

In the standard Gleason grading, cribriform pattern could correspond to patterns 2, 3, or 4. In the revised Gleason grading published in 2005 (1), cribriform pattern should never correspond to pattern 2, and very rarely to pattern 3. Most of the times it corresponds to grade 4. Cribriform pattern 3 is only diagnosed for well circumscribed glands of the same size as normal glands.

Reference

1. Epstein JI, Allsbrook WC Jr, Amin MB, Egevad LL; ISUP Grading Committee: The 2005 International Society of Urological Pathology (ISUP) Consensus Conference on Gleason Grading of Prostatic Carcinoma. *Am J Surg Pathol.* 2005; 29: 1228-42.

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INVESTIGATIVE UROLOGY

Localization and expression of inducible nitric oxide synthase in biopsies from patients with interstitial cystitis

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J Urol. 2008; 180: 737-41

Purpose: Interstitial cystitis is a chronic inflammatory disease of the bladder and luminal nitric oxide has been shown to be increased in the bladder in patients with interstitial cystitis. We analyzed endogenous nitric oxide formation and inducible nitric oxide synthase gene expression in the bladder of patients with interstitial cystitis to obtain further knowledge of the localization of inducible nitric oxide synthase in the bladder mucosa.

Materials and Methods: Six patients with interstitial cystitis and 8 controls were studied. In these 2 groups endogenous nitric oxide formation was measured and inducible nitric oxide synthase expression in bladder biopsies was analyzed at the transcriptional and protein levels by real-time polymerase chain reaction and Western blot, respectively. Immunohistochemistry for inducible nitric oxide synthase was also performed.

Results: Patients with interstitial cystitis had higher inducible nitric oxide synthase mRNA expression and nitric oxide formation than controls ($p < 0.01$ and < 0.001 , respectively). Inducible nitric oxide synthase protein expression was up-regulated in the interstitial cystitis group. Immunohistochemistry showed that inducible nitric oxide synthase was predominantly localized to the urothelium in patients with interstitial cystitis but inducible nitric oxide synthase-like immunoreactivity was also found in macrophages in the bladder mucosa.

Conclusions: The increased levels of endogenously formed nitric oxide in patients with interstitial cystitis correspond to increased inducible nitric oxide synthase mRNA expression and protein levels in these patients. Furthermore, inducible nitric oxide synthase was found to be localized to the urothelium but it was also found in macrophages in the bladder mucosa. Whether high levels of endogenously formed nitric oxide are a part of the pathogenesis in interstitial cystitis and whether it has a protective or damaging role remain to be elucidated.

Editorial Comment

Analyzing patients with interstitial cystitis (IC) and controls, the authors evaluated whether high levels of endogenous nitric oxide (NO) in the bladder in patients with IC also correspond to increased levels of iNOS at a transcriptional and protein level. Also, the authors studied the location of iNOS in the bladder mucosa.

It was found that the bladder luminal NO concentration was significantly increased in patients with IC when compared to controls. At the transcriptional level iNOS expression was detectable in biopsies from patients with IC as well as in controls. However, iNOS mRNA expression was significantly higher in biopsies from patients with IC when compared to controls. In addition, iNOS protein expression was found in the biopsies of patients with IC but not in the biopsies of controls.

This important study opens new avenue for understanding the pathophysiology of IC and also for additional diagnostic tools of this until now under understanding disease.

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Effect of cyanoacrylic glue on penile fracture: an experimental study

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J Urol. 2008; 180: 749-52

Purpose: We investigated the effect of Glubran(R)2 cyanoacrylic glue on rat cavernous tissue after forming penile fractures experimentally as well as the histopathological effect. We also investigated its clinical use.

Materials and Methods: Experimental penile fracture was formed by incising from the proximal dorsal side of the penis in 32 Wistar Albino rats. The rats were randomly assigned to 4 main groups of 8 each. In the control group the incision was not repaired and it was left to secondary healing. In the glue group cyanoacrylic glue was only applied to the incision region. In the primary repair group the incision was primarily repaired and in the final group cyanoacrylic glue was applied to the incision region following primary repair. Three weeks later penectomy materials were examined histopathologically.

Results: When the control group was compared with the other groups, the differences in cavernous tissue healing with fibrosis and hyperemia-bleeding were statistically significant ($p = 0.043$ and 0.003 , respectively). In the glue group fibrosis was observed in 2 rats. This group was the best according to cavernous healing. Although there was no significant difference between the control group and the other groups according to inflammation ($p = 0.057$), the glue group was better than the primary repair group ($p = 0.026$). No significant inflammation or hyperemia-bleeding was observed in the glue group. When the experimental groups were evaluated for histopathological parameters, it was observed that the best results were obtained in the glue group.

Conclusions: Cyanoacrylic glue can be used in cavernous surgery due to its hemostatic, adhesive and anti-inflammatory properties.

Editorial Comment

The authors investigated the effect of Glubran2 for penile fracture repair. They studied 4 groups of 8 rats each, after creating experimental penile fracture by incising the proximal dorsal side of the penis with

a number 15 lancet. In group C the incision was not repaired but was left to secondary healing. In group G cyanoacrylic glue was only applied on the incision region and the tissue was compressed to become adhered for 2 to 3 minutes. In group P the incision was primarily repaired with 6-zero polydioxanone. In group PG cyanoacrylic glue was applied on the incision region following primary repair.

The authors found that there was no inflammation and hyperemia-bleeding in only group G. In group PG only 1 rat had these histopathological features. Total healing was observed in all rats in the 2 groups. Slight fibrosis developed in the cavernous tissue in groups G and PG, similar to that in rats in group P, and the authors stated that this finding showed that cyanoacrylic glue has no effect on preventing fibrosis. The authors concluded that Glubran2 can be used in cavernous surgery due to its hemostatic, adhesive and anti-inflammatory properties, and that application of this material on the ruptured region of corpus cavernosum without suturing seems to be beneficial according to the primary repair method.

The authors are to be commended for that elegant study and for providing a new option that would be used in the future for cavernous repair. Nevertheless, it is important to point out that “penile fracture” is defined as “a rupture of the corpus cavernosum due to a blunt trauma in an erect penis. Lesions on a flaccid penis or lesions in the suspensor ligament of the penis are not included in this definition”. So, the mechanism of injury used in this experimental work is far different from a fracture. It would be better to name it as a “cavernous lesion”. A lesion caused by a scalpel in the albuginea is much less traumatic than a lesion caused by a blunt trauma to an erect penis with a thin albuginea submitted to a high intracavernosal pressure. A typical penile fracture is followed by swelling, hematoma and penile deformity, which would cause greater inflammatory reaction.

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RECONSTRUCTIVE UROLOGY

Surgical techniques in substitution urethroplasty using buccal mucosa for the treatment of anterior urethral strictures

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Eur Urol. 2008; 53: 1162-71

Objectives: Since the resurgence in the use of buccal mucosa (BM) in substitution urethroplasty in the late 1980s and early 1990s, there has been controversy as to which surgical technique is the most appropriate for its application.

Methods: The authors performed an updated literature review. Several centres have published widely on this topic, and the points considered include the use BM in dorsal onlay grafts, ventral onlay grafts, and tubularised grafts and the role of two-stage procedures.

Results: In experienced hands, the outcomes of both dorsal onlay grafts and ventral onlay grafts in bulbar ure-