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Lesson of the Week

Late complications of undetected urethral stricture after cardiac surgery in a child

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Urethritis in a child after perioperative catheterisation may lead to urethral strictures, which may present late.

Urethral strictures in children after cardiac surgery have been reported from this centre.¹ Urinary catheters are used in the perioperative period for monitoring urinary output. The incidence of stricture formation was estimated as 2.7%. Similar findings have been recorded in adults.²⁻⁴ The children who developed strictures had symptoms of urethritis after removal of the catheter. Strictures were detected early and responded successfully to urethral dilatation or urethrotomy with no long term complications.¹

Since the original report¹ we had seen no further cases until the following child presented with renal impairment.

Case report

A 13 year old boy presented to his general practitioner with a history of anorexia, vomiting, and weight loss. At the age of 4 years he had had a repair of a congenital ventricular septal defect and prolapsing aortic valve cusp. A urethral catheter had been inserted for monitoring urinary output and left in situ for three days postoperatively. The child had complained of dysuria and strangury after removal of the catheter. These symptoms had settled after a short course of antibiotics. Two months later he had had another episode of dysuria, which resolved spontaneously. He had not complained of any further urinary tract symptoms during his subsequent follow up at the cardiac clinic.

At consultation at the surgical outpatient clinic at our centre direct questioning of the patient elicited that he had difficulty in passing urine and that the urinary stream was poor. Examination showed a pale and lethargic child with a urinary bladder palpable to the level of the umbilicus. Results of investigations were a haemoglobin concentration of 103 g/l, blood urea concentration 23.3 mmol/l, plasma creatinine concentration 226 µmol/l, creatinine clearance 27 ml/min, and chromium EDTA clearance 22.0 ml/min. Renal ultrasonography showed a grossly distended bladder, bilateral hydronephrosis, and hydroureter. A micraturating cystogram showed a stricture of the

membranous urethra and dilatation of the posterior urethra. Cystoscopy confirmed the presence of a short stricture, which responded initially to urethral dilatations. After six months he was passing urine satisfactorily and chromium EDTA clearance was 65 ml/min. At nine months, however, the patient reluctantly declared further dysuria, loin pain, and poor urine stream. Creatinine clearance had fallen to 18 ml/min and renal ultrasonography showed a dilated renal tract. Because of the deterioration of renal function vesicostomy was performed. Renal function began to improve, and when last seen his creatinine clearance was 50 ml/min.

Comment

Urethral strictures after cardiac surgery occur mainly in adults but rarely in children. Poor tissue perfusion concomitant with serious congenital cardiac anomalies together with secondary urinary infection in the presence of a urethral catheter are significant contributory factors. Although the incidence of urethral strictures is small, if they go undetected they may lead to serious deterioration of renal function.

Our patient did not have urine flowmetry as he was in retention with overflow incontinence at the time of admission. Urine flowmetry is considered an important part of the management of voiding disorders. Flowmetry must be performed in any child with a voiding problem after catheterisation. The free flow curve gives good clues to the underlying problems. A normal free flow curve and no residual urine exclude a severe voiding abnormality. An intermittent curve due to an irregular or interrupted stream may occur in cases of voiding by abdominal straining or in cases of functional voiding disorders.⁵ In cases of an abnormal free flow curve or when there is a large residual urine volume full urodynamic assessment should be performed.⁶

Young boys may be rather shy in mentioning symptoms related to their genitals. This child, despite having great difficulty on micturition, did not mention the problem to his parents or to his general practitioner

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and only reluctantly admitted to a recurrence of symptoms at outpatient follow up.

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Human listeriosis and paté: a possible association

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Abstract

Objectives—To study trends in human listeriosis and determine possible sources of infection.

Design—Descriptive analysis of laboratory reports of human listeriosis together with a survey of subtypes of *Listeria monocytogenes* isolated from patients and foodstuffs and an interview survey of patients to obtain food histories.

Setting—United Kingdom and Republic of Ireland 1985 to 1990.

Results—There was a near doubling in the incidence of human listeriosis in England, Wales, and Northern Ireland between 1985 and mid-1989 followed by a sharp decline. The upsurge in cases was caused largely by two strains of *L. monocytogenes*, which accounted for 30-54% of the annual totals. These strains were less common before 1987 and after July 1989. A survey of paté in England and Wales in July 1989 showed that it frequently contained *L. monocytogenes*. A similar survey in July 1990 showed a reduction in the proportions of samples contaminated. In 1989 patés from a single plant (manufacturer Y) were more likely to be contaminated by *L. monocytogenes* and at higher levels than those from other producers. Most strains of *L. monocytogenes* recovered from manufacturer Y's paté in 1989 were indistinguishable from those responsible for the 1987-9 upsurge in human listeriosis and were uncommon among isolates from patés from other manufacturers and from a wide range of other foodstuffs. Patients infected with the types of *L. monocytogenes* found in paté were significantly more likely to have recently eaten paté than those affected by other strains. The start of the decline in numbers of cases of listeriosis coincided with government health warnings on paté consumption and the suspension of supplies from manufacturer Y.

Conclusions—Contamination of paté was a likely contributory cause of the increase in the incidence of listeriosis between 1987 and 1989.

Introduction

Listeriosis has caused considerable public health concern in recent years following a series of cases of foodborne infection and an increase in incidence in most industrialised countries, including the United Kingdom.¹ In May 1989, during the routine investigation by the Public Health Laboratory Service of a case of suspected food poisoning, paté taken from a patient's refrigerator was found to contain high levels of *Listeria monocytogenes*. This chance finding led to a local survey in south Wales during May and June 1989² and a government health warning to vulnerable groups on paté consumption.³ The results of the Welsh survey prompted a nationwide investigation by the PHLS to test the hypothesis that there was an association between human listeriosis and the consumption of contaminated paté.

Methods

Epidemiology—Surveillance of human listeriosis has been undertaken by the PHLS since the 1960s. The Communicable Disease Surveillance Centre receives reports of cases in England, Wales, and Northern Ireland through the national voluntary laboratory reporting scheme. Isolates of *L. monocytogenes* for confirmation of identity and subtyping are collected in the division of microbiological reagents and quality control from the United Kingdom and the Republic of Ireland. After mid-1988 patients identified by the surveillance scheme were interviewed by their doctor (or by a microbiologist or public health physician with the doctor's agreement) using a standard questionnaire to obtain a food history covering the three weeks before onset of the illness. Information specifically on the consumption of paté was sought after mid-1989.

Subtyping of *L. monocytogenes*—*L. monocytogenes* isolated from infected patients and a wide variety of foodstuffs (>1300 samples) were subtyped in the division of microbiological reagents and quality control using serotyping,^{4,5} phage typing,⁶ and DNA restriction fragment length analysis.⁶

Surveys of paté on sale in 1989 and 1990—In July 1989, 53 PHLS laboratories examined 1698 samples of paté (25 g) on sale to the public in England and Wales for the presence of *L. monocytogenes*. A similar survey was performed in July 1990, when 16 laboratories examined 626 samples. These surveys will be reported in more detail elsewhere.

Results

TRENDS IN HUMAN LISTERIOSIS

Fewer than 100 cases of listeriosis were reported annually in England, Wales, and Northern Ireland between 1967 and 1982.⁷ Numbers of cases then increased, at first slowly, to 115 in both 1983 and 1984, 149 in 1985,⁷ and 137 in 1986. A near doubling of cases then occurred to 259 in 1987, 291 in 1988, and 250 in 1989. Subsequently only 90 cases were reported up to the end of September 1990 compared with 228 in the same period in 1989.

Analysis of the seasonal pattern of listeriosis has shown a consistent increase in cases in the late summer to early autumn.⁸ Similar seasonal peaks occurred in 1986 and 1987, and there were also winter peaks in 1985 and 1987. In 1988, however, the winter and autumn peaks were absent. In 1989 the fall in the annual totals was caused by a sharp decline which occurred after a July peak (figure). In the first nine months of 1990 a seasonal pattern was absent (figure).

Changes also occurred in the distribution of clinical types of listeriosis. These changes were most pronounced in the proportions of infections during pregnancy and in neonates, which accounted for 38% of the total between 1983 and 1987, 42% in 1988, 52% in 1989, but only 22% in the first nine months of 1990.

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