Regional Symmetry of the Pelvis

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Introduction

- Severe pelvic fractures are often treated with surgery in attempts to stabilize the bone.
- With knowledge of the symmetry of pelvis, the intact side can be used as a basis of the fractured side.

Objective

Understand the left-right symmetry of the pelvis to assist with the virtual reconstruction of fractured pelvises.

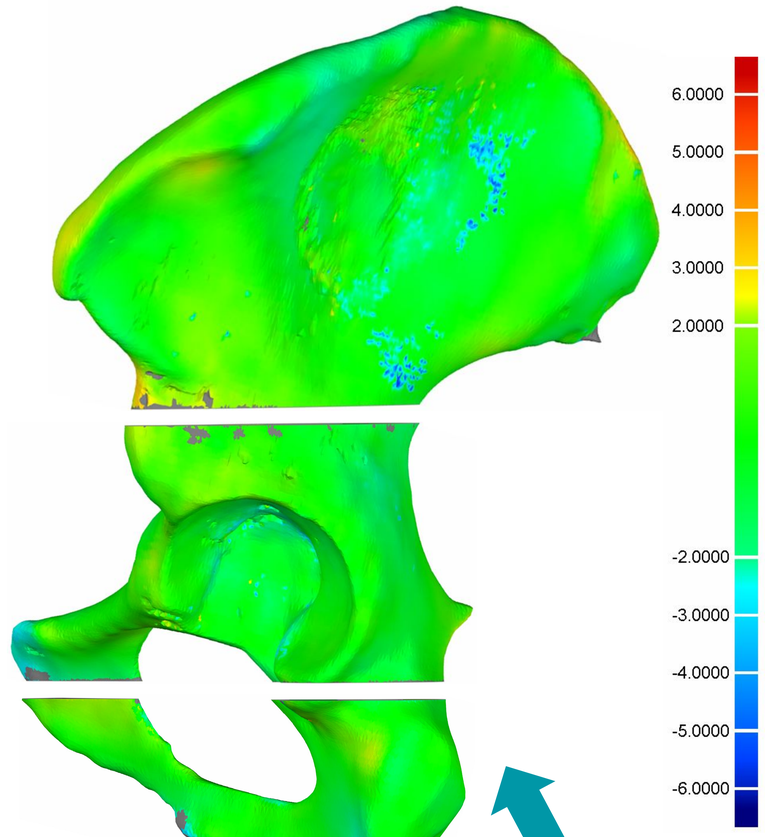
Methods

1) CT scans of intact pelvises are imported into Mimics® and 3D models are created.
2) Spine and femurs are removed to isolate the pelvis.
3) Model is imported into GeoMagic® and the regions are defined.
4) The segments from either side are aligned.
5) Colour deviation maps of each segment are generated.

Results and Conclusion

Region	RMS (mm)	% of Points Within ± 2 mm
Iliac	1.29	85.8
Acetabulum	1.02	92.4
Pubic Ramus	1.04	91.4

- The average RMS values are below 2 mm and the percentage of points within 2 mm is high.
- The results imply that the pelvis is symmetrical and may assist in the surgical planning process of pelvic fractures.



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