constant finding and should not be regarded as specific concomitants always present (Slater & Cowie, 1971). Difficulty in establishing relationship with others, timidity, and a tendency to be withdrawn have been noted in Klinefelter's syndrome, and attention has been drawn to sudden outbursts of aggression against the background of a generally passive and apathetic personality in males with the XYY karyotype. The variability of these traits in Klinefelter and XYY males calls into question the validity of their correlation with supernumerary X or Y chromosomes, but in the present patient his timidity, tendency to be socially withdrawn, generally passive demeanour and sudden outbursts of aggression were marked features.

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References

BRAY, P. & JOSEPHINE, A. (1963) An XXXYY sex chromosome anomaly. Report of a mentally deficient male. *Journal of American Medical Association*, **184**, 179–182.

ELLIS, J. R., MILLER, O. J., PENROSE, L. S. & SCOTT, G. E. B. (1961) Male with XXYY chromosomes. *Annals of Human Genetics*, **25**, 145–151.

LECLUSE-VAN DER BILT, F. A., HAGEMIEJER, A., SMIT, E. M. E., VISSER, H. K. A. & VAANDGRAGER, G. J. (1974) An infant with an XXXYY karyotype. *Clinical Genetics*, **5**, 263–270.

SALAMANCA-GOMEZ, F., CORTES, R., SANCHEZ, J. & ARMENDARES, S. (1981) Brief clinical report: A 49, XXXYY male. *American Journal of Medical Genetics*, **10**, 351–355.

SLATER, E. & COWIE, V. (1971) *The Genetics of Mental Disorder. Oxford: Oxford University Press.*

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Koro—A Psychophysiological Dysfunction?

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Koro or Su-Yang is a clinical syndrome characterised by the conviction that the penis is shrinking into the abdomen, and that if this is allowed to happen, it will result in death. There is associated panic, and preventive manoeuvres are instituted (Yap, 1951).

It was originally described as a culture-bound syndrome (Yap, 1951; Rin 1965), occurring mainly in the Far East in people of Chinese or Malay extraction. However, there have been a total of 17 cases reported in non-Chinese or Malay people, 15 of which were reviewed recently by Berrios & Morley (1984).

The central feature is the conviction that the penis is shrinking and this would amount to a delusion if it could be demonstrated that the grounds on which the belief was founded were false.

We wish to report a case which meets the criteria for the Koro syndrome, in which we conducted a penile plethysmographic study to validate the authenticity of his experience of penile shinkage. We are

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not aware of any other report in which such a study was carried out.

Case Study

GC, a 56 year-old man, initially presented in May 1975 with a six year history of recurrent shrinkage of his penis. The first episode occurred suddenly in 1969, whilst he was out cycling on a cold day; he had experienced a strange sensation in the perineum, and when he stopped to examine his penis, he was convinced that it had shrunk considerably. He had irregular recurrence of this "penile shrinkage" over the years, each episode lasting about 24–48 hours. The shrinkage was associated with the fear that his penis would disappear completely and that it was the sign of a serious illness. However, he never believed that it would prove fatal.

The episode provoked intense panic, during which he became restless and agitated; on one occasion, his wife hung onto his penis in order as he thought to prevent its total disappearance. The episodes were related to stressful situations such as holidays, difficulties at work, and entertaining at home.

He was born and raised on Tyneside and was an only child, whose mother committed suicide when he was 21 years-old; his father died 18 months later, and he perceived these parental deaths as particularly traumatic. He had been married for 26 years, and there were no children by choice. His pre-morbid personality was characterised by obsessional preoccupation with detail and an excessive concern for order and routine.

He was admitted in January 1984 when, in addition to a severe recurrence of his conviction that his penis was shrinking, there was also evidence of a depressive disorder with endogenous features. This was his first documented depressive episode, and its onset was dated to June 1983. The penile shrinkage had occurred over many years, without any associated depressed mood, and appeared to be independent of his depression. During this admission, his physical investigations, which included a Dexamethasone Suppression Test, were all within normal limits. The result of the penile plethysmography is reported below.

The penile complaint responded best to a combination of propranolol and thioridazine. It is of interest that lofepramine accentuated the severity of this complaint but the depressive disorder responded favourably to dothiepin. He has continued to be followed-up in the out-patient clinic.

Psychophysiological Study

Changes in penile circumference were recorded while the patient imagined shrinkage conditions, sexually stimulating images, and neutral stimuli. Recording was carried out using a mercury strain gauge, a Parks Plethysmograph (model 270), and a Wanatabe 4-Channel recorder. The DC amplifier on the pen was set at a gain of 0.2 volts/cm (later changed to 0.5 volts) and the paper speed was 30 mm/minute. The patient had, without prompting, shown his penis to the psychologist on two occasions, and he was not reluctant to carry out the experimental procedure. He was asked to put the strain guage on himself and stay fully clothed for the rest of the session. For the first ten minutes, he was encouraged to talk generally, whilst the balanced controls of the Plethysmograph was adjusted so that the pen stayed near the centre of the recording chart. This was equivalent to a penile circumference at 11.3 cm.

Whilst talking about sexual fantasies, he showed rapid fluctuations of penile circumference above the baseline (Fig. 1), which was indicative of an erection. The greatest increase was caused by voyeuristic fantasies; he was aware of having a partial erection whilst describing these.

Whilst describing an occasion when he was out cycling in cold weather and had experienced his penis shrinking, the plethysmograph recording showed fluctuations in penile circumference below the baseline (Fig. 2). He was aware of this as an experience of penile shrinkage.

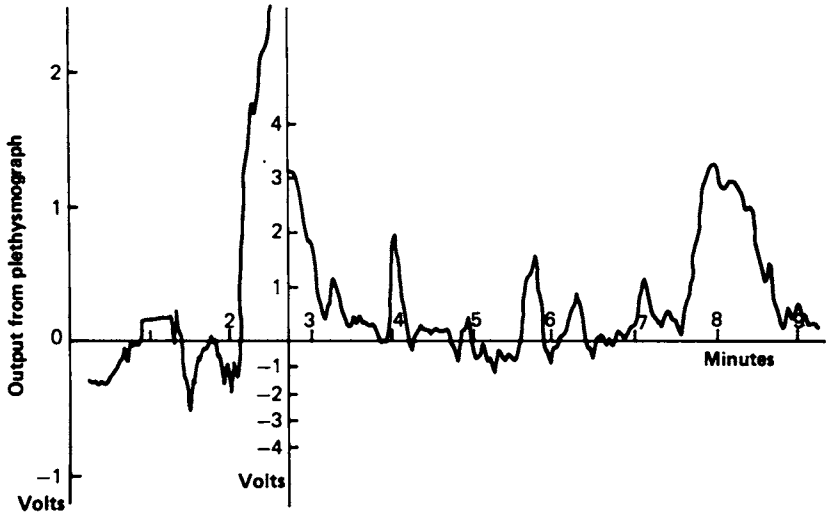


FIG. 1 Penile plethysmograph G.C. 17.1.1984 sexual fantasies.

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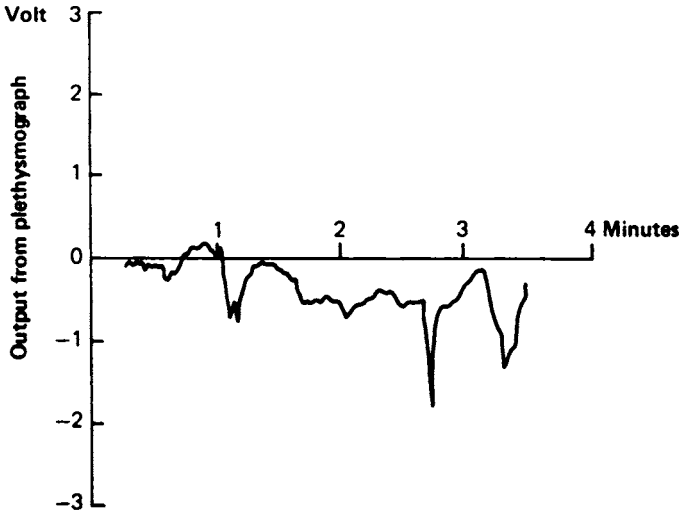


FIG. 2 Penile plethysmograph G.C. 17.1.1984 Cold fantasies.

Discussion

We have demonstrated in this case that the conviction of penile shrinkage corresponds with true physiological change in penile circumference below a baseline. This change is induced by specific imagery and therefore indicates that his conviction is not a delusion.

There are two possible explanations of our findings: Either this patient has dysfunctional autonomic control of his penile size, leading to more frequent or marked diminution in his penile size than would be normal, or, the changes in his penile size are normal, but his awareness is heightened by personal factors, such as obsessional self-scrutiny or sexual conflicts.

In the absence of normative data on changes in penile size in the normal male, we cannot reach any conclusions on the explanation in this particular case. It is not justifiable to extrapolate our findings to all cases which present with Koro, but further studies of this kind may increase our understanding of this condition.

References

BERRIOS, G. E. & MORLEY, S. J. (1984) Koro-like symptom in a non-Chinese Subject. *British Journal of Psychiatry*, **145**, 331–334.

RIN, H. (1965) A study of the aetiology of Koro in respect to the Chinese concept of illness. *International Journal of Social Psychiatry*, **11**, 7–15.

YAP, P. M. (1951) Mental disorders peculiar to certain cultures: A survey of comparative psychiatry. *The Journal of Mental Science*, **97**, 313–327.

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