Paediatric gonorrhoea: non-venereal epidemic in a household

ANONA L BLACKWELL* AND SUSANNAH J EYKYN†

From the *Academic Department of Genitourinary Medicine and the †Department of Microbiology, The United Medical and Dental Schools of Guy's and St Thomas's Hospitals, St Thomas's Campus, London

SUMMARY Household epidemics of gonorrhoea are relatively rare in the United Kingdom. We report a cluster of cases of gonococcal infection in four children living in one household. The cases show the importance of full screening, including pharyngeal cultures, of all family members when paediatric gonorrhoea is diagnosed. Our cases also suggest that both boys and girls should be screened for gonorrhoea when gonococcal infection is found in an adult member of the household.

Introduction

We report a cluster of cases of gonococcal infection in four children living in one household. The cases show the importance of full screening, including pharyngeal cultures, of all family members when paediatric gonorrhoea is diagnosed.

Case reports

CASE 1

A 7 year old girl was admitted to St Thomas's Hospital for investigation of a vaginal discharge of 24 hours' duration. The discharge had started two days after the child had spent a weekend away from home with an 18 year old woman who was a family friend. No history of the introduction of a foreign body or sexual abuse could be elicited, but the child admitted to sharing flannels and towels during her weekend visit.

Examination showed vulvovaginal erythema and a copious yellow discharge, which on Gram staining contained numerous polymorphonuclear leucocytes and Gram negative intracellular diplococci. *Neisseria gonorrhoeae* was isolated on culture, and treatment with co-trimoxazole (the patient was allergic to penicillin) resulted in rapid cure. Contact tracing led to

the discovery of three other children with gonorrhoea in the same household.

CASE 2

An 8 year old girl, a family friend and household contact of case 1, developed symptoms and signs of vulvovaginitis 48 hours after case 1. Culture of the vaginal secretions were positive for *N gonorrhoeae* and, though treatment with penicillin initially resulted in negative cultures from the vulvovaginal area, urethra, rectum, and throat, follow up investigations nine days after treatment showed asymptomatic pharyngeal gonorrhoea. Subsequent treatment with co-trimoxazole eradicated the organism.

CASE 3

The 4 year old brother of case 2 was admitted to another hospital with gonococcal ophthalmia three days after case 1 had been admitted to St Thomas's.

CASE 4

An asymptomatic 6 year old brother of cases 2 and 3 was known to have sucked their communal flannel, and routine screening of his urethra and throat showed pharyngeal gonococcal infection.

OTHER MEMBERS OF THE HOUSEHOLD

Two other children, boys aged 9 and 11 (half brothers of case 1), were screened for urethral and pharyngeal gonorrhoea but gave negative results. The three adult members of the household, the parents of case 1 and the father of cases 2, 3, and 4, were also screened and

Address for reprints: Dr S Eykyn, Department of Microbiology, St Thomas's Hospital, London SE1 7EH

Accepted for publication 13 February 1986

gave negative results. The mother of cases 2, 3, and 4 was not in contact with her children and the presumed source of the infection, the 18 year old family friend, refused to attend for screening.

Discussion

The prepubertal vagina, with its thin atrophic epithelium and relatively alkaline secretions, is thought to be predisposed to gonococcal vulvovaginitis. The cases reported here were linked epidemiologically and, as the gonococcal isolates were the same proline requiring auxotype and had identical sensitivities to penicillin (minimum inhibitory concentration 0.08 mg/l), the children were probably infected from the same adult source. The gonococcus appears to have spread from the vulva of case 1 to the vulva and throat of case 2 and to the eye of case 3 within three days.

No history or signs of sexual abuse could be found in any of the children, and we concluded that spread had occurred via communal use of flannels or towels. A similar cluster of cases of paediatric gonorrhoea within a single family was reported by Tunnessen and Jastremski, who also thought that transmission in their cases was probably non-venereal and related to the sharing of beds or towels.¹ In a retrospective study of 14 cases of paediatric gonorrhoea, Shore and Winkelstein concluded that sexual abuse had occurred in only three cases,² but in contrast an investigation of 31 cases of paediatric gonorrhoea by Ingram *et al* found sexual abuse in 20 of the 31 children.³

Asymptomatic pharyngeal gonorrhoea in adults is well recognised,⁴ but the few reports of paediatric

pharyngeal infection suggest that it may present in children as acute tonsillitis or pharyngitis⁴⁵ Both our patients with pharyngeal gonorrhoea were asymptomatic and clinically well. Only two of our four patients were initially screened for pharyngeal gonorrhoea and both were infected, which may suggest that the throat is commonly affected in cases of paediatric gonorrhoea. Our findings agree with those of Ingram *et al*, who found asymptomatic pharyngeal gonococcal infection in three (19%) of 16 girls (aged 1-12 years) who had coexistent gonococcal vulvovaginitis.³

Pharyngeal cultures should be performed routinely on prepubescent household contacts of patients with gonorrhoea, particularly where living conditions are crowded and toilet requisites shared.

We thank Drs D Barlow and R Thin for permission to report these cases and Dr S Egglestone, Public Health Laboratory Service, Bristol, for auxotyping the gonococci.

References

1. Tunnessen WW, Jastremski M. Prepubescent gonococcal vulvovaginitis: a call for examination of all household members. *Clin Pediatr (Phila)* 1974;13:657-76.
2. Shore WB, Winkelstein JA. Nonvenereal transmission of gonococcal infections to children. *J Pediatr* 1973;79:661-3.
3. Ingram DL, White ST, Durfee MF, Pearson AW. Sexual contact in children with gonorrhoea. *Am J Dis Child* 1982;136:994-6.
4. Wiesner, Tronca E, Bonin P, Pedersen AH, Holmes KK. Clinical spectrum of pharyngeal gonococcal infection. *N Engl J Med* 1973;288:181-5.
5. Abbott SL. Gonococcal tonsillitis-pharyngitis in a 5 year old girl. *Pediatrics* 1973;52:287-9.