Medical management of Peyronie's disease

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Surgery is the gold-standard treatment for stable Peyronie's disease, but medical treatment may play a role in the active phase to reduce pain and inflammation. Patients presenting during the acute phase of Peyronie's disease and with adequate erectile function are the ideal candidates for medical treatment – the authors look at the options available.

Peyronie's disease is a wound-healing disorder of unknown aetiology that affects 3–9 per cent of the male population and is characterised by the formation of fibrous scars on the tunica albuginea of the penis. The mean age of onset is 55–60 years, but cases have been reported in the extremes of age. The plaque is inelastic and does not stretch as much as the remaining tunica albuginea. Therefore, in the erect state it causes a variety of deformities, including curvature (Figure 1), shortening, narrowing and hinge effect in up to 80 per cent of patients.

In the early phase, there is often an inflammatory component, which causes pain. Peyronie's disease is also frequently associated with erectile dysfunction, Dupuytren's contracture and a variety of other disorders, including diabetes, hypertension, dyslipidaemia and low testosterone.

The quality of life of both the patient and partner may be significantly affected, with an increased risk of depression, low self-esteem and relationship difficulties.1

Figure 1. Severe dorsal curvature of the penis as a consequence of Peyronie's disease

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Overall, approximately 30 per cent of patients will have diabetes, which has been found to be associated with advanced curvatures and vasculogenic erectile dysfunction. As two-thirds of patients with Peyronie’s disease present risk factors for arterial disease, erectile dysfunction is a common finding.

Peyronie’s disease is progressive in nature, with up to 48 per cent of men having disease progression if left untreated; it is characterised by an acute inflammatory and a chronic phase. During the former, there may be penile pain and curvature progression; the pain typically resolves spontaneously within 6–18 months from onset in most patients.

PATIENT EVALUATION

The diagnosis of Peyronie’s disease is usually apparent from the patient history and penile examination. The main points to gather from the history are whether the disease is still active, the degree of the curvature and the presence of erectile dysfunction. Patients with short disease duration (<12 months), penile pain or a recent change in penile deformity are still likely to have active inflammatory disease and, therefore, are not candidates for surgical intervention and would be more likely to benefit from medical therapy.

Penile pain, typically not severe in nature, may be persistent in the inflammatory stage of the disease but is usually present only during erection, thus interfering with sexual function. Spontaneous improvement usually occurs as the inflammation settles within six months, and almost all men will experience pain resolution by 18 months.

All the patients have either a well-defined plaque or an area of induration that is palpable on physical examination, even though they may be unaware of it. The plaque is located on the dorsal surface of the penis in two-thirds of patients, with a corresponding dorsal penile deformity; lateral and ventral sited plaques are not as common, but result in more coital difficulties as there is a greater deviation from the natural coital angle. Multiple plaques located on opposite sides of the penis or plaques appearing in the septum may cause penile shortening with or without a penile deformity.

The consistency of the plaque, be it soft, tender, calcified or ossified, should be noted as this may act as a guide to management. Calcification may occur at initial presentation or develop over time. It appears that calcification is not a manifestation of a more mature plaque as previously thought, but instead represents a different genetic subtype of Peyronie’s disease.

An assessment of the curvature on erection is best made by an intracavernosal injection of a vasoactive agent; a home photograph or a vacuum-assisted erection test can also be useful in the diagnosis. This allows complex curvatures to be assessed and will help in deciding the type of treatment best suited to the individual.

As up to 50 per cent of patients with Peyronie’s disease present associated erectile dysfunction and cardiovascular risk factors, a detailed history of any arterial risk factors should be noted and erectile function assessed using the validated International Index of Erectile Function-5 (IIEF-5) questionnaire.

NON-SURGICAL MANAGEMENT

Because there is no clear understanding of the aetiology of Peyronie’s disease, a cure has not yet been found; therefore, a variety of treatment options have been used over the years. The value of many published reports has been questioned as most were not well controlled, often had a small number of subjects in various phases of stability and with limited reports on objective measures of deformity change. Moreover, studies focused on reduction of pain, which appears to resolve with time even if untreated, and reduction of plaque size, which has never been found to correlate with curvature improvement, instead of reduction of erect penile deformity, which should be the most critical outcome measure.

Patients presenting during the acute phase of Peyronie’s disease and with adequate erectile function are the ideal candidates for medical treatment, while surgery is the only effective treatment once the disease is stable.

Medical treatment can be subdivided into oral therapy, intraleisonal injections, extracorporeal shock wave therapy (ESWT), iontophoresis and penile traction therapy.

**Oral therapy**

Oral therapy consists of the administration of potassium para-aminobenzoate (POTABA), vitamin E, tamoxifen, colchicine, acetyl esters of carnitine or pentoxifylline. In spite of initial encouraging results, none of these compounds has proven to be effective in reducing pain, curvature and plaque size in double-blind, placebo-controlled studies.

**Intraleisonal injections**

The rationale of intraleisonal therapy is that this form of administration allows adequate concentrations of the drug to be achieved at the level of the plaque. The most common injected drugs are steroids, collagenase, interferon and verapamil.

Recent studies have failed to demonstrate any effectiveness of intraleisonal injections of steroids, collagenase and interferon, while, although not yet confirmed in large-scale placebo-controlled trials, intraleisonal verapamil might be effective in stabilising disease progression or possibly reducing penile deformity in patients with non-calciified acute or chronic plaques.

**Extracorporeal shock wave therapy**

The aim of ESWT is mechanically to fragment the plaque in order to reduce...
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Penile traction therapy

The rationale behind the use of penile traction devices is that the gradual expansion of tissue by traction, also known as mechanotransduction, results in the formation of new connective tissue by cellular proliferation in several tissue models including bone, muscle and Dupuytren’s scar. However, penile traction has proved to have an insignificant role in the management of Peyronie’s disease.

CONCLUSION

As the aetiology of Peyronie’s disease is not yet clearly understood, a cure has not been found. Therefore, surgical treatment when the acute phase of the disease has settled still remains the gold standard treatment. Surgery does not treat the condition but aims at guaranteeing that the penis is rigid and straight enough to allow sexual penetration. At the moment medical treatment still does not represent a serious alternative to surgery and may play a role only during the active phase of Peyronie’s disease, mainly to reduce pain and the inflammatory process.

KEY POINTS

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Declaration of interests: none

REFERENCES