

## DO WOMEN WITH EARLY ANATOMICAL RECURRENCES OF ANTERIOR VAGINAL WALL PROLAPSE AFTER ANTERIOR VAGINAL REPAIR HAVE LOWER VAGINAL TISSUE COLLAGEN CONTENT?

### Hypothesis / aims of study

The relatively high recurrence of anterior vaginal compartment prolapse (POP) following anterior vaginal repair was recognised over a century ago. Although recurrences in some women appear associated with underlying anatomical pelvic support defects (1), anecdotally, it is claimed that poor tissue collagen content is responsible in some women. We performed this study in order to determine if women with recurrent prolapse have a lower content of Collagen Type I content in their vaginal epithelial tissue.

### Study design, materials and methods

This study of 56 women undergoing surgery for symptomatic POP was performed as part of a larger prospective study designed to investigate factors influencing outcome of anterior vaginal repair. Anterior vaginal wall tissue samples were obtained at surgery for Immuno-histochemical assay to determine tissue content of Pro-collagen 1, Collagen Types I, III and V, Matrix Metalloproteinase (MMP) 1 and 2, and Oestrogen receptors. Outcome of anterior vaginal repair was assessed one year after surgery using the ICS POP-Q examination system and graded into graded into Optimal and Satisfactory (Successful) or Unsatisfactory (Recurrent) as recommended by an international consensus group. The result obtained from 28 women with recurrent POP was compared to those of 28 women with successful anatomical outcomes.

### Results

The table below shows a comparison of the two outcome groups.

|                            | Successful | Recurrent | T-Test p-values |
|----------------------------|------------|-----------|-----------------|
| <b>Mean Age (years)</b>    | 61         | 65        |                 |
| <b>Median Parity</b>       | 2          | 2         |                 |
| <b>Men BMI</b>             | 27         | 27        |                 |
| <b>Median POP-Q stage</b>  | 2          | 2         |                 |
| <b>Mean scan area</b>      |            |           |                 |
| <b>Pro-Collagen</b>        | 0.0045     | 0.0041    | 0.646           |
| <b>Collagen I</b>          | 0.1019     | 0.0983    | 0.864           |
| <b>Collagen III</b>        | 0.0004     | 0.0004    | 0.882           |
| <b>Collagen V</b>          | 0.0085     | 0.0109    | 0.616           |
| <b>Oestrogen receptors</b> | 0.0055     | 0.0051    | 0.764           |
| <b>MMP 1</b>               | 0.0003     | 0.0003    | 0.789           |
| <b>MMP 2</b>               | 0.0047     | 0.0032    | 0.225           |

### Interpretation of results

The findings of this study do not support the view that recurrence of POP following anterior vaginal repair is related to poor vaginal tissue content in some women. Rather it provides evidence that recurrence of anterior vaginal repair is likely to be related to other factors such as pre existing underlying fascial and muscle defects (1).

### Concluding message

Early recurrence of anterior vaginal compartment prolapse following anterior vaginal repair surgery is not associated with reduced vaginal tissue collagen content or altered collagen metabolism.

### References

1. Int Urogynecol J Pelvic Floor Dysfunct. 2005 Aug; 16 (Supp2) S73.

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**HUMAN SUBJECTS:** This study was approved by the Plymouth Local Research Ethics Committee and followed the Declaration of Helsinki Informed consent was obtained from the patients.