

Vaginal Discharge in Prepubertal Girls – A Strong Indicator of Sexual Abuse

I G S Cheah, MRCP, M S Kasim, MRCP, Paediatric Department, Paediatric Institute, Hospital Kuala Lumpur, 50586 Kuala Lumpur

Summary

The diagnosis of child sexual abuse is usually made from the child's disclosure, presence of sexually transmitted diseases and/or the presence of genital trauma. The purpose of our study was to evaluate the predictive value of vaginal discharge per se in indicating child sexual abuse. A five-year retrospective analysis was conducted in 1992 on all girls 12 years and below, who had presented with vaginal discharge. Sexual abuse assessment included investigations for sexually transmitted diseases (STD), parent and child interviews, physical examination and social worker's field assessment. Out of 55 girls with vaginal discharge, 32 had STD. Only 14 of these 32 girls gave a history of sexual abuse. Seven out of 16 girls in whom STD was not confirmed disclosed sexual abuse as well. Sexual abuse was ruled out in 16 cases. In conclusion, 71% (39/55) of the girls with vaginal discharge were victims of sexual abuse. Only 9 had abnormal genital findings. None of the girls had previously disclosed sexual abuse although one mother had witnessed such an event. Vaginal discharge is thus an important indication for further evaluation of sexual abuse, despite the absence of a positive history and normal physical examination.

Key Words: Vaginal discharge, Sexual abuse, Sexually transmitted diseases, Child

Introduction

Apart from the presence of sexually transmitted diseases (STD) and/or overt genital trauma, there are few objective indicators of sexual abuse in a child¹. Substantiated disclosure of sexual abuse has thus been the mainstay of diagnosis in the absence of these two objective indicators. Across international studies, only about half the sexual abuse victims disclosed their experiences to anyone². In Malaysia where there is a lack of awareness on the subject of sexual abuse, the disclosure rate is probably lower as the diagnosis of sexual abuse is considered shameful and disruptive to the family.

It was our impression that the presence of vaginal discharge was an important indicator of sexual abuse in our patients, even in the absence of documented STD in a child, the latter being a specific finding for

sexual abuse once vertical transmission has been excluded, accidental transmission being a rare occurrence^{3,4}. The purpose of our study was to evaluate the predictive value of vaginal discharge for the diagnosis of sexual abuse in a prepubertal child.

Method

A retrospective analysis was conducted in 1992 on all girls 12 years old and below, who had presented with vaginal discharge between the period January 1987 and December 1991. They were then subsequently referred to the Suspected Child Abuse and Neglect (SCAN) team for the evaluation of sexual abuse. The SCAN team is a multidisciplinary team involved in the assessment and management of suspected child abuse and neglect cases admitted to the Kuala Lumpur Hospital.

Assessment involved a team approach and included parent and patient interviews by the child psychiatrist and paediatrician, physical examination by the paediatrician, and field assessment by the social worker. In this study, disclosure was defined as a statement by a child to a professional about sexual interference by a named perpetrator. A gynaecologist or forensic pathologist examined the genitalia. One or two swabs of either the vaginal introitus or vestibule was obtained. Further swabs were taken from other mucosal surface as indicated. No rectal or pharyngeal swabs had been taken. A gram film was made from each swab and the other swab culture on blood agar and Thayer-Martin agar. A non-treponemal test, Rapid plasma reagin (RPR), and Treponemal Haemagglutination (TPHA) tests were also sent. Direct immunofluorescence (DIF) for *Chlamydia trachomatis* were only sent for specimens taken after 1990 when the test became available.

Demographic particulars, interview findings pertaining to accounts given by the child, parents or perpetrators, physical findings and the identities of the most probable perpetrators were also noted.

Results

Among 129 cases referred for sexual abuse evaluation

to the SCAN team in that 5-year period, vaginal discharge was the main or only presenting complaint in 55 girls. Other associated symptoms were dysuria (6), pain in genitalia (5), vulval itchinness (2), conjunctival infection and purulent eye discharge (1), fever (2) and abdominal pain (1). Two patients displayed sexualized behaviour. None of the parents reported emotional or other behavioural problems. All of the caregivers had not considered the possibility of sexual abuse except in one case where the mother herself had witnessed the sexual contact between her 4-year-old daughter and 18-year-old nephew two days prior to admission. It was the presence of vaginal discharge that had prompted the mother to seek medical attention.

The findings of STD and sexual abuse are shown in Table I. Eighteen girls had positive isolates of *Neisseria gonorrhoea* from vaginal swab cultures, 11 of which were penicillinase-resistant strains. One of these girls also had a positive serological test for syphilis and another had symptomatic gonococcal conjunctivitis with growth of *N. gonorrhoea* from the eye swab. Six of these girls disclosed sexual abuse during the first interview and another 3 did so similarly but only on subsequent interviews. The families of the remaining 9 girls and the girls themselves denied the possibility of any sexual abuse.

Table I
Findings of STD and sexual abuse in girls with vaginal discharge

STD	Total no.	Sexual abuse yes	Disclosure no	Genital trauma	STD in perpetrators	No sexual abuse
N. gonorrhoea	18	9	9	4	2	0
C. trachomatis	2	0	1	0	0	1
Syphilis	2	0	2	1	0	0
Gram neg. intracellular diplococci	18	5*	7	4*	4*	6
No STD	16	7	0	1	0	9
Number	55	21	18	9	6	16

* Presumed gonococcal infection

NB: One girl had both syphilis and gonococcal infection

Gram staining of the vaginal discharge revealed gram positive diplococci in 18 girls. No growth was isolated from the vaginal swab cultures in these girls. Gonococcal infection was most likely in 12 of these girls, although unconfirmed, on the basis of disclosure of previous sexual contact (5), unexplained genital trauma (4), and the presence of STD in the likely perpetrators (4). In the last group, two of the mothers also had gonorrhoea. All these findings were mutually exclusive except for one girl who had disclosed penile penetration and had a hymenal tear. None of the girls had a history of neonatal ophthalmitis. One of them however did have congenital syphilis that had been treated in the neonatal period. The remaining 6 girls did not have any history suggestive of sexual abuse. One of them had a foreign body in her vagina.

Chlamydial trachomatis DIF was positive in 2 out of the 8 children screened in 1991. They were 2 and 10 years of age, and were asymptomatic with normal physical examination findings. Two children aged 9 and 10 respectively, had positive RPR and TPHA tests. One of them also had gonococcal infection as stated earlier; the other had a hymenal tear. Both were asymptomatic for syphilis. All of these 4 children and their families denied sexual abuse. There was no history of maternal infection. However, in view of the possibility of persistent carriage of perinatally acquired *C. trachomatis* in a 2-year-old child (see discussion), this child was not considered to have a STD.

Of these 32 girls with STD, 8 had hymenal tears; 2 of whom had inflammation of the vaginal introitus and another had associated bruising of her perineum. One other girl only had inflammation of her vaginal introitus. Genital examination was normal in the remaining 24 girls except for the presence of vaginal discharge.

STD was not confirmed in another group of 16 girls who had presented with vaginal discharge. Seven of these girls disclosed sexual abuse during the interview sessions. Only one of them had an abnormal physical examination, that being a hymenal tear.

Of the 21 cases with disclosures of sexual abuse, the nature of the abuse consisted of genital fondling (10), orogenital contact (2) and penile penetration (9). Three

of the girls with a history of penile penetration had intact hymens and normal physical examination.

The relationship of the person disclosed by the child to be the perpetrator or thought to be the most likely perpetrator by the SCAN team is shown in Table II. No perpetrators could be identified in 9 cases. There was a history of drug abuse in one perpetrator. None had a history of alcohol abuse. Fathers and uncles were the most frequent perpetrators. There was only one stranger.

The age distribution of the girls with confirmed sexual abuse is shown in Table III, the mean age being 5.5 years.

Table II
Suspected perpetrators of sexual abuse victims

Father	9
Uncle	7
Neighbour	4
Family friend	4
Stepfather/brother	2
Cousin	1
Employer's son	1
Mother's lover	1
Stranger	1
Unknown	9
Total	39

Table III
Age distribution of girls with sexual abuse

Age (years)	Number
0 - 2	2
2+ - 5	15
5+ - 10	20
> 10	2
Total	39

Discussion

Nonsexual transmission of STD in children has been shown to be a rare phenomenon, once transplacental or perinatal transmissions have been excluded^{4,5}. Studies on acquired syphilis in children have shown that it is almost always sexually transmitted, from abuse by an infected adult⁶. The distinction between congenital and acquired syphilis can be difficult in a situation whereby the child is asymptomatic and the only evidence of *Treponema pallidum* infection is a positive serology test. In our study, the two girls with positive tests for syphilis had associated gonococcal infection and a torn hymen respectively. This helped to point to a sexually acquired cause and further substantiates sexual abuse in these two girls. Perinatally acquired gonococcal infection invariably presents as neonatal ophthalmitis³. Therefore, one needs to strongly consider sexual abuse in all cases of gonococcal infection outside the neonatal period.

As shown in our study, a history of sexual abuse was only obtained in 14 out of 32 cases with STD. Furthermore, disclosure was not always obtained within the first interview. Physical examination findings are useful where abnormal findings are present but unreliable in excluding sexual abuse if the genital examination is normal. This was shown in our study and many other studies which demonstrated abnormal genital findings in less than 25% of sexual abuse victims^{7,8,9}. This is especially so in our study population where the children are younger and the abuse involves fondling rather than penetrative injuries.

The majority of children with *N gonorrhoea* have vaginal discharge, particularly in the preadolescent children where the vaginal mucosa is thin and atrophic without the protective effects of oestrogen^{10,11}. This could explain the majority of our patients being in the 2-5 year age group, older children being more likely to be asymptomatic.

Sexually transmitted diseases could only be confirmed in 20 girls and strongly suspected in the remaining 12 girls with positive gram stain but negative cultures. In view of the medico-legal implications, culture for *N gonorrhoea* is the preferred method as normal vaginal flora often contains other *Neisseria* species or *Moraxella*

species that are also gram negative diplococci⁶. One child with positive DIF for *C trachomatis* was presumed to have acquired the infection perinatally since sexual abuse could not be substantiated independently and persistent carriage of *C trachomatis* for up to two years of age from the vaginal and rectum has been reported¹². Confirmation of *C trachomatis* infection should be by direct visualisation of stained inclusions after culture of the specimens in McCoy cell monolayers, because of its high specificity and positive predictive value¹³. False positive results from Ag detection tests such as DIF have been shown to occur in specimens where other bacteria are present¹⁴. As this test is not readily available locally, this limitation has to be taken into consideration in the assessment of a child for *C. trachomatis*.

From the interviews and physical examination, sexual abuse was found in a further 7 girls without STD. There are several factors that could explain the failure to obtain a positive result for STD in these 7 girls and the 12 cases with only positive gram stain results. Transport media was not consistently used; swabs were taken from the vaginal introitus and not transhymenally, which although more difficult yields a better result¹⁵. DIF tests were only sent for 8 cases; wet mount examination for the diagnosis of *Gardnerella vaginalis* and *Trichomonas vaginalis* infections and cultures for anaerobes such as *G. vaginalis* and *Mycoplasma hominis* were not available.

The alternative explanation is that these girls may not have had STD despite the presence of sexual abuse. Other causes of vaginal discharge include common childhood pathogens, bacterial vaginosis, threadworm infestations¹⁷ and the presence of a foreign body. Common childhood pathogens most frequently found are *Staphylococcus aureus*, *Streptococcus pyogenes*, and *Haemophilus influenzae*¹⁶. The vaginal mucosa of the preadolescent child is more vulnerable to autoinoculation from the anus or during an acute upper respiratory tract infection^{10,18}. In bacterial vaginosis, *G. vaginalis* is often implicated in the infection of prepubertal children. The method of transmission is still controversial. The two most recent case control studies reached different conclusions – Gardner *et al*¹⁹ found *G. vaginalis* in 15 out of 209 cases of sexually abused girls compared with one of

108 controls. Ingram *et al*²⁰ found similar rates of isolation (about 5%) of *G. vaginalis* in three groups – 191 girls having sexual contact or having STD, 144 girls evaluated for possible sexual abuse and 31 controls.

In view of our study findings, where 39 out of 55 girls (71%) who presented with vaginal discharge had been sexually abused and only 20 had confirmed STD, one cannot depend upon the confirmation of STD before starting the evaluation for sexual abuse in a child presenting with vaginal discharge; that is until such time as techniques and services for the proper and complete evaluation of sexually transmitted diseases are available. The finding of such a high incidence of sexual abuse in children presenting with vaginal discharge may be biased in that our centre is a referral centre for cases which have not responded readily to treatment. This would more often than not include cases of STD that have not been appropriately treated and excluded those secondary to common childhood pathogens or cases that have not responded as a result of reinfection in those cases with chronic sexual abuse. Furthermore, as our centre is the regional referral centre for the evaluation of sexual abuse, referral might be biased towards those cases whereby sexual abuse was suspected but not evaluated. Conversely, with the availability of interviewing skills and increased awareness of the possibility of sexual abuse, the history of sexual contact was more likely to have been obtained at our centre.

Our recommendations, therefore, are to investigate all girls with vaginal discharge for the presence of STD. In view of the medico-legal implications, the importance of an accurate microbiological diagnosis cannot be overemphasised. While awaiting the results of the investigations, the child should be carefully evaluated for sexual abuse, preferably by a multidisciplinary team, with patient and not just parental interview being an integral part of the evaluation. In the event that sexual abuse or the presence of STD is confirmed, the child should be treated medically; and other family members and alleged perpetrators screened for STD. Reporting to the state child protector should be done immediately on confirmation of sexual abuse. This is to help determine the risk of further sexual abuse to the child and other children in the family, and the family and child to be counselled. Confirmation or exclusion of sexual abuse should also not be dependent upon the genital examination findings alone.

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