

Clinical presentations of Peyronie's disease

JP Pryor^{1*} and DJ Ralph²

¹The Lister Hospital, Chelsea Bridge Road, London, UK; and ²Institute of Urology, London University, London, UK

Patients with Peyronie's disease usually present soon after the onset of the disease with penile pain and deformity when they develop an erection. They are middle-aged men and a palpable plaque is usually present. A good clinical history and examination are all that are necessary to manage most patients with Peyronie's disease. Further investigation is only required in those men with erectile dysfunction or where surgery is indicated.

International Journal of Impotence Research (2002) 14, 414–417. doi:10.1038/sj.ijir.3900877

Keywords: Peyronie's disease; penile pain; plaque; deformity

Clinical presentations

La Peyronie's disease is characterised by palpable nodules in the penis which may be associated with pain and deformity on erection and a variable degree of erectile dysfunction. This paper will discuss each of these symptoms together with conditions that may be associated with its causation.

Age distribution

Peyronie's is a disease of middle-age^{1–4} (Table 1) and 64% of men were aged 40–59 y and the age range was 18–80 y. In these series 22% of patients were under 40 y of age which is higher than the 8.2% of 231 men seen in Istanbul⁵ and the 10% in the Rochester study.⁶

Duration of the disease at presentation

Table 2 shows the duration of symptoms before presentation in two series.^{2,4} Most patients (41%) presented within the first 6 months of the disease process and in one series⁴ the earliest presentation was 3 weeks after a penile injury and the longest was 17.5 y in a man who had remarried.

The time taken before the man visits his doctor will depend upon the severity of the symptoms, the

functional impairment and cultural aspects of sexuality and seeking medical help.

First symptom

The order in which the symptoms occur is shown in Table 3. The first symptom to be noticed is usually a penile deformity and this occurred in 52% of men. The first presenting symptom was penile pain in 40% and a lump in 21% of men; 10 men had more than one presenting symptom.

Penile deformity

Penile deformity as shown in Table 4 is the most common (52%) first symptom of Peyronie's disease and was present in 94% of men.⁴ This figure is in keeping with the incidence of deformity found in other series which range from 50 to 91% of men.^{7–9} The bend is usually towards the left at first but by the time of presentation it is usually towards the belly (dorsal). The degree of curvature makes for difficulties in vaginal penetration as is shown in a series of patients undergoing a Nesbit operation to correct the deformity^{4,8,10} (Table 5). A ventral curvature makes for greater difficulty of penetration.

It is unusual for there to be any deformity of the flaccid penis. Some men complain of waisting of the penis at the site of the plaque and others of distal narrowing of the shaft. All these deformities are due to the loss of elasticity of the tunica albuginea due to the Peyronie's disease. In some men there may be complex curves in more than one direction: the shape of the erect penis being dependent on the extent of the Peyronie's plaques. The effect of the

*Correspondence: The Lister Hospital, Chelsea Bridge Road, London SW1W 8RH, UK.
E-mail: jpryor@andrology.co.uk

Table 1 The age distribution of Peyronie's disease

Age (y)	Polkey ¹ %	Chesney ² %	Chilton ³ %	Ralph ⁴ %	Overall %
< 20	0.6	0.4	1.5	0	1
20–29	8	7	9	0.8	7
30–39	14	12	17	6	14
40–49	24	30	30	18	27
50–59	35	41	33	43	37
60–69	16	10	9	27	13
> 69	3	—	—	6	1
Number	320	250	407	118	1095

Table 2 Duration of disease at the time of presentation

Duration (months)	Percentage		
	Chesney ²	Ralph ⁴	Overall
< 6	48	25	41
6–11	26	38	30
12–23	18	19	18
24–36	3	11	5
36–47	—	4	3
48–59	3	—	1
> 60	2	3	2
Number	243	109	352

Table 3 The order of appearance of presenting symptoms based on a series of 118 men⁴

Order	Symptom (%)		
	Pain	Deformity	Lump
1st	39	50	18
2nd	14	30	26
3rd	2	10	6
Number	97	96	85

Table 4 Extent of erectile deformity and difficulty with intercourse in men undergoing the Nesbit procedure to correct the deformity

Penetration	Number	Deformity
Normal	10	56°
Possible	157	64°
Impossible	122	74°

Table 5 Location of plaque in the penis

Site (months)	Author		
	Bystrom ⁸	Hinman ¹⁰	Ralph ⁴
Dorsal	68%	67%	78%
Lateral	15%	21%	10.5%
Ventral	1%	6%	10%
Septum	16%	6%	—
Proximal third	41%	53%	35%
Middle third	26%	29%	36%
Distal third	26%	18%	19%
Mixed	7%	—	—
Number in series	106	94	118

plaque is to cause an overall shortening of the penis and yet in reality relatively few men complain of penile shortening at the time of presentation. It is worthwhile drawing their attention to the fact that shortening has occurred before they undergo any surgery.

Pain

Pain is the next most common symptom of Peyronie's disease, is seldom severe, and rare when the penis is flaccid. Pain usually occurs during erection in the inflammatory stage of the disease and the absence of pain is often taken as an indication that the disease has stabilised. Plaque biopsy in 12 men with painful Peyronie's disease showed an inflammatory infiltrate to be present in eight.¹¹

Pain rarely persists for more than 12 months^{12,13} and the incidence of pain varies between 20 and 70% in the literature^{4,7,9,10} and probably reflects the difference in the length of time that symptoms have been present at the time of presentation.

Lump or plaque

All patients have a plaque, or an area of fibrosis, and many patients are aware of it. Detection of the plaque on clinical examination is facilitated by stretching the penis with one hand and gently compressing the penile shaft between the fingers and thumb of the other hand. The location of the plaques are shown in Table 5. Most are situated dorsally but are evenly distributed throughout the length of the shaft. There is a tendency of the plaque to be first noticed in the distal third of the penis but then for the thickening to be felt progressively towards the base of the penis. It is rare to find a plaque in the perineum.¹⁴

The number of plaques vary but in most men only one plaque is felt (78% of 250 men² or 84% of 111 men⁴).

The consistency of the plaque varies between the fleshy plaque found in the early stages of the disease, the plaque becomes firmer as the disease stabilises, and hard, calcified or even ossified plaques are found late in the disease process. Most patients are anxious that the lump in the penis is not a malignant tumour and need to be reassured about this. Primary or secondary tumours are rare and are seldom confused with Peyronie's disease.

Erectile dysfunction

Erectile dysfunction in Peyronie's disease may be due to one or more of four factors.¹⁵ In the first place

the deformity may prevent intercourse but it has to be marked for this to occur. There is also the occasional patient in whom the pain is so troublesome that the man avoids having an erection and intercourse.

There is always a psychological element associated with Peyronie's disease and this gives rise to performance anxiety. It is seldom sufficient to prevent intercourse but does lead to a degree of erectile dysfunction.

The third cause for erectile dysfunction may result from a flail penis. This is the result of cavernous fibrosis which causes a localised absence of erection due to extensive, and often circumferential, fibrosis with distal flaccidity. The latter may also be due to interference with the distal blood supply.

The final category of erectile dysfunction may be the result of impaired arterial inflow or veno occlusive dysfunction due to muscle dysfunction or due to abnormal veins draining the plaque.^{15,16}

The further investigation of erectile dysfunction in Peyronie's disease is discussed elsewhere in this supplement.

Symptoms associated with the causes of Peyronie's disease

As the aetiology of the condition is still not fully understood and as the pathophysiology has been discussed elsewhere, this section will be brief.

It is likely that Peyronie's disease is multifactorial in origin and there would seem to be an underlying genetic factor in some patients. A family history of Peyronie's disease is present in approximately 2% of men^{3,4} but there is undoubtedly under-reporting. Paget¹⁷ commented on the association between Dupuytren's contracture, a disease with a definite genetic factor and Peyronie's disease and the association was found in 6–16% of men.^{2–4,8}

Penile trauma in the form of the classic *faux pas de coite* may result in Peyronie's disease,^{2,3,18} Lesser degrees of coital injury may cause scarring within the erectile tissue (cavernous fibrosis).^{3,18} Some authors¹⁰ believe that repeated minor trauma during coitus is sufficient to cause Peyronie's disease.

A history of urethral instrumentation was found in 9.5% of patients³ and whilst in some patients it may be the result of extravasation, stricture formation and ventral curvature, this is not the situation in most patients. Kelami¹⁹ drew attention to the urethral manipulation syndrome due to extravasation but in this condition there is often a complete resolution of the curvature.

The relationship of hypertension and atherosclerosis of Peyronie's disease is more difficult to quantify. This was discussed elsewhere.²⁰ It may be

Table 6 The results of untreated Peyronie's disease

Author	Symptom	n	Worse	Stable	Better	Resolved
Dahl ²¹		19		18	1	
Ashworth ²²		8	1		4	
Williams & Thomas ¹²		12		3	5	4
Bystrom <i>et al</i> ²³	Deformity	5		3	2	
	Plaque	7		2	5	
	Pain	7				7
Furlow <i>et al</i> ⁹	Deformity	23	3	6	9	3
	Plaque	26	1	7	5	10
	Pain	11			2	9
Gelbard <i>et al</i> ¹³		98	42	44	13	

that the vascular disease and Peyronie's disease are co-morbidities with aging.

Natural history of Peyronie's disease

There are few reports of untreated patients^{9,12,13,21–23} and the outcome is shown in Table 6. It is worth remembering that some patients are unaware that they are suffering from Peyronie's disease. In 1969, Smith²⁴ found histological evidence of Peyronie's disease in 23% of 100 autopsies and Michal *et al*²⁵ found that during phalloarteriography, 20% men had the typical deformity of Peyronie's disease of which the men were unaware of.

Conclusion

The clinical features of Peyronie's disease are well recognised. An accurate clinical history and careful examination of the man is essential in the management of Peyronie's disease and further investigation may only be necessary in the small proportion of men who need to undergo surgical treatment.

References

- 1 Polkey JP, Castle WM. Induratio penis plastica. *Urol Cutan Rev* 1928; **32**: 287–308.
- 2 Chesney J. Peyronie's disease. *Br J Urol* 1975; **47**: 209–218.
- 3 Chilton CP, Castle WM, Westwood CA, Pryor JP. Factors associated in the aetiology of Peyronie's disease. *Br J Urol* 1982; **54**: 748–750.
- 4 Ralph DJ. Pathogenesis of Peyronie's disease. MS Thesis, University of London, 1996.
- 5 Tefekli A *et al*. Peyronie's disease in men under age 40: characteristics and outcome. *Int J Impot Res* 2001; **13**: 18–23.
- 6 Lindsay MB *et al*. The incidence of Peyronie's disease in Rochester, Minnesota, 1959 through 1984. *J Urol* 1991; **146**: 1007–1009.
- 7 Burford CE, Glen JE, Burford EW. Fibrous cavernositis: further observations with 31 additional cases. *J Urol* 1943; **49**: 350–356.

- 8 Bystrom J, Rubio C. Induratio penis plastica (Peyronie's disease): clinical features and etiology. *Scand J Urol Nephrol* 1976; **10**: 12–20.
- 9 Furlow WL, Swenson HE, Lee RE. Peyronie's disease: a study of its natural history and treatment with orthovoltage radiotherapy. *J Urol* 1975; **114**: 69–71.
- 10 Hinman F. Etiologic factors in Peyronie's disease. *Urol Int* 1980; **35**: 407–413.
- 11 Ralph DJ, Brooks MJ, Pryor JP. The treatment of Peyronie's disease with tamoxifen. *Br J Urol* 1992; **70**: 648–651.
- 12 Williams JL, Thomas GG. The natural history of Peyronie's disease. *J Urol* 1970; **103**: 75–76.
- 13 Gelbard MK, Dorey F, James K. The natural history of Peyronie's disease. *J Urol* 1990; **144**: 1376–1379.
- 14 Andrews OH *et al.* Atypical Peyronie's Disease. *BJU Int* 1999; **84**: 537–538.
- 15 Pryor JP. Peyronie's disease and impotence. *Acta Urol Belg* 1988; **56**: 317–321.
- 16 Gasior BL *et al.* Plaque associated corporal veno occlusive dysfunction in idiopathic Peyronie's disease: a pharmacocavernosometric and pharmacocavernosographic study. *World J Urol* 1990; **8**: 90–96.
- 17 Murphy LJT. *History of urology part II*, Chapter 14. Charles Thomas: Springfield Illinois, 1972; p 486.
- 18 Pryor JP, Hill JT, Packham DA, Yates Bell AJ. Penile injuries with particular reference to the erectile tissue. *Br J Urol* 1981; **53**: 42–46.
- 19 Kelami A. Urethral manipulation syndrome. *Urol Int* 1984; **39**: 352–354.
- 20 Pryor JP. Peyronie's disease. In: Hendry WF, ed. *Recent advances in urology*, Volume 4. Churchill Livingstone: London, 1987, pp 245–261.
- 21 Dahl O. The treatment of plastic induration of the penis. *Acta Radiol* 1954; **41**: 290.
- 22 Ashworth A. Peyronie's disease. *Proc R Soc Med* 1960; **53**: 692–694.
- 23 Bystrom J *et al.* Induratio penis plastica (Peyronie's disease). *Scand J Urol Nephrol* 1972; **6**: 1–5.
- 24 Smith BH. Subclinical Peyronie's disease. *Am J Clin Path* 1969; **52**: 385–390.
- 25 Michal V, Posipichal J, Blazkova J. Arteriography of the internal pudendal arteries and passive erection. In: Zorogniotti AW, Rossi G, eds. *Vasculogenic impotence*. Charles Thomas: Springfield Illinois, 1980; pp 169–179.