26445 - CLINICAL VS RADIOLOGICAL POSITION OF THE INTERCRESTAL LINE

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INTRODUCTION: Spinal anesthesia is usually performed at the L3/4 interspace. The most common landmark used when determining the L3/4 interspace is the intercrestal line. The intercrestal line is an imaginary line connecting the upper boarder of the two iliac crests. Although several studies have looked at the radiological location of the intercrestal line, no study has looked at the clinical location of the intercrestal line.
METHODS: Ethics approval was obtained from our local research ethics committee, and written consent was obtained from each patient. Patients undergoing diagnostic Computed Tomography (CT) Scans of the lumbar region were recruited and demographics were recorded.

Prior to the scan, the patient was placed in a sitting position, with maximal hip and lumbar spine flexion. The intercrestal line was recreated and a radiopaque marker was placed at the point where it crossed the spine. A protocol was developed to decrease marker movement as the skin moved. The patient then underwent his/her CT scan. A radiologist determined both the position of the marker and the radiological position of the intercrestal line.

Once all data was collected, we compared the location of the marker with the radiological location of the intercrestal line for these patients. Data was analyzed with the Wilcoxon rank-sum test for comparing two distributions.

RESULTS: Five patients were recruited into the study. The radiological position of the intercrestal line was either L4 or L4/5 in each patient studied. The marker, which was placed on the palpated level of the intercrestal line, was more cephalad in every patient (range L1 to L2/3). This result was statistically significant ($p < 0.005$).

DISCUSSION: This study demonstrates that the intercrestal line, when determined by surface landmarks, is higher than previously thought. It has traditionally been taught that the intercrestal line is at L4 or the L4/5 interspace¹.

Saifuddin² has shown us that the termination of the spinal cord in the normal population can be as low as the L2/3 interspace. Therefore, when performing spinal anesthesia, one must always be at L3/4 or below. The results of our study may explain the results of a study done by Broadbent³, where he demonstrated that when an anesthesiologist is asked to identify a spinal level, they are one or more spaces higher than they think.

There are many case reports of spinal cord injury following neuraxial anesthesia⁴. We found in our study that the palpated intercrestal line is most often at L2/3. Since the spinal cord may terminate as low as L2/3 in the normal population, one must be below the intercrestal line when performing spinal anesthesia. If not, you are putting the patient's spinal cord at risk.

REFERENCES: 1. Neural Blockade 1998 p230

2. Spine 1998 23: 1452-1456

3. Anaesthesia 2000 55: 1122-1126

4. Anaesthesia 2001 56: 238-47