Lumbar juxtafacet cyst

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General information

The term juxtafacet cyst (JFC) was originated by Kao et al [1] in 1974 and includes both synovial cysts (those having a synovial lining membrane) and ganglion cysts (those lacking synovial lining) adjacent to a spinal facet joint or arising from the ligamentum flavum. The distinction between these two may be difficult without histology and is clinically unimportant [2].

JFC occur primarily in the lumbar spine (although cysts in the cervical [3] [4] [5] and thoracic [6] spine has been described).

History

They were first reported in 1880 by von Gruker during an autopsy, [7] [8]. and were first diagnosed clinically in 1968. Kao et al. later confirmed this in 1974 [9].

Epidemiology

They are relatively rare, only 3 cases were identified in a series of 1500 spinal CT exams [10] but the frequency of diagnosis may be on the rise due to the widespread use of MRI and an increasing awareness of the condition.

Eyster et al. reviewed approx. 1,800 MRIs and CTs over one and half year and found 11 (0.6% of) cases of lumbar synovial cysts of the spine [11]. However Doyle et al., [12] found a prevalence of 2.3% anterior and 7.3% posterior spinal cyst in a review of 303 retrospective analyses of MRIs. Similarly Lemish et al. [13] identified 10 cysts in 2,000 reviews of CT lumbar spines.

The average age was 63 years in Sabo et al. series [14] and 58 years in a review of 54 cases in the literature [15].

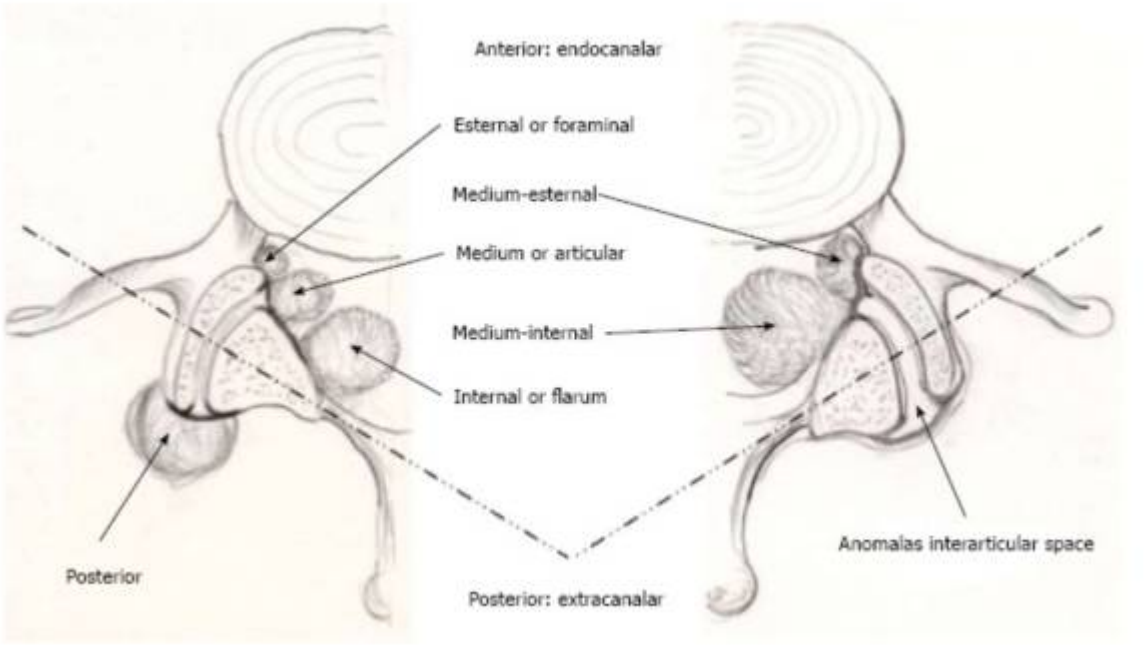
Most of the patients with lumbar cysts tend to be in their sixth decade of life with a range that is varied from as early as 28 years to as late as 94 years [16]. A female bias has been reported often [17] , but others refute that.

They are extremely rare in adolescence and young adulthood, only two pediatric cases have been reported in the literature, but they could be considered in the differential diagnosis in adolescent patients with low back pain and radiculopathy. Surgical removal of LSC could be considered as a treatment option to provide immediate and safe symptomatic relief [18].

They may be bilateral.

It is typically a process that only happens in the lumbar spine, and it almost always develops at the L4-L5 level [19) 20)] (rarely at L3-L4).

Classification



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Etiology

The etiology is unknown (possibilities include: synovial fluid extrusion from the joint capsule, latent growth of a developmental rest, myxoid degeneration and cyst formation in collagenous connective tissue…), increased motion seems to have a role in many cysts, and the role of trauma in the pathogenesis is debated [21) 22)] but probably plays a role in a small number (≈ 14%) [23)].

Most occur in patients with severe spondylosis and facet joint degeneration [24)] 25 % had degenerative spondylolisthesis [25)]

Unknown, increased motion seems to have a role in many cysts and the role of trauma in the pathogenesis is debated [26) 27)] but probably plays a role in a small number (= 14 %) [28)].

There has been a general understanding that Cystic Formations of the Mobile Spine (CYFMOS) are associated with degenerative spine changes. More recent articles however have suggested that identifying detailed imaging characteristics can assist in determining outcomes when CYFMOS are

treated with interventional percutaneous methods or surgical decompression with or without concomitant fusion. CYFMOS although uncommon are not a rare finding seen in the spine when there is a background of degenerative spine changes. These cystic lesions are generally symptomatic by exhibiting mass effect on adjacent structure. Most treatments are aimed at decompression by interventional percutaneous or surgical means. Various imaging characteristics of these CYFMOS including their signal intensity, presence of spinal instability, particular patterns of adjacent degenerative changes, and imaging changes following interventional treatments can help guide physicians when managing these cases [29)].

Pathology

see Juxtafacet cyst pathology

Clinical Features

Lumbar juxtafacet cyst clinical.

Diagnosis

Lumbar juxtafacet cyst diagnosis.

Differential diagnosis

Lumbar juxtafacet cyst differential diagnosis.

Treatment

Lumbar juxtafacet cyst treatment.

Systematic Review and Meta-Analysis

Giordan et al. performed a meta-analysis to assess the overall rates of favorable outcomes and adverse events for each available treatment and determine the outcome and complication rates concerning spine stability.

Multiple databases were searched for English-language studies involving adult patients with lumbar JFCs who had been followed for more than 6 months. Outcomes included the proportion of patients with a satisfactory outcome. Adverse events included recurrence and revision rates as well as intraoperative complications. They further stratified the analysis based on the spine's condition (lumbar degenerative spondylolisthesis vs without degenerative listhesis).

A total of 43 studies, including 2226 patients, were identified. Over 80% of patients experienced satisfactory improvement after surgical excision but only 66.2% after percutaneous cyst rupture and aspiration. Overall, recurrence and revision rates were almost double in patients with preoperative degenerative listhesis at the cyst level, especially in the minimally invasive group (2.1% vs 31.3% and 6.8% vs 13.1%, respectively). The rate of full-endoscopic satisfactory outcomes was approximately 90%, with low rates of adverse events (<2%).

They analyzed the outcome and adverse event rates for each kind of available treatment for JFC. Full endoscopy has outcomes and rates of adverse events that overlap with open and minimally invasive approaches [30)]

Case series

Lumbar juxtafacet cyst case series.

Case reports

Lumbar juxtafacet cyst case reports.

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