

THEORETICAL-MATHEMATICAL OBSERVATIONS ON THE ACTION OF FORCES IN TVT/SPARC- AND MONARC-TAPE AND ITS ANATOMICAL EXAMINATION

Hypothesis / aims of study

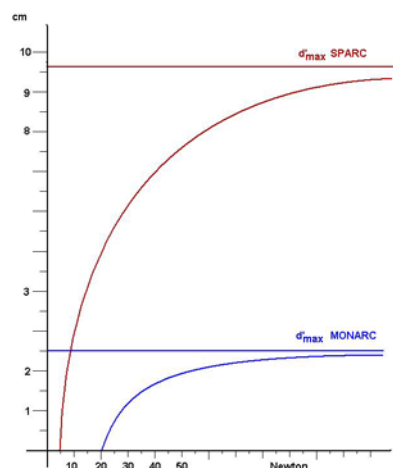
Can transobturator and retropubic tapes be compared in terms of mechanism of action, action of forces when positioned and strain exerted on the tapes?

Study design, materials and methods

Draw up a mathematical model which takes the various anatomical conditions of the two tape systems into account. Calculate the forces according to this model and examine the parameters on an anatomical model and in vivo using angle measurements and measurements of tape length.

Results

The action of forces was found to be four times higher for the transobturator tapes than for the retropubic tapes. At the same time, if there is any risk of overcorrection with transobturator tapes, it is minimal. It must be assumed that the strain on the applied tape must be greater with transobturator tapes.



Interpretation of results

With the available different relationships in forces, the principle of „tension free“ for the transobturator tapes should be critically analysed. A confirmation of the various mechanisms of both types of tape could be deduced from the calculation.

Concluding message

Overcorrection with the transobturator method does not seem possible. This fact, together with the considerably lower risk of injury to the bladder, makes the transobturator method of positioning the tape a safer method than the retropubic positioning of tape, with fewer complications. Long-term results will need to show whether the greater amount of strain involves a higher rate of relapse.