Erectile Dysfunction (Impotence) in the Cyclist

See also Male Sexual Dysfunction

Background

1. General info
    - Overuse injuries occur in cyclists who regularly ride, especially those involved in competition
    - Ensuring that bike fit is correct is major factor in preventing overuse syndromes
2. Definition:
    - Repeated inability to get or keep an erection firm enough for sexual intercourse

Pathophysiology

1. Pathology of dz
    - Research suggests that perineal compression w/secondary decr in penile blood flow is contributing cause of ED in cyclists
    - Due to compression of dorsal branch of pudendal nerve and cavernous nerve between pubic symphysis and bicycle seat
2. Incidence/ prevalence
    - Approx 25% of men >65 yo suffer from ED
    - Incidence of ED in cyclists 4% compared w/1.1% in runners and 2% in swimmers
    - Studies report incidence of ED among cyclists between 4-24%
3. Risk factors
    - Bicycle riding more than 3 hrs/wk is considered by some authors as an independent risk factor for moderate to severe ED
    - Decr risk of ED by:
        - Riding road bicycle instead of mountain bicycle
        - Handlebar ht lower than saddle ht
        - Using a saddle w/o a cutout if perineal numbness was experienced w/use of a cutout saddle
    - Saddles w/narrow protruding nose may incr pressure on perineum and incr risk of ED
4. Morbidity
    - Long-term ED 2° to cycling is unclear
        - Some studies suggest relationship between acute high mileage events and ED
        - Other studies of ED among cyclists indicate either
            - No significant difference compared w/general population, OR
            - Diminished risk compared w/general population

Diagnostics

1. History
    - Cyclist c/o inability to achieve any erection or satisfactory degree of erection
        - May be acute after extended bike ride or gradually progressive
    - May have symptoms of paresthesia or hyperesthesia in distribution of pudendal or cavernous nerve
    - Check drug/ medication hx

        - Be aware of illicit or "performance enhancing" drugs that can cause hypogonadism or ED
    - Elicit recent training hx
        - Volume, mileage
        - Over training associated w/decr libido and ED
2. Physical exam
    - Genital exam typically normal
        - Assess testicular size
        - Penile abnormalities
    - Perform neurologic exam, attn to:
        - Back pain
        - Radiating pain
        - Discomfort along nerve root or dermatomal distribution
    - Evaluate for
        - Thyroid disorder
        - Hyperglycemia
        - Gynecomastia
            - Endogenous and exogenous causes: adrenal disorder, steroids, alcohol
    - Perform vascular exam to assess risk of vascular abnormality or atherosclerosis
3. Diagnostic testing
    - Consider laboratory work-up if
        - Gradual onset of symptoms
        - Symptoms do not improve w/decr cycling
        - Symptoms not explained by acute incr in cycling
    - Include
        - CBC
        - UA
        - Blood glucose
        - Renal, hepatic panel, thyroid fxn
        - Lipid panel
        - Serum testosterone
        - Prolactin
    - Treat as indicated
    - Further testing
        - Nocturnal penile tumescence testing
        - Duplex ultrasound of cavernous arteries
        - Pelvic arteriography
        - Cavernosometry and cavernosography
    - Dx criteria
        - See: Male Sexual Dysfunction

Differential Diagnosis

1. See Male Sexual Dysfunction

Therapeutics

1. For general tx see Male Sexual Dysfunction
2. Additional recommendations for cyclists

- Freq position changes
- Stand during prolonged riding
- Tilt nose of saddle downward
- Change ht of saddle and/or handlebars
- More prone position
  - Incr flexion at spine, pelvis, hips
    - May lower pressure on pudendal artery

3. Acute tx
   - No clear evidence to support any particular mgmt strategy
   - A "safe" general recommendation
     - Avoid saddle pressure on perineum until symptoms have completely resolved

Follow-Up

1. Return to office
   - If acute symptoms do not resolve w/rest
2. Refer to specialist
   - If symptoms persist

Prognosis

1. May return to cycling after all symptoms resolve

References

1. Huang V, Munarriz R, Goldstein I. Bicycle riding and erectile dysfunction: an increase in interest (and concern). Journal of Sexual Medicine. 2005 Sep;2(5):596-604
2. Andersen KV and Bovim G. Impotence and nerve entrapment in long distance amateur cyclists. Acta Neurologica Scandinavica 1997 Apr; 95(4):233-40. [Abstract only]
3. Leibovitch I and Mor Y. The vicious cycling: bicycling related urogenital disorders. European Urology. 2005 Mar; 47(3):277-86.
4. Dettori JR et al. Erectile dysfunction after a long distance cycling event: association with bicycle characteristics. Journal of Urology. August 2004.172(2):637-641
5. Nayal W. et al. University Medical Centre of Cologne. Penile Oxygen Pressure During Cycling Annual Meeting Abstracts. American College of Sports Medicine; 46th Annual Meeting. June 2-5, 1999.
6. Taylor JA III, et al. Bicycle riding and it relationship to erectile dysfunction. Journal of Urology. September 2004. 172(3):1028-1031.
7. Lowe BD, Schrader SM, Breitenstein MJ. Effect of bicycle saddle designs on the pressure to the perineum of the bicyclist. Medicine and Science in Sports and Exercise. 2004, 36(6):1055-1062
8. Tierney LM, McPhee SJ, Papadakis MA. CURRENT Medical Diagnosis and Treatment 2000. 39th Edition. Lange Medical Books/McGraw-Hill.

Author: Michael D. Milligan, MD, *University of Nevada Reno FPRP*

Editor: Carol Scott, MD, *University of Nevada Reno FPRP*