COMPUTER MODEL TO PREDICT PREGNANCY OUTCOME AFTER VASOEPIDIDYMOSTOMY
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Purpose: To develop a computer model to predict pregnancy outcome after vasoepididymostomy based on pre-operative and intra-operative findings.

Methods: Retrospective study on 423 patients who underwent vasoepididymostomy between Jan 1979 and Feb 2003 by one surgeon (AJT). Pregnancy outcome was available on 251 patients. Post-operative pregnancy, pre-operative history and intra-operative findings were recorded for analysis. A randomly selected subset of 200 patients (from 251 patients) was used for data analysis to create a decision matrix prediction algorithm based on logistic regression. Univariate analyses revealed that patency status and level of epididymal anastomosis were significant predictors of outcome. Multivariate analysis showed that patency status and age of the female partner were the most significant independent predictors of post-operative pregnancy. These predictors were then used to create the model. The model was then tested on the remaining 51 patients (from the 251 patient group). This separate testing group was used to obtain an unbiased assessment of the model prediction accuracy.

Results: Overall accuracy of prediction for the model ranged from 78.5% in the design group (200 patients) to 54.9% in the test group (51 patients). Palm™ and Windows™ based versions of this computer model may be downloaded as free shareware from: www.esijo.com. In clinical practice, we utilize general indicators (level of epididymal anastomosis or age of female partner) for an estimated prediction of pregnancy outcome after vasoepididymostomy. Our model may be more accurate by combining these predictors.

Conclusions: This model may provide the surgeon and patient with a pregnancy prediction to better prepare for final outcome. The model may be accessed by any physician and tested at different institutions for validation and model refinement.