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INCOMPLETE SACRALIZATION OF COCCYX WITH INVERTED 'U' SHAPED SACRAL HIATUS

Anatomy

Dr. Keshaw Kumar Department of Anatomy, K.M. Medical College And Hospital, Mathura (U.P.), India.

ABSTRACT

While observing anatomic variations in sacrum it was found that only in one out of 150 sacra only body and cornua of first coccygeal vertebra were fused with the body and cornua of fifth sacral vertebra completely and due to incomplete fusion of transverse processes of fifth sacral vortebra with the transverse processes of first coccygeal vertebra the formation of firth sacral foramen was incomplete. On dorsal surface of this sacrum inverted 'U' shaped sacral hiatus was present the base of which was situated at the level of fifth sacral vertebra and apex of which reached up to the level of third sacral vertebra.

KEYWORDS

Sacrum, Sacral Hiatus, Coccyx, Sacralization, Sacral Foramen.

INTRODUCTION

Vinod Kumar et.al. (1992)[1] performed morphometrical study of sacral hiatus. Nagar, S.K. (2004)[2] carried out study of sacral hiatus in dry human sacra. Nagar, S.K. et.al. (2013)[3] studied sacrum with five pairs of sacral foramina in western India. Vanju, V.V. Lakshami and Ganesh, T. Waghmode (2013)[4] reported sacralization of coccygeal vertebra, Shinde, V.K. and Sharbagdi, S.A. (2016)[5] noticed variations in levels of sacral hiatus. Incomplete sacralization of coccyx with inverted 'U' shaped sacral hiatus reaching upto the level of third sacral vertebra was not available in the literature as yet therefore present study was conducted in dry sacra of Prayagraj (Allahabad) district in Uttar Pradesh to observe anatomic variation in sacral hiatus as well as sacralization of coccyx.

MATERIAL AND METHODS

150 dry human sacra obtained from department of Anatomy, Moti Lal Nehru Medical College, Prayagraj (Allahabad) were examined to observe anatomic variations in sacral hiatus as well as sacralization of coccyx if any.

OBSERVATIONS

Only in one out of 150 dry sacra observed it was found that only body and cornua of first coccygeal vertebra were fused with the body and cornua of fifth sacral vertebra completely and due to incomplete fusion of transverse processes of fifth sacral vortebra with the transverse processes of first coccygeal vertebra the formation of firth sacral foramen was incomplete. On dorsal surface of this sacrum inverted 'U' shaped sacral hiatus was present the base of which was situated at the level of fifth sacral vertebra and apex of which reached up to the level of third sacral vertebra. **[Fig. 1]**

Fig.-1 : (Dorsal surface of sacrum showing inverted 'U' shaped sacral hiatus with incomplete formation of fifth sacral foramen).

DISCUSSION

Inverted 'U' shape of sacral hiatus observed in present study resembled with inverted 'U' shaped sacral hiatus reported by Nagar, S.K. (2004)[2] in 41.5% cases and by Vinod Kumar et.al. (1992)[1] in 76.23% cases. Finding of present study regarding apex of sacral hiatus reaching upto the level of third sacral vertebra was similar to the finding of Nagar, S.K. (2004)[2] Shinde and Shirbagdi (2016)[5] who reported the apex of sacral hiatus reaching upto the level of third sacral vertebra in 37.3% cases and 17.52% cases respectively. In present study the base of sacral hiatus was situated at the level of fifth sacral vertebra which was similar to the findings noticed by Nagar, S.K. (2004)[2] in 72.6% cases, Shinde and Sharbagdi (2016)[5] in 98.96% cases and Vinod Kumar et. al. (1992)[1] in 83.18% cases.

Vanju, V.V. Lakshami and Ganesh, T. Waghmode (2013)[4] and Nagar, S.K. et. al. (2013)[3] reported sacralization of coccyx and sacrum with five sacral foramina. In present study also when incomplete sacralization of coccyx will be completed by complete fusion of transverse processes of fifth sacral vertebra with transverse processes of first coccygeal vertebra the incomplete formation of fifth sacral foramen will be completed. In this way findings of previous authors support the findings of present study.

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