Childhood urinary tract infection

Sir,

I write with reference to the paper by Dighe and Grace (June *Journal,* p.324) along with the recent correspondence from Dr Houston (September *Journal,* p.494). About four years ago I started a follow-up study of children in our practice who had urinary tract infections and I intend to continue this study in the future. In view of Dr Houston's letter I felt obliged to write to you with the figures that I have to date on the group of children that I have been following.

The most obvious comment from Table 1 is that the numbers are small but in due course I hope to have sufficient numbers to make more definite statements. As regards Smellie's figure of 50 per cent abnormalities on radiological investigations,[1] it can be seen that for the boys in my group four out of 26 children referred had positive findings giving a maximum percentage of 15 per cent, although in only two cases did this have any effect on management. As regards the girls, 17 out of 78 had positive findings giving a maximum percentage of 22 per cent, although again only half that number had findings that brought about alteration in their management, whether surgery or long-term antibiotics. Interestingly, there is a subgroup of nine girls in the group with negative radiological findings who show recurrent positive midstream urine cultures, these cultures being associated with symptoms. The five girls with positive midstream urines who were not investigated were picked up at an earlier date when our practice policy was to refer only after a second infection. It is of note that seven children — six girls and one boy — who were referred to various consultants in our local hospitals and had clinical histories of urine infections, that is definite symptoms, were not investigated further. Blood was found on testing the urine with Haemocombi stix and the symptoms resolved after antibiotic treatment, but as these children did not have positive cultures on midstream urine specimens they were not felt to require further investigation. In consequence we no longer refer children with clinical urinary tract infections not supported by positive midstream urine specimens unless the symptoms have been very severe, because otherwise it would seem to be a waste of time for parents as well as outpatient departments.

We are fortunate in our area that the usual radiological screening is either by ultrasound and/or renalisotope scan with a micturating cystourethrogram as a further investigation if required. This obviously leads to our children being exposed to much less radiation, but we appreciate that these facilities are not available in every area. In this context it is interesting that a baby boy aged one year was recently found to have normal ultrasound and dimercapto succinic acid scan findings but a micturating cystourethrogram showed marked trabeculation of the bladder and a large post-micturating bladder residue. He was cystoscoped by the surgeons and is said by the mother to have had better urine flow since then. Not surprisingly, a repeat micturating cystourethrogram still shows trabeculation of the bladder and multiple diverticulae. This child is also of interest in that his urine infection was discovered in routine screening in one of our local hospitals while he was under their care with croup.

Three other children in our study required surgical treatment. One of these presented with influenza-like illness at the age of seven years with no previous history of urinary problems. The urine was sent off as a precaution and, when it was found to be positive, the girl was investigated and found to have severe left hydronephrosis and subsequently underwent pyeloplasty. The two other children, a boy with posterior urethral valves and a girl with gross reflux affecting both

Table 1. Survey of urinary tract infection in children.

Boys (n=39)			
Referred with negative radiological findings	22	*Positive radiological findings*	
Referred with positive radiological findings	4	Marked trabeculation and post micturition bladder residue	1
Clinical UTI MSU not positive	9	Duplex systems	2
Referred but no investigations undertaken	1	Posterior urethral valves	1
Results pending	2		
Girls (n=105)			
Referred with negative radiological findings	61	*Positive radiological findings*	
Referred with positive radiological findings	17	Hypertension right chronic pyelonephritis bilaterial reflux nephropathy, congenital small kidney and hypoplastic renal artery	1
Positive MSU's not referred	5	Gross scarring of left kidney, grade 2 reflux, mild scarring right kidney, grade 3 reflux of ureters	1
Clinical UTI's not referred	11	Bilateral reflux grade 2–3	3
Referred but no investigations undertaken	6	(One became normal between October 1980 and July 1982 while the second child showed the same radiological features of reflux April 1982 and Nov 1983. The third child had a normal scan in Nov 1984 having had the first positive scan on 20 Sept 1982.)	
Renal sarcoidosis	1	Severe left hydronephrosis pyeloplasty	1
Results pending	1	Duplex systems	3
		Grade 1/2 reflux with scarring of right kidney May 1974, normal scan 1976	1
		Bilateral cortical scarring	2
		Grade 1 reflux	4
		Grade 2 reflux of the left renal system	1
		Hydrocephalus/spina bifida with cortical scarring of kidneys	1

MSU = mid-stream urine sample; UTI = urinary tract infection.

kidneys, both had significant symptoms of repeated urinary infections.

One child in the study who presented with headaches at the age of 13 years was found to have hypertension and a previous history of clinical urinary tract infection at the age of eight years, with a further mild infection at the age of nine years with a positive midstream urine culture. The subsequent investigations revealed that she had chronic pyelonephritis and bilateral reflux nephropathy.

If one is not going to investigate all children with a first urine infection, then it would be necessary to have a system for deciding which children merited investigation. In some situations this would be obvious, while in other situations it would not be so clear. Certainly if it was felt that an upper age limit was indicated, the seven-year-old girl who underwent pyeloplasty would not have been picked up. Similarly, if the 13-year-old girl mentioned above had been referred at the time of urine infection rather than waiting for subsequent presentation with hypertension, her medical problems might not have been as severe. The recommendations of Professor Chantler in a recent *Medical Dialogue* seem very sensible.[2]

The lesson which our practice has learned over the years is that it is wise to have a high index of suspicion and to send off urine specimens whenever there is the slightest doubt. Time and time again children of all ages have had little in the way of specific urinary symptoms, but have still been found to have definite urine infections. This is illustrated by the one-year-old and seven-year-old mentioned above who needed surgical treatment. From our figures we expect about 30 children a year to present with their first urinary tract infection in our practice. Generally one of these will require long-term antibiotic treatment and one will require surgical treatment to some degree. Our practice population is 12 600 and we have 150 births a year.

We also feel that it is most important to measure blood pressure in any child with urine infection and/or headache, especially in view of the child mentioned earlier who was found to have renal failure having presented with headache and past history of urine infection.

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Suckler's wrist

Sir,

Repetitive strain injury is well known[1] as causing tenosynovitis of the thumb extensors and abductors. This syndrome — de Quervain's tenosynovitis — is seen, for example, in players of racquet sports. But I am not aware of it having been described in breast feeding mothers, and have not come across it before.

The recommended position of the mother's hand while centering the child on the nipple, is to have the abducted thumb above the nipple and the rest of the fingers supporting the breast from below.[2] This is certainly a natural position, and it is easy to support the baby's head with the other hand. So it is not surprising that since my baby was a week old, I have experienced pain on wrist movement, first on the right side where the infant showed reluctance to fix, and had to be supported more firmly. A friend and colleague, who is a midwife, also with a small baby, remarks that she has suffered similarly, and has also not encountered the problem in her patients.

The first line treatment is rest, but will the working day be long enough? As the baby is only three months old, I will still be feeding her when I can, and it is very difficult to do that without abducting or extending the thumb. And would gentle exercise during the antenatal period have helped prevent the condition?

I would be interested to know if this is in fact a common condition.

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Leprosy in the UK

Sir,

Following my recent experience in a leprosy hospital in southern India, I feel bound to share with you my concern that this much under-publicized disease is one which any of us may come across while practising medicine in this country. Leprosy was endemic here until this century; the last government leprosy hospital was closed in 1968, but there is still a charitable institution (the Homes of St Giles, near Chelmsford, now unfortunately threatened with closure) where severely disabled leprosy sufferers are cared for and rehabilitated.

At present there are over 340 leprosy patients in the UK almost all of whom are from developing countries. More such patients are likely to trickle into the country (at an estimated rate of 25 cases per year) or patients may develop symptoms following a prolonged incubation period (occasionally up to 20 years). Of course the English who have lived abroad, and even short term travellers, may be affected.

Many of the patients I have met in England are diagnostic disasters, having been investigated for years at great expense, their disease progressing all the time. Had the possibility of leprosy been considered, a diagnosis could have been made in a few minutes. Hypopigmented (or, in Caucasians, erythematous) anaesthetic anhydrous skin patches are pathognomonic of tuberculoid or borderline leprosy. In any form of leprosy a hypertrophic peripheral neuropathy is present with tenderness of the affected nerves. Less commonly, patients with leprosy may present with an opthalmological problem with watering eye, an ulcerated cornea or photophobia; an ear, nose and throat problem with nasal stuffiness and recurrent epistaxis; a chest problem (with the subsequent discovery of acid-fast bacilli in the trachea, possibly leading to the mistaken diagnosis of tuberculosis); a neurological problem such as an isolated paresis, weakness or numbness; or a general surgical problem such as cystic swelling (a nerve abscess) or a non-healing ulcer.

Please bear leprosy in mind as a possibility when symptoms do not fit into a familiar pattern, so that treatment can start and the tragic development of neurological deficits can be avoided.

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