CHAPTER 14

# A Surgeon's View of Enuresis

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The psycho-social aspects of enuresis have been extensively studied, and there are numerous authoritative reports in the literature describing the results of surveys orientated in this direction. Perhaps because of this apparent bias, it is unusual for children suffering from enuresis to be referred to the surgeon, even if he happens to be a paediatric urologist. Moreover, it is unusual for the surgeon to encourage his colleagues to refer such cases to him, because, as a rule, he does not consider that they fall within his purview.

One of the major difficulties from the clinician's point of view, when confronted with a child apparently suffering from enuresis, is to weigh up the possibilities of an organic urinary tract lesion being present, and to decide whether or not to subject the child to the full range of urinary tract investigations. Much guidance can be obtained from the history and a full physical examination, and it is not necessary to describe the salient features of this aspect of the problem here. The characteristic symptoms which distinguish the ectopic ureter are, for example, familiar.

It is assumed that the prevalence of organic abnormalities in the urinary tract is no greater in children with true enuresis than in the general population, and that if such a combination of organic abnormalities of the urinary tract and true enuresis does occur it is coincidental. However, these assumptions can only be proved by performing a complete radiological and endoscopic examination of the urinary tract in a series of enuretics. The data so far provided in reports of such studies are of little value, because the cases subjected to investigation have not been carefully selected. Many have not been true enuretics, but children with incontinence or symptomatic wetting. Moreover, these studies have not provided any clear-cut definitions of what is and what is not an abnormality. It is hardly surprising that the conclusions arrived at have been at variance.

A good example is the study carried out by Fisher and Forsythe (1954) on 135 enuretic children aged five years and over. As many as 61 of these children were reported as having abnormalities in the bladder outflow tract, a highly significant figure until the abnormalities are examined in detail. For example, the nine boys and three girls with 'neurogenic disorders of the bladder' did not apparently have any neurological signs, and their symptoms were similar to those of chronic urinary infection. Other abnormalities described include the 'wide bladder neck anomaly' and 'congenital hypertrophy of the bladder neck', both of which have been shown more recently by Scott *et al.* (1966*a* and *b*) and Clayton *et al.* (1966) to be variations of the normal urethrographic appearances during different phases of micturition. Also mentioned by Fisher and Forsythe (1954) were 25 boys with posterior urethral valves, which is a high incidence of what is regarded by most paediatric urologists

to be a comparatively rare condition. The radiographic illustrations in the article would not now be interpreted as abnormal. Two boys had severe meatal stenosis, which is a potent cause of difficulty with micturition, and a further two boys and two girls had small capacity bladders, a condition now regarded as part of the enuresis syndrome. Indeed, the only genuine abnormalities in the urinary tracts of this series of children appeared to be two cases of ureteric reflux.

Perhaps it is unfair to select one contribution for such analysis, but this is done merely to illustrate the tendency to ascribe somewhat nebulous and ill-defined conditions to the urinary tracts of children with enuresis. The danger is that misguided attempts may be made to treat these conditions by urethral instrumentation, or even by open operation, with consequent detriment to both the child's psychological well-being and his urinary tract. However, this does not mean that all enuretic children have normal urinary tracts, but rather that enuresis and organic abnormalities of the urinary tract can co-exist.

There are certain fairly well-defined modes by which organic disease in the urinary tract presents. Sometimes there is pain in the renal area or haematuria in a child who has no other symptoms. More commonly, organic disease comes to light because the child develops a urinary infection, and it is the symptoms of this condition which are so easily confused with those of enuresis.

When enuresis is a consequence of organic disease, it is usually of the 'secondary' type (*i.e.* bedwetting which starts after a period of being dry at night). But there are many causes of secondary enuresis other than organic urinary tract disease, and, unless the urine is examined by the proper methods at some time during the diagnostic appraisal, organic lesions will be missed with, in some instances, disastrous results. In short, an enuretic child may develop a urinary infection, just as a child with urinary infection may present with enuresis.

Once the diagnosis of urinary infection is established, the enuresis must take a 'back seat' while the underlying causes of the infection are sought in the child's urinary tract. Bedwetting, with and without other forms of wetting, occurs so commonly in children with organic disease in the urinary tract that it is impossible to distinguish when the bedwetting is related to the organic disease and when it is ordinary enuresis 'without obvious organic cause'.

Over fifty per cent of children with a proven urinary infection are found to have anatomical or functional defects in their urinary tracts, and this includes anything from valves in the urethra to duplex kidneys. In such cases, treatment is primarily directed towards eradicating the infection and correcting the defects in the urinary tract, often by surgery. At the same time it is hoped that, as a by-product, there will also be an improvement in the wetting. Although this does occur in some cases, there are a great many in which it does not, and the child continues to wet his or her bed, despite efficient control of the urinary infection and effective surgical improvement in urinary tract function. It is not easy to explain this state of affairs to the parents, and some are unconvinced that the operations to which their children have been subjected are successful. When it is suspected that a child with organic urinary tract disease also has enuresis, it is advisable to warn parents that the medical and surgical treatment which is deemed necessary will probably not, in the end, make

any difference to this complaint. Either it will disappear in the course of time, or specific forms of treatment will need to be given.

Occasionally, enuresis may start after the surgical treatment programme has been completed. The emotional disturbance resulting from hospitalisation and separation from parents is sometimes the cause, but surgical treatment of lesions in the lower urinary tract, for example posterior urethral valves, may also be responsible. Posterior urethral valves produce secondary changes in the posterior urethra, bladder neck and detrusor muscle, such that sphincter control is inefficient, and the sudden lowering of urethral resistance consequent upon removing the valves permits the bladder to leak. Usually, there is more wetting during the day than the night, the wetting being characteristically either a persistent dampness or a tendency to precipitancy.

Fortunately, the vogue for transurethral or open surgical 'revisions' of the bladder neck has now largely disappeared, even in the United States, since most surgeons now regard bladder neck obstruction as a myth. Thus fewer children are subjected to this potential hazard, which at best had no influence on their urinary tract disease, and at worst rendered females incontinent and males sterile. This is not to condemn the operation completely, because there are rare instances when it is indicated and can be useful. These are mostly in children with neurogenic bladders, or in cases of persistent post-valvular detrusor hypertrophy causing chronic retention.

The child with enuresis due to chronic renal failure also usually ends up in the hands of the paediatric urologist. In such a child the bedwetting may initially be true enuresis, but is more likely to result from an unrecognised urinary infection. As time goes by, day-time wetting occurs and it becomes clear that the child is suffering from polyuria rather than true enuresis. Investigation of the urinary tract at this stage reveals severe renal damage.

**Conclusions**

In summary, true enuresis may occur coincidentally with organic urinary tract disease, in which case treatment of the disease does not influence the progress of the enuresis. When wetting is a symptom of disease, it should be possible to detect this by the usual clinical and laboratory methods of examination. In most instances a urinary infection will be found, and further investigation will reveal underlying 'surgical' abnormalities in more than half the cases. Treatment of the infection and the abnormalities should rid the child of all its symptoms, including the enuresis.

There are no well-defined organic lesions responsible for *primary* enuresis, so the treatment of this condition does not fall within the boundaries of surgery.

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