

**Maternal gestational protein-calorie restriction decreases the number of glomeruli and causes glomerular hypertrophy in adult hypertensive rats**

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**Objective:** This work analyzed the renal function and structure in offspring rats that were submitted to maternal protein-calorie restriction during prenatal or lactation periods.

**Study design:** Kidneys from adult offspring were studied. Animals from mothers that were submitted to food restriction were separated in 3 groups: control, prenatal restriction, and lactation restriction. Blood pressure, microalbuminuria, and glomerular filtration rate were determined. Kidney cortical remodeling was analyzed with stereology; volume-weighted glomerular volume and the number of glomeruli were estimated.

**Results:** Adult prenatal restriction offspring showed enhanced microalbuminuria, decreased glomerular filtration rate, and hypertension; their kidneys showed a smaller number of hypertrophied glomeruli than control and lactation restriction animals.

**Conclusion:** Maternal prenatal protein-calorie restriction in rats causes kidney disease in adult offspring, which is characterized by hypertension and renal dysfunction and suggests secondary kidney remodeling because of an impairment of glomerulogenesis.

**Editorial Comment**

This is one more important study from the State University of Rio de Janeiro on the effects of maternal protein and energy malnutrition during prenatal or lactation periods.

After an extensive study using different methodologies, the authors found that rats prenatally submitted to undernutrition became hypertensive and proteinuric. On the other hand, the effects on the renal function and blood pressure are not evident when the protein-calorie restriction takes place after birth.

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**RECONSTRUCTIVE UROLOGY**

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**Urethral reconstruction after erosion of slings in women**

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**Purpose of Review:** The purpose of this review is to summarize the recent peer review literature and provide expert opinion about the diagnosis and treatment of sling erosions.

**Recent Findings:** The incidence of sling erosion depends partly on the composition of the sling. Synthetic slings, particularly those made of woven polyester and other tightly woven material erode 15 times more often than autologous, allograft and xenograft slings. The presenting symptoms for all types of sling erosions include

urinary retention, urge and mixed incontinence, but synthetic sling erosions often present with additional symptoms, including vaginal discharge, vaginal pain/pressure, suprapubic pain, and recurrent urinary tract infection. The diagnosis is made by cystoscopy. For synthetic sling erosions, it is generally agreed that the entire sling and as much foreign material (bone anchors, screws and sutures) as possible should be removed and the urethra repaired. For non-synthetic sling erosions, incision or partial excision of the sling and urethral closure suffices. The success rate for urethral repair ranges from 89 to 100%, but unless an anti-incontinence procedure is performed concomitantly, the likelihood of postoperative incontinence ranges from 44 to 83%. When synchronous anti-incontinence surgery was performed the anatomical success rate was 96% and the continence rate 87%.

**Summary:** Erosions of urinary slings are rare, but synthetic slings erode 15 times more often than non-synthetic slings. The anatomical success rate is very high after a single operation, but unless a concomitant anti-incontinence operation is performed, the likelihood of postoperative sphincteric incontinence is very high.

### **Rising awareness of the complications of synthetic slings**

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*Curr Opin Urol. 2004; 14: 317-21*

**Purpose of Review:** This article will review the current literature on the complications of synthetic suburethral slings used in the treatment of stress urinary incontinence and the management of these complications.

**Recent Findings:** Loosely applied mid-urethral synthetic slings are becoming the treatment of choice in the management of stress urinary incontinence. Despite the ease of carrying out these procedures there is still a learning curve and, whilst the current literature shows there has been a significant reduction in the complication rate in recent years with the use of modern synthetic slings, they still occur and can be a significant cause of morbidity. There has been interest in developing better imaging techniques for both establishing early diagnosis and in assisting in the treatment of complications; magnetic resonance imaging of the urethra has been one of the modalities that has been investigated. Further work is needed to predict those who are more likely to develop complications during the placement of suburethral slings; the use of urodynamic procedures has shown equivocal results. Inevitably with more experience the techniques have evolved for the management of complications, such as the treatment of urethral obstruction with transvaginal sling incision.

**Summary:** Synthetic materials for slings provide an effective and safe method for treating urinary stress incontinence in women, and have delivered improved efficacy; nevertheless, although the incidence of complications has significantly reduced in recent years, they still represent a significant and not unsubstantial morbidity.

### **Editorial Comment**

Both papers by well-known opinion leaders outline the problems, which may occur with sling operations in the treatment of stress urinary incontinence. Especially synthetic slings tend to erode the urethra 15 times more often than biological materials. Although allograft and xenograft slings seem to be the better solution when it comes to complications of the adjacent urethra remnant traces of donor desoxyribonucleic acid fragments or small protein structures are present and their long-term effect on the recipient is still unknown. Bhargava & Chapple stress the fact that complications from synthetic sling materials have declined in recent years and the management of complications has improved due to an increasing experience with these problems. However, sling complications still represent a “significant and not unsubstantial morbidity”.

Should we abandon sling operations in women with stress urinary incontinence? By no means. The majority of the patients can be successfully treated if the indication for the operation was appropriate. The fact that some of the sling operations can be done under regional or local anesthesia and with a short operating time should not make such a procedure the operation of choice for all women with stress urinary incontinence. An additional important fact is the type of sling material used. Whenever possible a material taken from the patient to be operated such as rectus fascia or fascia lata is the material of choice because it considerably reduces both urethral erosions and possible systemic side effects of cadaveric or xenograft materials.

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## UROLOGICAL ONCOLOGY

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### **Cancer progression and survival rates following anatomical radical retropubic prostatectomy in 3,478 consecutive patients: long-term results**

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**Purpose:** We updated a long-term cancer control outcome in a large anatomical radical retropubic prostatectomy (RRP) series. We also evaluated the perioperative parameters that predict cancer specific outcomes following surgery.

**Materials and Methods:** From May 1983 to February 2003, 1 surgeon (WJC) performed RRP in 3,478 consecutive men. Patients were followed with semiannual serum prostate specific antigen (PSA) tests and annual digital rectal examinations. We used Kaplan-Meier product limit estimates to calculate actuarial 10-year probabilities of biochemical progression-free survival, cancer specific survival and overall survival. Multivariate Cox proportional hazards models were used to determine independent perioperative predictors of cancer progression.

**Results:** At a mean followup of 65 months (range 0 to 233) actuarial 10-year biochemical progression-free, cancer specific and overall survival probabilities were 68%, 97% and 83%, respectively. On multivariate analysis biochemical progression-free survival probability was significantly associated with preoperative PSA, clinical tumor stage, Gleason sum, pathological stage and treatment era. Cancer specific survival and overall survival rates were also significantly associated with clinicopathological parameters.

**Conclusions:** RRP can be performed with excellent survival outcomes. Favorable clinicopathological parameters and treatment in the PSA era are associated with improved cancer control.

### **Editorial Comment**

This paper is very valid as it describes the long-term outcome of a very large cohort of patients after radical prostatectomy. Notably, all patients have been operated by a single surgeon (W. Catalona), thus certifying best results by a high-volume urologist. The most interesting results are given as PSA progression-free survival data (defined as detectable PSA > 0.2 ng/mL) and are therefore comparable to other, especially nonsurgical data (see following comment). Biochemical progression was 20% at 5 and 32% at 10 years. A closer look into the Kaplan Meier curves reveals more truth: in very low-risk patients with PSA < 2.6 ng/mL around 10%