Sacralization of the Fifth Lumbar Vertebra

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Sacroiliac articulation at the sacrum.

**Abstract**

Sacroiliac articulation at the sacrum.

**Bertolotti’s Syndrome**

Bertolotti’s syndrome is a type of LSTV in which the fifth lumbar vertebra articulates with or fuses to the first sacral element (Malham et al., 2013). This condition is associated with pseudo-arthritis causing pain and often limiting motion (Malham et al., 2013). Bertolotti’s syndrome was first describe in 1917. There is some controversy surrounding Bertolotti’s syndrome, some studies have shown that this spinal anomaly is not associated with lower back pain and others show that Bertolotti’s syndrome may be a factor in some individuals. (Konin & Waiz, 2010). The pain associated with Bertolotti’s syndrome may caused not only by pseudo-arthritis but also by pressure on the nerve(s), ligament strain, and compression of the soft tissue due to the point of sacralization (Shiksha, 2015).

**LumboSacral Transitional Vertebra**

LumboSacral transitional vertebra are common and may occur in as much as 30% of the population (Alonzo, 2018). This pathology could result in lower back pain in individuals especially when it occurs unilaterally. This pathology is often associated with mutation in the HOX10/HOX11 genes and often runs in families (Jancuska et al, 2015). This congenital pathology is associated more with males than in females (Alonzo, 2018). There are four stages of LSTV:

- **Stage I** is characterized by elongation of the transverse process. 
- **Stage II** is characterized by a diarthrodial joint where the transverse process articulates with the sacrum but they are not fused.
- **Stage III** is when fusion occurs between the transverse process and the sacrum.
- **Stage IV** occurs when one side is stage II and the other is stage III (Castellvi et al, 1984; Jancuska et al, 2015).

There has been controversy about whether stage I actually constitutes sacralisation or if the vertebra needs to articulate with the sacrum (Bustos, 1926). Bilateral stage III has often been associated with indigenous peoples from South America (Bustos, 1926).

**Conclusion**

Bertolotti’s syndrome is a painful condition caused by and lumbar sacral transitional vertebra. This condition has varying degrees and can be generally classified into four categories. FSD 19-232 presented with a unilateral stage II sacralization. This indicates that the individual maybe suffering from Bertolotti syndrome. This individual had pathologies consistent with osteoarthritis. These signs were more obvious in the spine and on the right side of the axial skeleton. Along with the signs of osteoarthritis, it is likely that this individual may have had movement limitation because of this pathology. This suggest that there was likely pain associated with the sacralization of this individuals fifth lumbar vertebra.

**References**


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**Works Cited**


