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REAL 3D BIOMECHANICAL MODELS OF PELVIS AND PELVIC FLOOR AS THE WAY TO IMPROVE KNOWLEDGE ABOUT INCONTINENCE

Hypothesis / aims of study

Importance of understanding of disorders in pelvic floor function, as a functional factor for continence, increased rapidly in last five years. Sequelae may be present as results of delivery trauma or trauma of bony pelvis. Injuries to urogenital and GIT system which can end in urinary incontinence or faecal incontinence, can be hide. It means that sequelae may occur without primary wound as a rupture of urethra, urinary bladder or rectum.

Study design, materials and methods

The real model of pelvis, based on MRI scans, was created. Forces were incorporated by final elements method. Changes of surface tensions were evaluated in different types of pelvic fractures.

Results

Biomechanical models try to describe injury mechanisms during trauma. Our study shows biomechanical 3D models of m. levator ani and sacrospinal and sacrotuberal ligaments depending on fracture types. It shows distribution of surface tensions and surface stress during modeling of different types of impacts.

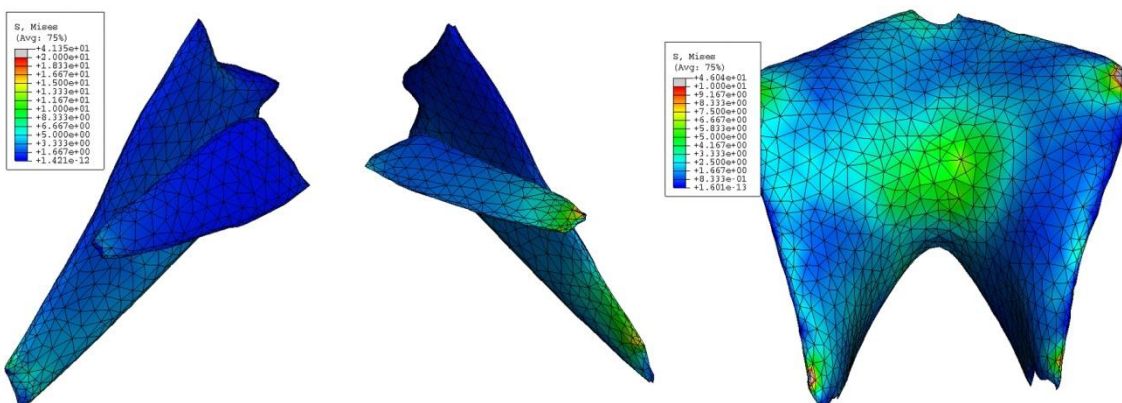


Figure 1: Surface stress in soft tissue in type B pelvic fracture

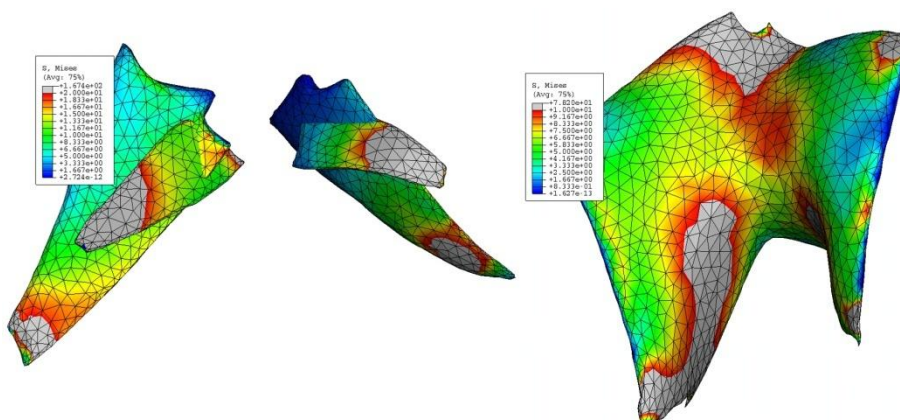


Figure 2: Surface stress in soft tissue in type C pelvic fracture

Interpretation of results

In the models there could be detected a gradation of damage regarding not only to bony pelvis but to soft tissue as well.

Concluding message

From the models there would be predicted a possible development of sequelae in the uro-genital and GIT systems which could come up in the future.

<i>Specify source of funding or grant</i>	IGA MZ CR NS/9971-3
<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	NONE