



Can we assess risk of psychiatric sequelae from perinatal injuries?

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ARTICLE INFO

Available online 8 November 2016

Keywords:

Forensic child psychiatry
Circumcision injury
Urological injury
Medical malpractice
Personal injury

ABSTRACT

Medical malpractice litigation involving seven to nine figure settlements has been on the rise over the past decade. Given the life-altering scope of these incidents, forensic child psychiatrists may be asked to opine on the effects of a permanent perinatal injury on normal human development. Whether forensic child psychiatrists can assess risk of future psychiatric effects from such incidents is an important question. This paper is spurred by two separate cases, each involving a male infant having a portion of their genitals accidentally amputated by an obstetrician–gynecologist (OB/GYN) during a routine circumcision. In each case, the genitals were repaired, but permanent defects remained. The question arises how such injuries would affect these children as they matured. An analysis of the literature supported that there are risks of psychiatric effects of such birth-related injuries. Such predictions are made with reference to what is already known about human development, and by an exploration of the literature on the psychiatric effects of comparable injuries to children.

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1. Introduction

Medical malpractice litigation involving seven to nine figure settlements has been on the rise over the past decade; many of these cases have involved obstetrical accidents (American Medical Association, 2012). This paper was influenced by two separate cases, each involving children who had a part of the glans of their penis inadvertently amputated during a routine circumcision. For each child, the amputated glans was reattached, but the reattachment resulted in permanent deficits, including deviated urinary stream and scarring at the site of injury. Each of the parents filed lawsuits against the physicians who caused the injuries. Each of the plaintiff's lawyers contacted a forensic child psychiatrist to evaluate each case as an impartial expert, to assess future risk of psychiatric sequelae as a result of these injuries. The authors of this article reviewed these two cases for research purposes, which led us to ask: should we predict future psychiatric sequelae from repair of early penile injury, and if so, how do we do it?

2. How do we assess future risk?

Based on the work of Lidz, Mulvey, and Gardner (1993), a three-pronged approach is required in ascertaining predictive outcome, and we applied this template to our work on the type of perinatal injury under investigation. It permitted us to: 1) pursue literature examining long term psychiatric effects of similar injuries occurring at a similar

age, 2) interview the family and/or child and to 3) utilize previously written documents in the case to form a final opinion. We expanded the procedure to include the five following classes of information to help gathering information on the long term effects of penile injury in cases going to court: Steps 1 and 2: Corroborating information and record review; Step 3: Literature review; Step 4: Interviewing the family and/or child; and Step 5: Utilizing past patient experience to form opinion.

3. Applying our model to cases

3.1. Steps 1 and 2: corroborating information and record review

For the two cases in our practice that spurred the present review of the literature, depositions were reviewed from the physician who caused the injury, outpatient pediatrician, pediatric urologist who reattached the penis and maintained follow-up care, mother and any significant other, such as babysitter. No mental health professionals, aside from the forensic child psychiatrist who was consulted, were involved. Medical records were reviewed.

3.2. Step 3: literature review

3.2.1. Introduction

The literature review focused on the long-term, post-operative, psychological and psychiatric course of children born with hypospadias. Hypospadias is a common congenital abnormality of the penis, where the opening of the urethra appears at various levels on the undersurface of the penis; this is seen in 1 out of 250 of newborn boys (Subramaniam, Spinolo, & Hoebeke, 2011). With the exception of less injurious cases,

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most individuals with this condition receive surgical reconstruction, the aim of which is to void in a forward stream, obtain normal penile appearance, and have a straight erection (Sharma, 2005). This congenital condition was chosen as a template in the cases at hand due to its similar anatomic location, the fact that surgical intervention is often necessary, for its similar post-operative complaints (functional and cosmetic issues of the penis), and its extensive applicable literature base, that specifically commented on the psychological and psychiatric course of these injured individuals during the decades after their operation.

The search was limited to all articles published before June 31, 2014: on hypospadias, and various combinations of depression, psychiatric, psychological, mental, anxiety, plus various combinations related to urological/genital surgery pediatric and controls. All 40 articles that were found by the search were reviewed, but only nine met the ultimate needs of the search, having positive results. Two more had negative results and they are reported first. The remaining 31 articles were unrelated to our question or were not written in English.

In order to orient the reader, before beginning the literature review, we provide the direction of general findings in the review. The results of the literature review are summarized below. Overall, after surgical repair of this condition, there was a greater incidence of negative post-operative effects, including timidity/social relation problems, difficulty initiating sexual relationships, and poor self-esteem. Further, while results on negative psychiatric adjustment were mixed, some studies also noted increased risk of depression, anxiety, behavior problems, and health-related quality of life. Because the literature is sparse, we describe each study in depth, so that their quality is more evident. We do so in the chronological order of their publication date, pointing out at times their strengths and weaknesses as we proceed.

3.2.2. The research

3.2.2.1. Correlational findings. Some research on the topic had found only minimal psychological effects from the need to surgically repair hypospadias. For example, Mureau, Slijper, Slob, and Verhulst (1997) found that the more the 9- to 18-year-old participants had a negative genital body perception, the worse was their psychosocial function, e.g., as measured by a subscale for inadequacy on the DPQ-J (Dutch Personality Questionnaire, Junior version; Luteijn, Van Dijk, & Van der Ploeg, 1989) and total problem score on the YSR (Youth Self Report, Achenbach, 1991). Schonbucher, Landolt, Gobet, and Weber (2008a) found that the later the corrective surgery in boys aged 7–17 years, the more likely they were insecure in their gender role behavior, as measured by the GRQ (Gender Role Questionnaire, Cohen-Kettenis & Pfäfflin, 2003, German version, see Medical Outcomes Trust, 2005). Liu et al. (2006) found a relationship between age of corrective surgery and an unvalidated measure of sexual inhibition (in seeking girlfriends or sexual contact). These findings concern correlations for which causation cannot be determined. The studies reviewed below report statistical differences involving groups of participants, although they do have the methodological weaknesses indicated.

3.2.2.2. Group findings

3.2.2.2.1. Negative results. Two studies that found pertinent correlational results on the question did not find any group differences of note and these are reviewed. These negative findings do not alter the general thrust of the literature that early penile injury does have some long term psychological consequences, e.g., related to self-esteem.

Mureau et al. (1997) examined 118 children and adolescents from 9 to 18 years of age using standardized questionnaires on the psychosocial effects of hypospadias surgery. The age-matched comparison group consisted of 88 males who were operated for inguinal hernia. The tests used included the DPQ-J, the SAS-C (Social Anxiety Scale for Children (Dekking, 1983), and the CBCL (Child Behavior Checklist) or YSR (Achenbach, 1991; Dutch versions; Ferdinand, Verhulst, &

Witznitzer, 1995), depending on the age of the participant. Research indicating acceptable reliability and validity was reported for these measures. Upon statistical analysis, no group differences in psychosocial function were found, although the authors cautioned that in individual cases, the surgery involved might have psychological effects.

Schonbucher et al. (2008a) examined sixty-eight 7- to 17-year olds in comparison to age-matched controls who underwent hernia repair on measures pertaining to psychosexual function. The measures involved included the PPPS (Pediatric Penile Perception Scale, Weber, Schonbucher, Landolt, & Gobet, 2008), the GRQ, and an unvalidated questionnaire on sexual attitudes. No group differences were found. However, further psychological investigation by this research group did find positive results on the question (see below).

3.2.2.2.2. Positive results. Several studies utilizing the same sample of 34 adult men operated for hypospadias in childhood and 36 controls who underwent an operation for appendicitis examined a variety of psychological and sexual outcomes (Berg, Berg, & Svensson, 1982; G. Berg & R. Berg, 1983; R. Berg & G. Berg, 1983; Svensson, Berg, & Berg, 1981). Participants were administered a semi-structured psychiatric interview conducted by an experienced psychiatrist and developed by the authors (Berg & Berg, 1983a) and several psychological tests, including an intelligence test (Swedish Psychometric Battery; Dureman & Sälde, 1959) and projective personality assessments (the Rorschach Inkblot Test Rorschach, 1921); the Franck Drawing Completion Test (FDCT; Franck & Rosen, 1952); and the Gough Femininity Scale (GFS; Gough, 1952, 1966). Overall, these studies showed that individuals with hypospadias were generally well-adjusted young adults, although several notable psychological and social difficulties emerged consistently. Specifically, during childhood, individuals with hypospadias reported increased enuresis, shyness, increased social isolation and being timid with peers at school, as well as more frequent teasing compared to controls (Berg et al., 1982; Svensson et al., 1981).

Regarding psychosexual outcomes, individuals in the hypospadias group had later age of first intercourse and fewer partners relative to controls, but a majority reported a satisfactory sex life (Svensson et al., 1981). There were no significant differences in the groups related to severity of hypospadias and psychosexual outcomes (e.g., sex drive, number of sexual partners, frequency of sexual activity), and participants in the hypospadias group showed normal social adjustment (Svensson et al., 1981). However, individuals with hypospadias showed a more doubtful affected sexual identity, among other findings, combined with lesser utilization of cognitive and emotional resources than controls (G. Berg & R. Berg, 1983; R. Berg & G. Berg, 1983; Svensson et al., 1981).

Regarding adult psychological outcomes, these group of three early studies suggested that individuals operated for hypospadias in their childhood reported increased psychiatric symptoms, including depression and anxiety, as well as decreased stress tolerance and more difficulties utilizing coping skills or resources (Berg et al., 1982). Further, individuals with hypospadias reported more impaired capacity for social relations and overall poorer interpersonal relationships compared to controls (G. Berg & R. Berg, 1983; Berg et al., 1982). However, the research used projective instruments for the most part, which have reliability and validity issues.

In a study by Sandberg, Meyer-Bahlburg, Aranoff, Sconzo, and Hensle (1989), a sample of 69 boys (ages 6 to 10) was selected from the files of a pediatric urology department at a major medical center in New York. The boys were chosen for being born with hypospadias with or without additional genital or non-genital malformations. Parents completed several behavior rating scales [e.g., (CBCL), Achenbach, 1991; Child Behavior and Attitude Questionnaire (CBAQ), Bates, Bentler, & Thompson, 1973] to assess behavior problems, social competency, academic achievement, gender role atypicality (e.g., displaying ambiguous or atypical gender-role behaviors), and family adjustment. Parent ratings were statistically compared to both the clinical and

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