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Comparison of examination methods used in the evaluation of prepubertal and pubertal female genitalia: A descriptive study☆,☆☆

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Abstract

Objective: To compare the effectiveness of three different examination methods in their ability to help the examiner detect both acute and non-acute genital injuries in prepubertal and pubertal girls suspected of having been sexually abused.

Methods: Forty-six prepubertal and 74 pubertal girls, whose ages ranged from 4 months to 18 years, were evaluated to determine the relative effectiveness of three different examination methods.

Results: All the girls had sustained a recent genital injury from various causes. The mean time between an injury and the first examination was 24 h for the prepubertal girls and 27 h for the pubertal girls. The three "multimethod" examination approaches used were the supine labial separation method; the supine labial traction technique; and the prone knee–chest position. The supine labial separation method was useful in identifying an injury on the external portion of the genitalia in both groups of girls. Injuries within the vestibule, on the hymenal surface, or in the fossa navicularis required greater separation of the labia. This was accomplished through the use of either the supine labial traction technique or the prone knee–chest position. The prone knee–chest position was the most successful method for identifying hymenal lacerations in both groups of girls. Of the 10 hymenal lacerations detected in the prepubertal girls 20% were identified during the use of the supine labial separation method, 60% with the supine labial traction technique, and 100% with the prone knee–chest position approach. Of the 49 hymenal lacerations detected in the pubertal girls 24% were identified with the supine labial separation method, 65% with the supine

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labial traction technique, and 90% with the prone knee–chest position approach. The data from this study has shown that the results of a medical examination will vary by the method employed.
Conclusions: While no single technique detected all the injuries, the use of the multimethod examination approach did prove to be a valuable adjunct in the evaluation of both the prepubertal and the pubertal girl's genitalia, particularly in the identification of a hymenal laceration.
Practice Implications: This approach uses three different examination methods: the supine labial separation method, the supine labial traction technique, and the prone knee–chest position. According to the results of this study, without the combined use of these three methods a significant number of injuries, particularly hymenal lacerations, could be missed in both the child and the adolescent.

Keywords: Accidental genital injuries; Adolescent sexual assault; Child abuse; Child sexual abuse; Forensic evidence; Sexual assault; Genital injuries; Sexual abuse

Introduction

The medical evaluation of sexually abused children and adolescents has undergone many changes since this problem first came to the attention of the medical community. While it is recognized that the investigation into a case of possible sexual abuse is a multidisciplinary one, health care providers have always been expected to play a key role in determining if a child's or adolescent's complaint could be verified by a physical examination.

In response to this need, the medical community has been pursuing a variety of examination methods in an effort to find a technique(s) that would provide the examiner with the greatest amount of information while being the least intrusive (Cantwell, 1981; Cowell, 1981; DeJong, Emmett, & Hervada, 1982; Horowitz, 1987; Huffman, 1974; Paul, 1977). The examination method first used in this evaluation process was the "supine labial separation" approach. The limitations of this method were not fully appreciated until other techniques were introduced.

Redman and Bissada (1976) described an examination method now referred to as the "supine labial traction technique." This approach improved the examiner's ability to separate the labia and provide at least a partial view of the vaginal canal. In the early 1980s the prone knee–chest examination position was introduced as a technique for evaluating the young female patient with a gynecologic problem (Emans & Goldstein, 1980; Singleton, 1983). Shortly thereafter, it was recognized that this method could prove valuable when evaluating children suspected of having been sexually abused (Bays et al., 1990; McCann, Voris, Simon, & Wells, 1990). However, in both studies the use of this method was limited to the evaluation of the prepubertal girl.

While each of these methods has their advantages, they also have their limitations. The supine labial separation method frequently fails to provide the examiner with a complete view of the girl's vestibule and only rarely is it adequate for examining the contents of the vaginal canal. The application of traction to the labia majora does provide the examiner with a much better view of the girl's vestibule and even the vaginal canal. However, if the girl's hymen is redundant this membrane may fold over upon itself possibly preventing the examiner from detecting an injury. The prone knee–chest position has several advantages. In this position, due to the force of gravity, the girl's vaginal canal tends to drop open and the hymenal membrane stretches out. This provides the examiner with an improved view of both the hymen