was 50.4%. This prevalence was 28.8% in patients with LBP. Interestingly, KL >2 spondylosis was more prevalent in men, whereas KL >3 spondylosis and LBP were more prevalent in women. Although KL 2 spondylosis was not significantly more strongly associated with LBP than KL 0 or KL 1 spondylosis, KL >3 spondylosis was related to pain only in the female patients.¹²

Spinal disorders that lead to referrals to physical therapy, particularly disorders affecting the lumbar and cervical spines, are common. This information might help practitioners and decision-makers to direct their resources to provide special care for patients with these disorders to improve the quality of care and lower costs. Several methods might achieve such improvements. Paskowski et al¹³ implemented a multidisciplinary spine care pathway that utilizes an evidence-based standardized process and observed improvements in the clinical outcomes and reductions in costs associated with diagnosis and treatment. Personalized and coordinated multidisciplinary care target the biopsychosocial aspects of improving health care and reduce costs.¹⁴ A recent systematic review¹⁵ concluded that physical therapy via direct access improved patient outcomes and decreased costs compared with referral-based physical therapy.

Study limitations

The limitation of our study was that the computer data lacked some important demographic data, such as patients' weights and heights, smoking histories, marital statuses, and occupations.

Research has shown that these demographic features are associated with spinal disorders, particularly LBP and neck pain.¹⁶ The referring physicians used different terms for the same disorders; 'backache' and 'lumbago' or 'radiculopathy' and 'radicular syndrome.' Therefore, we re-coded such similar term into unified terms that might influenced the results as this re-coding was subjective.

The current study established evidence on the prevalence of spinal disorders and their relationships with age and gender in patients who were referred to a physical therapy clinic. Approximately 28% of patients had spinal disorders. More than half of these disorders affected the lumbar spine and more than a quarter affected the cervical spine. Low back pain was the most common disorder that affected the lumbar spine, whereas pain, spondylosis, and disc disorders were the most common disorders that affected the cervical spine. Weak relationships of age and gender with some of these disorders were found. Studies from other institutions and other nations will enhance our knowledge in this area of research. Additionally, further research might investigate the mechanisms of the risk factors and preventive outcome measures for common spinal disorders.

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