ABSTRACT

INTRODUCTION
Sacrum is a flat bone which is triangular in shape and is actually formed by the fusion of five sacral vertebrae. It connects the two hip bones posteriorly and superiorly it articulates with the fifth lumbar vertebra and distally with the coccyx. Majority of the times the coccyx will be fused with the sacrum. The spines of the vertebra fuse posteriorly but there is a hiatus at the lower end of medial crest because of the failure of fusion of the lamina of the fifth sacral vertebra. Back pain is the most common complaint in the modern life. In some incidences sacralisation of lumbar vertebra seems to be the most common cause for backache.

The main aim of the study is to find:

- To find out the anatomical variations in the level at which the hiatus opens.
- To find out if sacralisation occurs and if present, to make an attempt to find the frequency of the condition.
- To find out if sacralisation is associated with other anatomical defects.

The study was done in Mysore Medical College from January 2012 to May 2012. Five hundred sacral bones were studied. The sacralisation was observed in Six vertebras. i.e. they were observed in 1.2% of the cases. In one bone there non-fusion of first sacral lamina was observed. The knowledge of the hiatal opening is very important to the people who are practicing Medicine, Orthopedics and Gynecology.

KEYWORDS
Chronic, Backache, Anatomy, Sacrum, Hiatus.

HOW TO CITE THIS ARTICLE: Shivanand ND, Bidarkotimath S, Kumar S. Chronic lower backache: is this the anatomical answer. J. Evid. Based Med. Healthc. 2016; 3(20), 830-831. DOI: 10.18410/jebmh/2016/189

INTRODUCTION: The sacrum was considered to be a sacred bone. In fact the very name sacrum comes directly from the word os sacrum, a Latin word which means sacred bone. The sacrum was related to reproduction, fertility, and reincarnation in meso America. In olden days it was considered as a door way for the translocation of spirits from one world to other.

Sacrum is a flat bone which is triangular in shape and is actually formed by the fusion of five sacral vertebrae. It connects the two hip bones posteriorly and superiorly it articulates with the fifth lumbar vertebra and distally with the coccyx. Majority of the times the coccyx will be fused with the sacrum. The spines of the vertebra fuse posteriorly but there is a hiatus at the lower end of medial crest because of the failure of fusion of the lamina of the fifth sacral vertebra. But there is no hard and fast rule saying that the hiatus should be at the fifth sacral vertebra, sometimes it may be higher up when the higher sacral vertebra will fail to fuse. In rare incidences there might be complete non-fusion of the median crest.

Back pain is the most common complaint in the modern life. In some incidences sacralisation of lumbar vertebra seems to be the most common cause for backache. Invariably when sacralisation occurs i.e, pathological joining of the fifth lumbar with that of first sacral vertebra there will often be anatomical defects which are seen in the posterior surface of sacrum. Clinically the hiatus is very important because it is used for epidural analgesia. But if these kinds of anatomical defects are encountered then it might lead to the total failure of epidural analgesia procedures. In fact the success of these procedures depend on the anatomical normalcy of these bones. All these conditions may result in chronic backache which may lead to unnecessary economic burden. The anatomical defects can be treated if found early and can be dealt with surgically.

AIM AND OBJECTIVES:
1. To find out the anatomical variations in the level at which the hiatus opens.
2. To find out if sacralisation occurs and if present, to make an attempt to find the frequency of the condition.
3. To find out if sacralisation is associated with other anatomical defects.

MATERIALS AND METHODS: The study was done in Mysore Medical College from January 2012 to May 2012. Five hundred sacral bones were studied. Majority of the bones were studied in the Department of Anatomy, Mysore Medical College. The rest of the bones were studied from the students of 1st MBBS and surrounding Medical college.
RESULT:

<table>
<thead>
<tr>
<th>Level</th>
<th>Variation</th>
</tr>
</thead>
<tbody>
<tr>
<td>S1</td>
<td>Nil</td>
</tr>
<tr>
<td>S2</td>
<td>Nil</td>
</tr>
<tr>
<td>S3</td>
<td>22</td>
</tr>
<tr>
<td>S4</td>
<td>257</td>
</tr>
<tr>
<td>S5</td>
<td>221</td>
</tr>
</tbody>
</table>

*Table 1: Anatomical variations in the level at which the hiatus opens*

- The sacralisation was observed in Six vertebras. i.e they were observed in 1.2% of the cases.
- In one bone there non-fusion of first sacral lamina was observed.

DISCUSSION: The sacrum is developed by the fusion of five sacral vertebras. The embryological development is very complicated and any deviation from the normal causes drastic effects. Since the embryologic development is complicated the deformities are very easily formed then previously taught. The chronic back pain is one of the main complaints seen not only in the elderly but also in people in their second and third decade of life.

The knowledge of structural modification is essential. In clinical practice it is very important because the success of the caudal epidural anaesthesia depend upon such variations. Spina bifida occulta or cystica can be accompanied and neurological deficits can be present in such cases.\(^8\) Nutritional factors and environmental factors may play a major role in such deformities. Maternal Diabetes during pregnancy has been observed to cause sacral agenesis.\(^8\)

The other part of the study is sacralisation which is a result of pathological calcification which directly restricts the movements and also is one of the main cause for chronic back pain.

CONCLUSION: The knowledge of the hiatal opening is very important to the people who are practicing Medicine, Orthopedics and Gynecology. Many important procedures such as epidural analgesia depend on the normal anatomy of the Sacrum, a deviation in the normal anatomical structure results in the failure of these procedures.

REFERENCES: