#402 Fixation ability of contemporary used vaginal kits in prolapse surgery

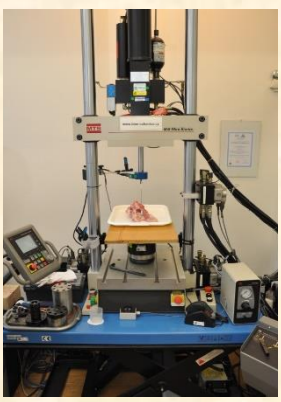
Halaska M, Sedlacek R, Lincova M, Nanka O, Maxova K
Charles University, Czech Technical University in Prague

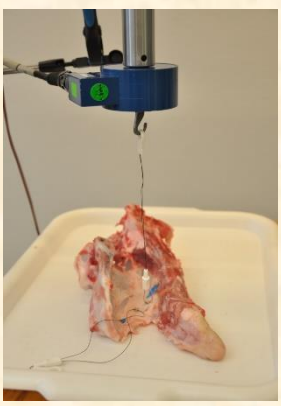
ABSTRACT

The treatment of the pelvic organ prolapse switched in the past decades from the traditional native tissues repair to the synthetic mesh suspension methods - vaginal or abdominal. A higher proportion of their success and durability is conditioned by high-quality of anchoring system that is able to withstand the high pressures that affect the pelvic floor during cough and Valsalva.

The aim of presented study is the completion of an earlier experiment which compared the necessary pull-out resistance of available anchoring means in the treatment of apical prolapse in vaginal surgery.

Figure 1,2: Porcine pelvis under experimental measurement



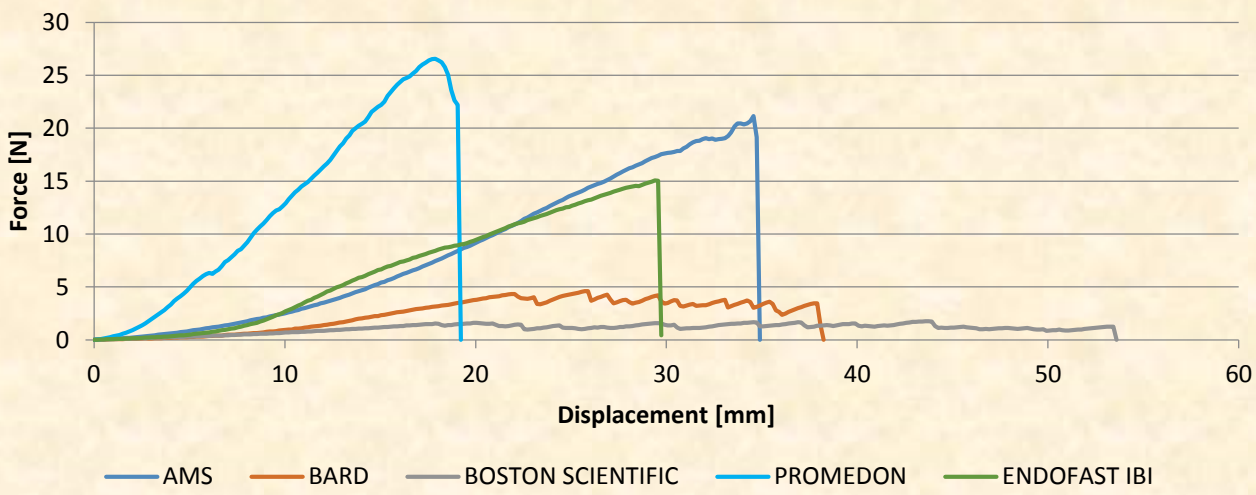


METHODS

The fixation resistance of different mesh kits and eventually stitches is at the forefront of our long-term research and practical interests. The main reason of this fact is an effort to estimate the difference in immediate adherence of materials used between the methods available.
As a substitute fixation structure for anchoring the mesh we use a standardized part of porcine sacrotuberous ligament which is close to the volume and structure of the female sacrospinous ligament.
This time we added for the comparison to a selection of the kits that we have used so far (Elevate-AMS, Nuvia-Bard, Calistar-Promedon) a newest development in the field – EndoFast Reliant (Allium Medical) with special Spider Fasteners.
The measurement of pull-out forces under discussion was performed on the MTS Mini Bionix servohydraulic system using the software FlexTest GT (PM 00/11). This exceptional mechanism effects on the materials under investigation with increasing tensile force with the aim to to determine the strenght needed to break the fixation.

RESULTS

Modern mesh materials and stitches have mostly a high standard of biocompatibility and the design of fixation devices is of great importance in avoiding prolapse recurrence.



Our study showed the differences in fixation of the kits used.
The anchoring is only the primary fixation accompanied by velcro effect and lately followed by fibrotization and ingrowth of the mesh into the tissues.
Sufficient fixation of devices into the ligament is achieved with anchors, especially those with robust body and barbs in more levels (26.6N).

CONCLUSIONS

We have determined a maximum force needed for pull the different implants out of the substitute porcine ligament.
Based on our study we conclude: only the anchors meet the demand of immediate vaginal suspension of apical prolapse thus providing the conditions for further steps of permanent success.

REFERENCES

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michael.halaska@lf1.cuni.cz