Bony Projection from the Posterior Superior Iliac Spine

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ABSTRACT
A bony projection from posterior superior iliac spine from a right male hip bone out of 100 hip bones was observed. Its incidence was 1%. The study was carried out in the department of anatomy CSM Medical University, Lucknow, UP, India. This might have produced when sacrotuberous ligament is excessively used resulting from change in centre of gravity during weight transmission through sacrum. The bony spur may imping on the surrounding structures. The projection may cause trauma and ultimately rupture of ligament. The structure may be present in persons with change of centre of gravity. Thus it is of utmost importance to clinicians, radiologists and anthropologists. Moreover it has been reported for its virgin occurrence.

Key words: Bony projection, sacrotuberous ligament, sacrum, bony spur

1. INTRODUCTION
Iliac crest forms the upper end of the ilium. It has two ends. Anterior end of the iliac crest is known as anterior superior iliac spine which provides attachment to inguinal ligament and sartorius. Posterior end of the iliac crest is known as posterior superior iliac spine. It provides attachment to the upper fibres of sacrotuberous ligament and some fibers of dorsal sacro-iliac ligament. A hip bone out of 100 hip bones was detected to have bony projection from posterior superior iliac spine. Such bony projections from the posterior superior iliac spine is not described in standard text books, hence the study has been carried out.

Case report
During the examination of hip bones in the osteology lab in the department of anatomy, KG Medical University, a male hip bone of right side out of 100 hip bones, was detected to have a bony projection arising from posterior superior iliac spine. It was directed downward and forward. Its length was 1.2 cm and thickness was 4 mm. Incidence of this bony projection was 1%. There was no other abnormality in this hip bone.

2. DISCUSSION
Osteophytes, commonly referred to as bone spurs, are bony projections that form along joint margins [1]. They should not be confused with enthesophytes, which are bony projections which form at the attachment of a tendon or ligament [2]. Spurs can also appear on the feet, either along toes or the heel, as well as on the hands. In extreme cases bone spurs have grown along a person's entire skeletal structure: along the knees, hips, shoulders, ribs, arms and ankles. Such cases are only exhibited with multiple exostoses. Bony projections or exostosis are formed when osteogenic layer beneath the periosteum is exposed. Exostosis are common in shoulder, hands and feet. Bony projection from iliac crest [3], obturator foramen [4] and external occipital protuberance [5] has been reported. But exostosis from posterior superior iliac spine is not reported so far in standard text books. Posterior superior iliac spine gives attachment to sacrotubercane and part of dorsal sacro-iliac ligament. During weight transmission, the sacrum is forced to rotate under the body weight. In this rotation, the anterior segment is tilted downwards and posterior segment upward. The downward tilt is prevented mainly by dorsal sacro-iliac ligament and upward tilt of posterior segment is prevented by sacrotubercous ligament. When dorso-iliac and sacrotubercous ligament is excessively used specially when there is excessive upward tilt of posterior segment of sacrum used of one side, the osteogenic layer might be exposed leading to formation of bony projection. This may happen when there is change of centre of gravity. Other causes may be microtrauma in sacrotuberus ligament which lead to ossification of ligaments or calcium metabolism disorder resulting in the formation of bony projection. The bony projection may imping on the surrounding structures and tearing of the sacrotubercous ligament ultimately resulting in its rupture. Since it is found in persons in which there is change of centre of gravity, it will be useful in identifying such persons. Thus the knowledge of these bony spurs are of utmost use to clinicians, radiologists and anthropologists.
Figure-1 showing bony projection from posterior superior iliac spine
IC- Iliac crest PSIS- posterior superior iliac spine, BS- bony spur, GSN- greater sciatic notch

3. REFERENCES
[1]. www.mayoclinic.com/health/bone-spurs/DS00627
[5]. Singh Rajani  Bony tubercle at external occipital protuberance and prominent ridges.