BENEATH THE SURFACE

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A 2 year 10 month old previously healthy girl called Lucy was brought to see her general practitioner because of a vaginal discharge that had developed three days previously. Her mother stated that the discharge was first noticed as a green staining on Lucy's pants. Lucy had been toilet trained with occasional accidents at night, but several weeks before she had started to wet the bed most nights. Her mother mentioned that Lucy had talked about a child next door putting 'a peg on her bum'.

The GP records showed that Lucy had been an uncomplicated full term normal delivery, and had no previous health concerns. She had undergone routine child health surveillance, which had been normal, and she was up to date with her immunisations.

When he inspected Lucy's perineum, the GP noticed redness around the labia and a green discharge but no sign of introital injury. He sent a swab of the discharge for bacteriological investigation and started Lucy on topical antibiotics.

In the absence of introital injury or skin disease, the GP considers that the most likely diagnosis is a vulvovaginal infection. In his experience the onset of bed wetting is not unusual in a child of this age and he thinks that this may have caused vulval irritation and infection. He has seen vulvovaginitis in prepubertal girls quite often and decides to treat with topical antibiotics pending the swab (bacteriological) result. He considers that the ''peg'' episode amounts to normal childhood play.

COMMENT

- Vulvovaginitis in prepubertal girls is common.[1] Presenting symptoms include genital pain, pruritis, dysuria, frequency of micturition, vaginal discharge and vaginal bleeding. Physical signs include inflammation and excoriation of the labia majora, labia minora, clitoris and introitus, and a vaginal discharge. When a discharge is minimal, it may only manifest as stains on underwear.
- Several factors predispose prepubertal girls to vulvovaginitis. In particular, faecal contamination of the vulva is more likely because of the proximity of the anus to the vulva and the tendency of children to wipe their bottoms forwards. Instituting simple measures such as good hygiene practices, avoiding local irritants and possibly salt baths is common and sensible practice.[2–5] Another factor is the non-oestrogenisation of the genitalia, which manifests as a lack of labial fat pads and pubic hair, small labia minora, reduced protective cover of the introitus due to the thin and delicate vulval skin, and a thin and alkaline vaginal mucosa. This has led some authors to recommend topical oestrogen cream, particularly if symptoms recur in the absence of infection, poor hygiene, or dermatitis.[1] Although this has some logic, repeated applications of oestrogen cream may lead to side effects such as breast engorgement or recurrence after cessation of treatment.[6]
- Although the GP thought that the most likely cause of the vaginal discharge was a bacterial infection, the evidence suggests that non-infectious causes such as poor hygiene and local irritation are more common.[2–5] Nevertheless, it is appropriate to send a swab for microbiological examination, remembering that the investigation can be affected by technical factors (transport media and storage used, speed of presentation to the laboratory), and to treat with antibiotics if a pathogen is identified.[2 3 5]
- Bacteria causing vulvovaginitis can arise secondary to a previous respiratory or skin infection.[2] The presence of an organism normally associated with sexually transmitted infection (STI) is highly suggestive of sexual abuse and those children should be referred for a full paediatric forensic assessment following the national guidelines on the management of suspected STI in children and young people (box 1).[7]
- Nocturnal enuresis is common in 3 year old children. Lucy had not achieved complete dryness at night and it is not unusual for the frequency of wetting to increase during the training period. Nevertheless, it would have been appropriate for the GP to enquire about precipitating factors such as emotional upset, and to obtain a mid-stream specimen of urine to exclude a urinary infection.
- The GP missed an opportunity to explore the mother's statement about the child next door ''putting a peg on Lucy's bum''. What did this mean? Why did she mention it? Was this part of

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Box 1: Management of prepubertal girls with suspected STIs

- Screening for STIs and sexual abuse is recommended in all prepubertal children who have been found to have an STI
- A comprehensive medical examination should be undertaken by a physician/s skilled in sexual abuse evaluations and STI screening
- Local procedures should be followed (eg, area child protection committee procedures, chain of evidence)
- The subject's parents should be offered full STI screening to exclude vertical transmission
- The subject's siblings and other young people/adults in the household should also be offered screening for STIs
- The number of samples taken should be the minimum necessary and the least invasive
- Sampling can be with sterile cotton tip swabs from the vulva, posterior fourchette or transhymenal from the posterior vaginal wall, vulval or vaginal washings
- The most sensitive and specific test available for the organism should be used
- Culture tests should be undertaken to identify *Neisseria gonorrhoeae* and *Chlamydia trachomatis*
- When an organism is isolated the sample should be preserved for future analysis
- The examining physician should use a chain of evidence form
- A positive test should be confirmed preferably by a test that involves a different process
- Minimum sampling should include:
  - 1 swab rubbed on a glass slide for Gram stain/clue cells spores/psuedohyphae and placed in Amies transport medium (consider inoculation directly onto *Trichomonas vaginalis* (TV) culture and gonococcal medium, where available) for abnormal flora, TV, candida and *Neisseria gonorrhoea* (GC)
  - 1 swab for *Chlamydia trachomatis* (CT) culture
  - If available, consider using 20 ml first void urine for nucleic acid amplification techniques for CT but if positive confirm with CT culture
  - Other tests as indicated—eg, one swab from open sore for herpes simplex (HSV) type 1 and 2; two swabs from oropharynx for GC and CT; two rectal swabs for GC and CT; serology tests for syphilis, HIV, HBV, HBC repeated at three and six months

normal childhood play or could it signal Lucy's involvement with children displaying sexualised play on account of their own experiences? Did it indicate the possibility of foreign body or sexual abuse? The GP could have explored the statement by asking Lucy's mother 'Are you concerned that the child next door might have put something inside Lucy's bottom or vagina?' or 'Are you worried that Lucy might have been interfered with or touched down below?'

One month later, Lucy returned to the same GP. The discharge had persisted and she was now complaining of soreness. He examined Lucy and noted well demarcated redness around the labia with a small amount of greenish discharge. The swab taken at the first appointment was negative. During the course of the consultation the GP asked Lucy's mother whether there was any possibility that Lucy had been molested. Her mother was adamant that this could not be the case. He prescribed a course of amoxycillin and canestan cream and recommended good hygiene practices, avoidance of bubble baths, and the use of cotton underwear. He also prescribed mebendazole for possible threadworm infestation.

The GP is concerned that Lucy's vaginal discharge has persisted, and reconsiders his differential diagnosis. On reflection, he decides that the first treatment plan was probably inappropriate and now considers a wider differential diagnosis including more common causes of vulvovaginitis.

The swab has not identified an infective cause, but he is aware that the sensitivity and specificity of swab samples taken in general practice can be low and therefore an infective cause remains high on his list of possible diagnoses. He thinks that the topical antibiotic has been unsuccessful because of poor compliance, poor tissue penetration, or resistant organisms. He considers that oral antibiotics may be more appropriate and chose amoxycillin because it has a broad spectrum of cover, is inexpensive, and usually well tolerated. Canestan cream was used because fungal infections are common. He also considers underlying poor hygiene/local irritation aetiology and gave advice to combat this.

The GP had recently attended target training on child abuse and has a raised awareness of this topic. He is worried by the persistence of the discharge and felt a duty to discuss the subject with Lucy's mother. Her response closed the subject for the GP, who felt awkward at having raised the issue. He is anxious that he has upset Lucy's mother but relieved that the subject has been broached.

COMMENT

- The GP appropriately (though rather belatedly) gave advice on hygiene and irritant avoidance. However, he again omitted to investigate for a urinary infection. His decision to treat empirically with systemic antibiotics is common practice among primary care physicians, although the literature tends to favour delaying treatment until a specific infection has been identified.[2 3 5] A number of studies in prepubertal girls (excluding infants) has shown that candida albicans is rarely the cause of vulvovaginitis.[1–3] The use of canestan cream is thus unlikely to be beneficial. Regardless, he should have sent a further bacteriological swab.
- Threadworms are common in young children and can cause vaginal discharge, although the usual symptom is perineal itching. Attempting to collect eggs using a sellotape slide test may be difficult and the yield is relatively low.[2] This has led some to recommend empirical treatment with mebendazole of both the child (over 2 years) and family.[2 8]
- The GP appropriately inquired about the possibility of sexual abuse. The response of Lucy's mother was not unusual, since this issue is highly emotive. Parents often feel accused, defensive, angry, guilty, or disbelieve the possibility. Yet he missed the opportunity to enquire further about the "peg". Nevertheless, since the discharge was not profuse, offensive or blood stained, had only persisted for one month, and first line measures had not been fully evaluated, the indications that Lucy may have a vaginal foreign body were not very strong. The discussion could however have been widened to enquire about the role of the child next door, using this avenue of enquiry to engage Lucy's mother in a more open discussion that may have led to the acceptance of a referral to social services, the investigating authority for child abuse. He could have also involved the health visitor. They have excellent

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opportunities to engage families with preschool children and they have wide information gathering networks. Moreover, the health visitor may have made a home visit to explore issues in an environment where Lucy's mother felt more comfortable. This would have also provided a good opportunity to give support and reinforce good hygiene advice.
- The dilemma of leaving a child potentially unprotected by not referring versus a referral to social services on the basis of insufficient evidence or the wrong diagnosis is common to all practitioners. The Department of Health guidance *What to do if you are worried a child is being abused*[9] emphasises sharing concerns with other professionals, senior colleagues, or designated health professionals. The guidance encourages professionals to talk to colleagues, other professionals, or managers. Where oral communication has taken place the guidance also recommends that discussions and decisions are documented, and oral communications to other professionals are followed up in writing. In the UK, you do not need to seek consent to share information if you think this would be contrary to a child's welfare. The law recognises that disclosure of confidential information without consent or a court order may be justified in the public interest to prevent harm to others.[9]
- A further option for Lucy's GP would be to contact the named or designated (for child protection) doctor by telephone to discuss the case and take advice. It would also be good practice to offer an appointment after treatment to ensure resolution of symptoms or to review the diagnosis if symptoms have persisted.

Two months later Lucy was taken to the GP by her mother because she had made some worrying comments. She described an occasion when Lucy removed her pants and stood over her baby brother and said 'lick my fanny'. On another occasion Lucy had commented that her baby brother had a 'willy like daddy' and it 'went like that all over her hair'. It was also stated that when Lucy played with other children she quite often removed her pants.

Lucy's parents had recently separated, but her mother assured her GP that she was not using Lucy as a weapon against her ex-partner. The GP and Lucy's mother discussed their joint concern that Lucy may be being sexually abused. The GP sought the consent of Lucy's mother to refer her to the local community paediatrician for assessment.

The GP was alarmed by Lucy's sexualised behaviour and previous symptoms of vulvovaginitis, and considered the possibility of sexual abuse. He was now relieved that he had previously raised the possibility of sexual abuse, since it seemed to have heightened awareness in Lucy's mother and eased the current discussion about a referral for further assessment.

COMMENT

- In England, Wales and Scotland, there are local procedures for promoting and safeguarding the welfare of children that follow the national guidance published by the Department of Health.[9] These require all practitioners working with children to be familiar with procedures, to have a knowledge of who to contact in police, health, education, and social services to express concerns about a child's welfare, and to refer any concerns about child abuse or neglect to the social services or the police. In this case, since the GP was inexperienced in child protection, it was appropriate to seek the advice of a senior practitioner who was regularly involved in assessing cases of suspected abuse.

Lucy attended paediatric outpatients aged 3 years and 2 months. Her mother was anxious and agitated. She recounted a history of domestic violence by her ex-partner during her second pregnancy and described an acrimonious separation with police involvement. Lucy had witnessed the violence including her father attempting to strangle her mother and throwing her baby brother (Darren) over a chair. Her father received a police caution for this incident. Lucy was very close to her father and her behaviour had deteriorated with temper tantrums and hyperactivity after he left. She had previously had weekly access to her father but her mother had stopped this two weeks before because Lucy refused to go and he had stopped paying maintenance.

The paediatrician then reviewed the history relating to Lucy's sexualised behaviour. Her mother repeated the history as given to the GP. In addition, on direct questioning, it was reported that Lucy had episodes of passing faeces in her brother's cot and in a bucket next to the toilet. These episodes occurred during the previous month but had ceased the week before the appointment. Lucy had also started wetting the bed after her parents separated. This had initially resolved spontaneously but had restarted during the previous four weeks.

Regarding the vaginal discharge, the paediatrician ran through a mental note of relevant questions (box 2). Lucy's mother recalled that the discharge had started five months before, after Lucy had been playing doctors and nurses next door with two girls aged 7 and 10 years. Lucy had told her mother that the girls had used pegs as injections and had injected her bum. The discharge had been intermittent, green, and smelly. It had initially resolved with antibiotics and canestan cream, although it had then recurred once or twice a

Box 2: Relevant questions in suspected vulvovaginitis

- When did the symptoms start?
- Were there any triggers to the symptoms?
- What are the symptoms?
- Where there is vaginal discharge request a description of the amount, colour, odour, and whether there is any bloodstaining
- Were there any preceding illnesses? Is the child currently well?
- Are there any associated symptoms—eg, urinary frequency, anal pruritis?
- Does the child use bubble bath, perfumed soaps?
- Does the child soil or wet?
- The types of underclothing used
- How does the child clean herself after using the toilet?
- What treatments has the caregiver tried?
- Is there a history of a dermatological condition?
- Does anyone else in the family have a discharge or urinary symptoms?
- Ask about the possibility of a foreign body?
- Does the caregiver have any concerns of possible sexual interference of the child?

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week, improving after a bath. Her mother had tended to dismiss it as her own mother and the health visitor had told her that it was a common problem in little girls. She reported that Lucy always had her hands down her pants and often complained of her bum being itchy or sore. Nobody else in the family had suffered from similar symptoms although she could not be sure about her ex-partner. However, Lucy had been emotionally close to her father and she felt sure that he would not harm her.

Lucy was otherwise well. She was fully immunised, developmentally normal, and attended nursery two half days per week. She had had one previous hospital admission after ingesting two of her mother's promethazine tablets.

The paediatrician reviewed the evidence and considered the differential diagnosis of vulvovaginitis (table 1). Symptoms had persisted for four months despite simple hygiene advice, topical and systemic antibiotics, canestan cream, treatment for threadworm, and a negative swab. The discharge had appeared after Lucy had played next door with older children who used ''pegs to inject her bum'', leading the paediatrician to consider a foreign body or sexual abuse. The discharge also coincided with her parents' separation and the onset of nocturnal enuresis. The discharge had persisted after the wetting ceased and before the soiling episodes. The soiling and wetting had also occurred at a time of distress for Lucy – witnessing domestic violence, separation from her father, the birth of a new baby, and possibly maternal depression. The sexualised behaviour seemed to have appeared after the baby's birth and during the parental separation but before the vaginal discharge.

The paediatrician concluded that there was considerable concern about the possibility of sexual abuse. There was also a history of domestic violence and possible physical abuse of Darren, the younger sibling. Further assessment was thought necessary, including a detailed anogenital examination.

Table 1 Causes of vaginal discharge in prepubertal girls

Cause	Comment
Oestrogen deficiency	Thin skin, lack of cornification, alkaline pH
Poor hygiene practices	Faecal contamination due to wiping the bottom forwards Faecal contamination from soiled underwear
Infection	Sexually transmitted infections (eg, gonorrhoea, chlamydia, *Trichomonas vaginalis*) Other bacteria (eg, *Haemophilus influenza*, *Staphylococcus aureus*, anaerobes, streptococci) Fungal infection (eg, candida albicans) Viral infection (eg, herpes simplex)
Infestation	Threadworm
Local irritants	Bubble bath, synthetic underwear, allergies to soaps
Constipation with soiling	Leakage of faeces leading to irritation or infection
Dermatitis	Eczema, psoriasis, lichen sclerosis
Foreign body	
Sexual Abuse	
Anatomical anomalies	Double vagina with fistula, ectopic ureter
Rare causes	Crohn's disease with fistula, pelvic abscess, tumours (eg, lymphangioma, sarcoma botryoides)

COMMENT

- Sexual abuse presents in many ways, and because children who are sexually abused generally are coerced into secrecy, a high level of suspicion may be required to recognise the problem. The presenting symptoms may be so general (eg, sleep disturbances, abdominal pain, enuresis, encopresis, or phobias) that caution must be exercised when considering sexual abuse, because the symptoms may indicate physical or emotional abuse or non-abuse related stressors. Among the more specific signs and symptoms are rectal or genital bleeding, STIs, and developmentally unusual sexual behaviour.[10] Piecing together all the available information and building up a picture of the child and family is essential in establishing the diagnosis.[11] The assessment needs to be made in an unhurried manner within a child friendly environment. Consultations should be structured with the taking of contemporaneous and verbatim notes. Records should be signed and dated (a proforma can be helpful). It should be remembered that in any potential child abuse case, a court might later require all documentation. A chaperone is essential in these situations and can have the added advantage of allowing further observation of the child's play and interactions.

The paediatrician explained the differential diagnosis and sought maternal consent for a detailed examination (and photography) of Lucy's genitalia using a colposcope. It was explained that a photographic record of the findings is taken for the purposes of documentation, peer review, a second opinion if required, teaching and training. The paediatrician had a nursery nurse chaperone in attendance for the examination.

Initially a general examination was performed. Lucy was pale, her height was on the 75th centile and weight just above the 25th centile. The parent-held record showed that her height and weight had been on these centiles since 8 months of age. She had a few scattered brown bruises along the leading edge of both shins. Abdominal examination revealed no tenderness, no organomegaly, and no faecal masses. Lucy was cooperative and quite placid during the genital examination with the colposcope. The paediatrician noted mild reddening of the labia majora and vestibule and green staining on Lucy's pants, but no overt discharge. The hymen appeared swollen and thickened. There was a tag on the hymen at the 5 o'clock position. Lucy was asked to cough and a white object appeared at the hymenal opening (fig 1). The anal examination was normal.

The paediatrician noted that although Lucy was rather thin, previous growth parameters indicated that this was long standing and thus unlikely to indicate neglect. The scattered bruises were confined to the leading edge of her shins, a common site for accidental injury in mobile children. There was no evidence of constipation on abdominal palpation (a rectal examination was considered to be unnecessary and inappropriate). The soiling had occurred in the context of domestic violence, parental separation, sibling rivalry, and possible abuse. The resolution of this symptom could be linked with the cessation of contact with the child's father, suggesting an emotional or behavioural cause. Similarly the bedwetting could be viewed within the emotional context, although on reflection the paediatrician realised that a urinary infection needed to be excluded.

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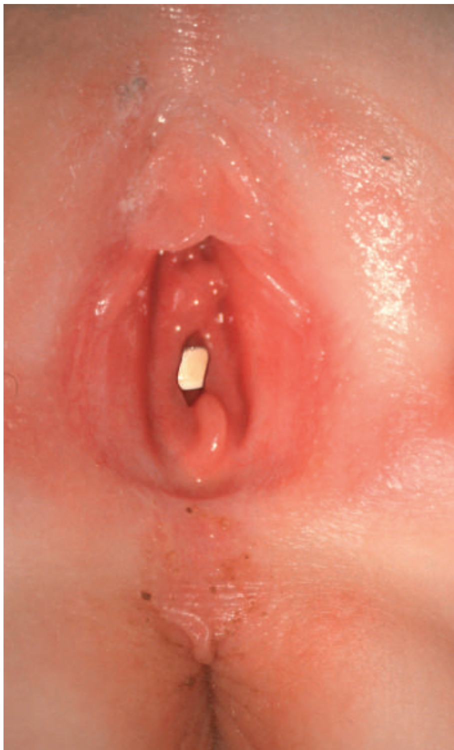

Figure 1 Colpophotograph of genitalia showing white foreign body at hymenal opening. There is erythema of the labia majora, minora and vestibule. The hymen is swollen and thickened. There is a tag at the 5 o'clock position of the hymen.

The examination revealed a foreign body in the vagina but no diagnostic signs of sexual abuse (table 2),[12] although the hymenal swelling could mask such signs. The paediatrician was aware that hymenal tags can be found following tears or disruptions to the hymenal edge, but they can also be congenital. Review of the hymenal findings following removal of the foreign body would offer additional information. It was decided not to attempt removal of the foreign body in clinic because it may have caused Lucy distress as the size and shape of the object was unknown.

COMMENT

- The use of the colposcope to examine children's genitalia is invaluable in the diagnosis of sexual abuse, and allows a more precise assessment of the associated physical signs (table 2).[12 13] The colposcope offers a bright light source with magnification and facilitates photographic documentation.[13] It must be remembered that there may be no physical findings in more than half of the children seen for suspected sexual abuse.[12] The presence of hymenal swelling may mask some of the features of sexual abuse and, in the absence of vulvovaginitis, hymenal swelling itself can be a sign of sexual abuse. In a case-control study of prepubertal children with a history of penetrative sexual abuse and controls who denied abuse, vaginal discharge was observed more frequently among the abused group.[14] Coughing during a genital examination may enable a vaginal discharge or foreign body to become visible through the hymenal opening; it can also identify urinary leakage. Examination under anaesthetic is usually still required for the removal of foreign bodies and if the examination otherwise distresses the child (box 3).[15]

Table 2 Anogenital signs and suspected sexual abuse

Classification	Physical sign
Normal vulvovaginal features	Periurethral bands or ligaments Longitudinal intravaginal ridges Hymenal tags (in the newborn) Smooth and non-scarred hymenal bumps Smooth clefts in the anterior hymenal rim (3–9 o'clock) Septate hymen Fourchette: midline avascular area
Non-specific vulvovaginal features	Erythema, vascular congestion Friability of perineal skin Vaginal discharge (unless sexually transmitted infection) Fusion of the labia
Supportive vulvovaginal features	Acute injury (eg, localised erythema, oedema, abrasions, bruising) Notch in the posterior hymen (below 3–9 o'clock) Scar in posterior fourchette Labial fusion following vulval coitus Transverse hymenal diameter 1.5 cm
Supportive anal features	Anal laxity without other explanation Reflex anal dilatation >1.5 cm and reproducible Acute changes (eg, erythema, swelling, fissures, bruising) Venous congestion Chronic anal changes (thickening of skin at the anal margin, increased elasticity, and reduction in the power of the anal sphincter)
Diagnostic vulvovaginal features	Fresh laceration of the hymen Old tear of hymen with scarring or interruption of margin Attenuation of hymen with enlargement of orifice Pregnancy in a child under 16 years Positive forensic evidence
Diagnostic anal features	Fresh laceration or scar of the anal mucosa extending beyond the anal margin and onto the perianal skin Positive forensic evidence

The findings were explained to Lucy's mother in the presence of a chaperone. She was informed that the presence of a vaginal foreign body coupled with the history of sexualised behaviour, bed wetting and soiling suggested the possibility of sexual abuse. The necessity of a referral to the social services was explained along with a discussion of the process of a multi-agency investigation to safeguard Lucy. Her mother shared the paediatrician's concerns and was anxious to cooperate.

The paediatrician made a telephone referral to the social services, and followed this with a written medical report detailing the history (including chronology), examination, and giving a professional opinion. Lucy was admitted to hospital the following day for the removal of the foreign body by the paediatric surgical

Box 3: Indications for an examination under anaesthesia and vaginoscopy in children with vulvovaginitis

- Recurrent vaginal discharge unresponsive to simple measures and antibiotics
- Offensive, bloody, vaginal discharge
- History suggestive of a foreign body
- Clinical suspicion of a foreign body
- Foreign body found on examination and unretrievable with irrigation (irrigation should not be attempted in younger patients due to the risks of causing injury and distress)
- Uncooperative child

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Figure 2 The foreign body is identified as a curtain hook.

team. Arrangements were made to examine Lucy's younger brother to exclude physical or sexual abuse, and to review Lucy following hospital discharge.

COMMENT

- Consent for a referral to social services should be obtained unless this would place the child at significant risk of harm.[9] Siblings of index children should also be medically assessed as they are at increased risk of abuse. Where there are concerns of child abuse and neglect, practitioners should not attempt to conduct their own investigation and should be careful to avoid asking children leading questions that might jeopardise any potential criminal investigation.
- It is essential to spend time explaining examination findings, their significance, and the process of a multi-agency assessment. Conveying suspicion of sexual abuse to parents will lead to a wide range of emotions including anxiety that a child will be removed, anger towards the examining doctor and other staff members, disbelief, denial, distress, and in some instances relief that the diagnosis has been made.
- In cases of suspected sexual abuse it is good practice to review the child several weeks later to document any changes and healing, to review the need for STI screening, and to exclude further abuse. Other health related issues should also be addressed; in Lucy's case these include growth, bed wetting, soiling, and behaviour.

Lucy was admitted the following day for an examination under anaesthetic. A V shaped deficiency in the hymenal edge was noted underlying the hymenal tag. A curtain hook was removed from her vagina (fig 2). No trauma occurred to the hymen during the procedure. She made an uneventful recovery and was discharged the same day.

Shortly after, Darren was assessed and found to be healthy. During this appointment, it was stated that Lucy had told her mother that a 7 year old neighbour

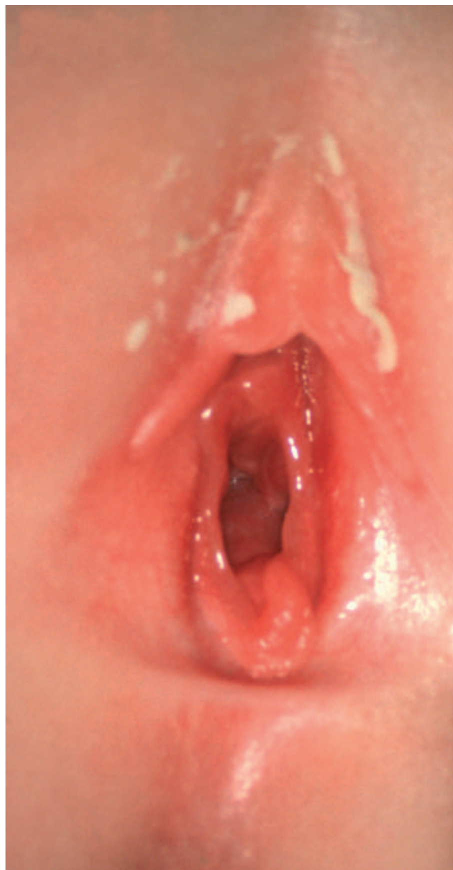

Figure 3 Colpophotograph of genitalia 3 weeks after surgical removal of the foreign body showing some resolution of the hymenal swelling, a clearer definition of the hymenal opening, and the presence of the V shaped notch at the 6 o'clock position beneath the hymenal tag.

Box 4: Management of prepubertal girls presenting with vulvovaginitis

- Full detailed history
- Full examination with assessment of pubertal status
- Inspection of the anogenital area
- Obtain a midstream sample of urine
- Obtain a vulval or vaginal swab (if the swab can be passed through the hymenal opening without discomfort) for culture and sensitivity, and a slide for Gram stain
- Await the results of urine and swab tests before treating with antibiotics
- Significant constipation should receive standard treatment
- Institute simple symptomatic treatment
  - salt baths
  - barrier creams
  - hygiene measures
  - avoidance of irritants such as bubble baths
  - use of cotton underclothing
- Consider empirical treatment of the child and family members older than 2 years with 100 mg mebendazole repeated two weeks later
- Where an abnormality of the urinary tract is suspected perform a pelvic and renal ultrasound and refer to a paediatric urologist if abnormalities are found
- Where a dermatological cause is suspected, treat with standard treatments. Refer to a dermatologist if uncertain or standard measures unsuccessful
- Offer a follow up assessment
- Where there is a pure growth of bacteria, antibiotics should be given depending on the sensitivities
- Where an STI is identified, the child should receive confirmatory testing and assessment for sexual abuse following the national guidelines on the management of STIs in children and young people[6]
- Where sexual abuse is suspected or found, follow the Royal College of Paediatrics and Child Health and the Association of Police Surgeons guidance on paediatric forensic examinations and local/national child protection procedures.[13] Where in doubt seek advice from the named or designated professionals

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Box 5: Management of prepubertal girls with persistent vaginal discharge/vulvovaginitis

- Reassess the history in detail
- Re-examine the abdomen and anogenital area
- Repeat the vulval/vaginal swab and consider the addition of STI screening tests (see national guidelines[7])
- Consider sexual abuse. If suspected follow local procedures, take advice from the named or designated professionals, and refer for a full paediatric forensic assessment
- Continue simple symptomatic treatment
- Consider examination under anaesthetic for foreign body if there is:
  - recurrent vaginal discharge unresponsive to simple measures and antibiotics
  - offensive, bloody, vaginal discharge
  - history suggestive of a foreign body
  - clinical suspicion of a foreign body
  - foreign body found on examination and irretrievable with irrigation or simple forceps retraction
  - uncooperative child
- Consider referral to local specialists if rare causes or anatomic abnormalities are suspected

had pushed the curtain hook into her vagina using a peg. The child's mother had become aggressive when approached about the incident. Lucy's mother was aware that the neighbour had been the subject of a social services investigation because an "uncle" had sexually abused her 14 year old daughter. Lucy's mother also informed the paediatrician that the 14 year old had been involved in sexualised behaviour with the 7 year old daughter.

The paediatrician remained concerned about the issues relating to Lucy's father, and was concerned that the neighbour's children may be victims of sexual abuse but were unprotected. The allegations were recorded and passed to social services.

The paediatrician reviewed Lucy three weeks later. The vulvovaginitis had completely resolved. She suffered no further episodes of soiling but continued to wet the bed once or twice a week. Examination of her genitalia revealed no redness or discharge. The hymenal swelling had resolved leaving a clearer definition of the hymenal opening and the presence of the V shaped notch at the 6 o'clock position, underlying the hymenal tag (fig 3). Anal examination was normal.

The police and social services had visited Lucy's mother. She was being threatened and intimidated by the neighbours and was seeking to be rehoused. Lucy's father was demanding contact with Lucy. Lucy was having frequent temper tantrums.

Although a multi-agency investigation was in process, Lucy's mother appeared depressed, isolated, and relatively unsupported. She had difficulty trusting and working with social services. The paediatrician sent a further report to social services, wrote letters to support rehousing, referred Darren for a nursery placement, contacted the GP regarding the mother's depression, and arranged to see the family three months later.

The paediatrician was aware that the notch in the posterior edge of the hymen may represent a healed tear and thus be a sign of a penetrating injury (table 2). A further medical report was sent to social services summarising these findings and giving the opinion that this was likely to be a case of sexual abuse.

The paediatrician was also concerned that Lucy's mother was having difficulty coping and that she was depressed. Lucy's previous visits to her father had offered her mother some respite from dealing with Lucy, but access remained suspended while social services and the police were carrying out their enquiries. Other avenues of networking and support for Lucy, Darren and their mother were therefore sought.

COMMENT

- Multi-agency investigations may take time to complete. Paediatricians have a role to coordinate the aftercare and provide support for the child and family. Paediatricians should also contribute to the core assessment conducted by social services, attending and contributing to the decision making at any multi-agency meetings, and attending court to provide evidence on behalf of the local authority or the child (including private law proceedings). They should also ensure appropriate follow up of health and social concerns, commission specialist assessments where required, liaise with primary care, and network with other agencies.

OUTCOME

Lucy, Darren and their mother were rehoused in a different area of the city. Lucy's father was granted supervised access at a local authority contact centre following private law proceedings brought by him. There was insufficient evidence to implicate him in any sexual abuse of Lucy but sufficient evidence to ensure Lucy's protection at contact visits. Lucy's father did not request contact with Darren.

Lucy and Darren were given nursery placements. Their mother received support from the primary care team and further treatment for depression. Lucy and her mother continue to receive social services support and are currently on the waiting list for family therapy.

There was a full social services investigation of the neighbour and her children. It was discovered that the "uncle" had stayed in contact with the girls and suspicion remained that he continued to sexually abuse them. Both girls were placed on the at risk register following a child protection conference.

This case is based on experience of several cases and the figures have been manipulated to illustrate the diagnostic problem.

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