I PREFER MY *PASTA PENNE* TO BE *AL DENTE*

Richard Natale II, MD, FACS
President and Chairman of the Board, Carolina Urology Partners
Urologist, Men's Health Specialist, and Prosthetic Surgeon CUP-Concord/Mint Hill Division

As most aficionados will tell you, al dente is the only way to eat pasta. While I could wax poetically about my love for pasta, this isn't a cooking magazine. I'm even more passionate about men's health, so I'd like to discuss another favorite topic of mine since June is Men's Health Awareness Month after all. Why mention pasta at all? Well, that's the euphemism I use when describing erectile dysfunction (ED) to my patients. It's not just a 'floppy noodle' phenomenon. ED is defined as 'not being able to achieve and sustain an adequate erection for sex.'

Some conjure images of an older man with several comorbidities or perhaps an anxious young man when asked about the 'typical ED patient.' Two studies in the early 1990s, however, demonstrated that 10% of men between ages 18 and 40 reported ED and more than 50% between ages 40 and 70. That translates to tens of millions of American men suffering with ED. While arterial insufficiency may be a common cause, issues such as venous insufficiency and hypogonadism were noted in up to 80% of younger men in a small study. Nevertheless, comorbid conditions such as diabetes and hypertension are common offenders. Hypertension is observed in 40% of men with ED, which may be attributed to medication side effects (e.g., beta-blockers, HCTZ). 85% of men with diabetes report ED, with insulin resistance being shown to be an independent risk factor for disease progression and treatment failure. Then it should be of no surprise that the penis is the proverbial 'canary in a coal mine.' ED may be the first sign of cardiovascular disease and has been known to pre-date acute cardiac events by 10 years. While it may be the uncomfortable conversation at the end of a routine checkup, it's our job to know what's happening both above and below the belt line.

Most men don't need an elaborate workup. Doppler ultrasonography, for example, has its place, but it's a specialized test meant to establish diagnoses such as venous leak. Most patients will have a readily identifiable risk factor on routine screening (e.g., smoking, obesity, etc.,). Symptoms of hypogonadism, often associated with but not a direct cause of ED may be more subtle. Fatigue, poor sleep, weight gain, anhedonia, and mental cloudiness may bring us to a diagnosis of depression when, in fact, hypogonadism should be in the differential.

Once a diagnosis has been established, lifestyle modifications such as diet and exercise, weight loss, and smoking cessation are critical. For example, a recent study demonstrated a positive correlation between intermittent fasting and erectile quality. Patients and clinicians are reluctant to consider medications, supplements such as L-arginine, folic acid, and ginseng shown some efficacy and can be offered. Oxidizing agents can lead to declines in nitric oxide, a critical component of the 'erection cascade,' making antioxidants an attractive naturopathic option. A vacuum erection device is also a non-medical therapy, but most discontinue use due to penile bruising, ejaculatory pain, and painful erections. Therefore, oral phosphodiesterase inhibitors (PDEI) such as Viagra and Cialis, remain first-line agents. PDEIs block degradation of cGMP in cavernosal tissue, resulting in sustained smooth muscle relaxation and erectile preservation. Success rates are as high as 80% and side effects (e.g., facial flushing, headaches) are tolerable for most. Up to 80% of treatment failures are associated with incorrect use (e.g., taking Viagra with a large meal) and reeducation can work. In addition, medication combinations have been demonstrated to be safe and effective (e.g., daily Cialis plus breakthrough one-time dose of a PDEI). As with all medications, patients should be monitored for side effects (e.g., hypotension with combination therapy) and drug-drug interactions (e.g., nitrates, alpha-blockers).

Other therapies such as intraurethral or intra-cavernosal prostaglandins exploit the same pathway as previously described but circumvent issues such as drug interactions and first-pass metabolism. While these are viable alternatives, the former is not prescribed often due to its relative lack of efficacy and due to bothersome side effect profile (e.g., 35% of men report urethral pain/burning). Other options such as stem cell transplants, platelet-rich plasma (PRP) therapy, and low-intensity shock wave therapy are not FDA-approved and remain investigational per AUA guidelines. The general theory behind the mechanism of action for these treatments is neurovascular regeneration via activation of vascular endothelial growth factors (e.g., VEGF). Unfortunately, studies supporting these therapies often have small sample sizes, broad heterogeneity of inclusion/exclusion criteria, and variable treatment protocols. More work needs to be done in this area before labeling these therapies 'game changers.' Ultimately, patients who fail treatment may be offered surgery. The three-piece inflatable prosthesis, the most oft-used device, was developed over 50 years ago by urologist F. Brantley Scott. It can be considered the only 'cure' for ED since it provides a rigid, reliable, and on-demand erection. A recent multi-center retrospective study of 900 implant patients over a six-year period noted an overall 93% "high satisfaction" rate with 97.5% for patients experiencing no complications and 88% in those with minor complications such as prolonged post-operative pain, and penoscrotal edema and ecchymoses.